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# Book Review
# Brain Science for Principals:
# What School Leaders Need to Know

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**Book Review**

Although there is abundant literature on school leadership and management, including the important books by Doyle and Zakrajsek dealing with epistemological, content-oriented and technical aspects of educational neuroscience, and learning addressed to college students, and works by Wilson & Conyers (2013) and Linda Lyman (2013) that specifically spoke to teachers and educational leaders, there is significant debate about the value of brain science research for education and educational leadership, The book described here relates to the developments of brain science research and its connection to teaching/learning, and the basic and essential technology of the processes that schools promote, when the school principal's work is expected to be directed to ensuring high-quality teaching-learning  In the editor's words, this book "emerged as a culminating project requiring real learning that would be a real challenge and by filling a gap could make a real difference".

*On page 1, the editor comments that:*

*The shape of minds and lives will change as the field of educational leadership continues moving in the direction of incorporating educational neuroscience*

*findings into schools. New dimensions of knowing and opportunity will open for students, especially those marginalized by current teaching practices, policies, and pervasive deficit thinking.*

*Thus, principals must be prepared to help teachers realize when their understanding of learning is outdated.*

The book exposes the reader to various approaches that support the involvement of students and teachers from diverse backgrounds in their common journey towards learning and knowledge. As such, it is an important, innovative and useful step, which brings to the forefront studies about the principal's work on the neuroscience level, including everything from challenging the idea of fixed intelligence to content learning, including the arts in schools, to thinking carefully about principals' mindfulness. This is the book's major contribution.

Understanding how the brain, intelligence, and emotional control change as children develop is a useful and important skill for educators, not only because of the consequences for learning, but also to help promote equity in schooling. Picturing that the brain can develop, grow and be nurtured presents a different paradigm for principals who make decisions about their students' learning, discipline, and physical activity.

As the editor describes, the book emerged from two decades of interest in the findings of neuroscience research in education and its consequences for school leadership, teaching and learning. The book was designed in a way that presents to the reader a final project completed by seven master's students enrolled in a Principals Preparation Program Cohort class at Illinois State University.

Principals new to the profession will find new information and applicable strategies they likely did not receive as part of their training. Experienced principals will recognize many of the ideas from previous information on child development and student motivation, but with enriched and updated information from neuroscience. All principals will gain new perspectives of students' diverse academic, physical, emotional needs, and have the scientific

backing they need to create environments where students learn in brain-friendly ways, experience subjects that motivate and enrich them, and are less constrained by old notions of why they are and how they can become.

Structurally, the book is divided into six parts. In the first part, the editor presents how learning can be developed in students. She begins by describing the essence of learning and continues with practical and technical insights that principals can employ to promote learning. The following chapters in Part 1 describe the concept of neuroplasticity, and how it has redefined intelligence from an unchanging fixed entity bestowed at birth to a capacity that grows and changes. The following chapter discusses teaching metacognition to students of all ages, in order to improve performance and change their brains. Chapter 4 presents a comprehensive look at how being bilingual benefits a learner's brain. Chapter 5 explores multitasking and its effect on improving learning.

The second part, 'The Fit Brain', presents findings about the importance of sleep, school breakfasts, physical activity, and memory training, and how these can affect and improve brain activity.

The third part of the book (4 chapters) lays the biological foundation of learning, and how mental wellbeing affects the quality of learning and the learner's performance, including strategies to support mental wellbeing and relieve stress, and their effect on the quality of learning.

Part 4 describes the school's 'brains' and demonstrates how teaching strategies affect the learner's performance and development, and change reading patterns. In addition, strategies to improve mathematical and verbal literacy are presented.

The three chapters of part 5, 'Ages and stages of the brain', communicate how the principal can develop and promote scientific curiosity in elementary school, memory development strategies, and interpersonal cooperation, including personal and interpersonal emotional discourse to promote learning and mental wellbeing in

middle school. Chapter 21, which I found very interesting for our modern-day educational reality, presents the biological roots of adolescents' impulsive behavior and suicidal tendencies. The chapter ends with practical recommendations how to encourage the emotional relationship between teachers and high school students.

The sixth and final part, 'Inside the brain of a principal', explores mindfulness as a way of paying attention and an aptitude important for educational leaders in today's complex immediate-response environments. Chapter 23 introduces the relationship between neuro-leadership and emotional intelligence. Chapter 24 focuses on leadership that builds cultural processes, creates emotional resonance and leads through emotional intelligence. The book concludes with a chapter of conclusions that emphasize principals' need to understand the validity of neuroscience and its capacity to promote teaching and learning, and to lead schools with this awareness.

While the book describes 'What can neuroscience teach principals and school leaders about leadership and learning?' which makes this book an important supplement for literature dealing with neuroscience and education. Nevertheless, there was an expectation that there would be better linkage between the book's different chapters, with an attempt to derive theoretical conclusions and practical recommendations that would serve school principals as pedagogic leaders to establish the connections between teaching-learning, the brain and emotions. Moreover there is a feeling that the book lacks a final chapter – a sort of epilog that would draw a connection between the different chapters in order to establish a theoretical knowledge based foundation and outline a path for the implementation of this paradigm in schools, leading from organizational-technocratic praxis to an organization whose work revolves on the learning brain and a learning organization. Additionally, in the didactic dimension, it would be helpful if each chapter could provide criteria for the implementation of this paradigm in schools as organization and in the individual classroom. Despite these shortcomings, the book constitutes an essential read for

incumbent principals at various stages of their careers, participants in principal training programs, teachers, and leadership teams of schools.

As it links theory and practice in developing teaching/learning at school, and in deep recognition of the place of neuroscience in improving teaching/learning processes, I warmly recommend this book.

## References

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