

Book Review

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Lyons, C. A. (2003). *Teaching Struggling Readers: How to Use Brain-Based Research to Maximize Learning*. Portsmouth, NH: Heinemann. 204 pages. Paperback. ISBN: 0325004358.

Teaching Struggling Readers: How to Use Brain-Based Research to Maximize Learning is a timely book that addresses reading from a neuropsychological perspective. It provides a well-balanced discussion of theory and practice. It is the first book of this kind that truly strengthens educators' understanding of brain-based functioning and its connection to literacy learning. The contents are comprehensive.

In the first section, the structures of the brain and their relationship to literacy learning are presented as a dynamic and continuous process. Lyons reports that advancements in science have revealed that experiences in life may contribute to the further strengthening of neurological activity even into the adult years. For instance, as individuals continue to engage in reading and perhaps read complex text, certain areas of the brain are activated and nerve cell growth may occur. In the first chapter, Luria's three functional units of the brain are described: arousal and attention states; analysis and storage of information; and the organization, regulation, and verification of mental activity. Examples are provided on these brain-based processes that children use while performing tasks. A particularly excellent example that is illustrated in the book is the calendar trick that son Ken (2½ years old at the time) used to figure out past and present dates and days of months and years. He examined various calendars that were saved from past years and discovered patterns among and across dates of each day of the week and each month of a specific year.

The second chapter focuses on the role movement and attention play in learning to read and write. Lyons describes the motor movements involved in speech production of sounds and words as well as the fine motor coordination that is involved in writing letters and words. Before motor movements can be executed well, attention to visual and auditory stimuli is required, and these processes are discussed in relation to specific types of literacy activities.

In the third chapter, the relationship between thought and language are explored, beginning with the biological and social origins of language. This chapter really describes language as a cultural and cognitive tool that helps children reason about the world they live in. Examples are provided that illustrate

how young children use language to define events and understand relationships among events (e.g., cause and effect). Lev Vygotsky's zone of proximal development is described as the zone that children progress through to acquire new literacy skills. In this zone, children's learning is scaffolded by adults (e.g., teachers and parents) or more knowledgeable peers.

The first section of *Teaching Struggling Readers* concludes with a powerful chapter on emotion, memory, and learning. Lyons provides a very clear discussion on how emotions affect learning as well as a clear description of neurological activity involved in arousing and regulating emotional states. Her personal examples of emotional reactions to learning experiences are profound and help the reader connect to the content. A nice transition from a discussion on emotion to a discussion on memory is provided. Lyons makes connections between emotions and memory and how negative feelings of learning may be associated with difficult learning experiences. Helping children gain positive self-esteem and exhibit self-regulatory behaviors are described as an alternative to perpetuating learned-helpless and failure-accepting behaviors.

In the second section of *Teaching Struggling Readers*, Lyons focuses on creating learning environments to help students achieve their full potential for acquiring literacy. Chapter 5 describes the role motivation plays in literacy learning and how teachers can facilitate motivation in students. Intrinsic and extrinsically motivated readers are described. Helpful suggestions are provided to educators for motivating reluctant readers. The content in Chapter 5 flows right into Chapter 6 where the emphasis is on teaching hard-to-teach children. This chapter provides methods for observing and assessing reading achievement. A thorough list of student behaviors is generated and provided in this text. A decision-making process for meeting the needs of struggling readers is outlined for educators. This is followed by an explanation of specific strategies for helping children develop phonemic awareness, word study, directionality, and learning to remember words. The final chapter in this section specifically addresses the needs of children with learning disabilities and attention deficit disorders. Lyons includes a true, compelling story about her own experiences teaching inner-city juveniles with learning disabilities. She provides ideas for creating an emotionally stable and responsive learning environment.

In the final section of *Teaching Struggling Readers*, Lyons describes the characteristics and qualities that expert teachers possess. Chapter 8 provides an explanation on the social-emotional aspects of teaching such as building trust; showing genuine interest; engaging in personalized conversation; listening; providing constructive, targeted, positive feedback; and maintaining consistent support, expectations, and limits in students. This chapter also describes how teachers can engage in a reflective and continuous improvement process on their teaching. Expert teachers' knowledge, skills, and practical experiences in working with challenging readers are depicted in Chapter 9 through authentic

case examples. *Teaching Struggling Readers* concludes with a synthesis and a discussion of implications for educators.

Lyons writes in such a way that the complexities of the brain and its relation to cognitive, emotional, and behavioral characteristics of children are clearly understood. The contents of *Teaching Struggling Readers* provide an outstanding balance between theory, research, and practice. The authentic stories about individual children and classrooms of children make profound explanations of the teaching and learning process and the interaction of physiology and ecology come alive.