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Book Review. Oakley, B., Rogowsky, B., & Sejnowski, T. J. (2021). Uncommon sense teaching: Practical insights in brain science to help students learn. Penguin.

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Neuroscientists have made enormous strides in understanding the human brain and how humans learn. However, this understanding has had little impact on most classrooms where much learning and teaching occurs. *Uncommon sense teaching* is a book which makes neuroscience research applicable and practical for the modern-day classroom. Teachers, parents, curriculum developers, policymakers and anyone interested in improving education will find the insights from this book most useful and relevant. Drawing on research findings and the authors' combined decades of experience in the classroom, *Uncommon sense teaching* provides education practitioners with the essential knowledge and tools to improve their teaching practice, whether they are experienced professionals or simply parents hoping to offer extra support for their children's education.

In *Uncommon sense teaching*, the authors discuss and apply concepts in neuroscience research to explain why some teaching approaches are particularly effective and account for the teaching approaches suggested in each chapter. Although the pedagogical approaches discussed may be familiar to education practitioners, the value of the insights shared lies in the manner the authors relate the science of how our brains work with learning (Holland, 2022). The authors also underlie practical strategies suggested in each chapter with the recent research done in neuroscience and present it in a manner that practitioners at any level can adopt to harness the strengths and qualities of the human brain to facilitate learning.

In the first chapter, the authors highlighted the core role of building long-term memory and how students are tricked into thinking that they are learning. This is followed by a discussion of teaching inclusively by considering the function of the working memory in the second chapter. The third chapter explores the function of the declarative pathways in the brain to facilitate learning and improve student understanding. In the fourth chapter, the author addresses the challenges faced by students who procrastinate, particularly when completing challenging tasks and when preparing for exams. As such, the author suggests that one way to avoid nefarious multitasking and last-minute work is to apply the Pomodoro technique, including specifying the criterion for the task and introducing a deadline. This technique suggests that students put away distractions, avoid challenges, and focus their attention only on an important task for a specific period of time before having a short break (Kreider et al., 2019). The next chapter explores the underlying factors to explain why some students acquire some skills much faster and easier than others. The authors explained that the *neuronal recycling hypothesis* developed by neuroscientist Stanislas Dehaene is largely responsible for this evolutionary process.

In Chapter 6, the authors explained the important functions of using both the declarative and procedural memory pathways to help students acquire and apply knowledge learnt in the classroom effectively. Chapter 7 highlights the habit-forming power of procedures. The authors explained how the power of procedural memory, where routines foster positive habits, helps lay the foundation for a productive classroom climate. The next chapter builds on this and discusses the role of stress in learning and explores the potential of socio-emotional learning to develop self-awareness, self-management, relationship skills, and responsible decision-making, all vital skills in the working world. The authors propose that teachers adopt collaborative learning approaches to build these social skills and mitigate stress levels in the classroom, particularly when managing challenging projects and exam preparation. Chapter 9, however, breaks down the challenges of online teaching and suggests several brain-related approaches to create a sound foundation for online teaching. The last chapter highlights the critical role of infusing neuroscience-related pedagogical approaches into lesson plans to shape and structure lessons over time to facilitate the learning process.

One engaging aspect of the book is the seamless combination of neuroscience research with personal anecdotes from years of teaching experience. Some of the complex concepts are illustrated and explained through diagrams and a cartoon of an octopus and its roving tentacles. To conclude, some suggestions made in the book that many practitioners would find helpful and relevant to their own practice are:

- Use the recall and retrieval method to help students prepare for assessments better.
- Use 'brain breaks' in between the teaching of core concepts to allow for reflection time and facilitate the consolidation process.
- Encourage peer teaching and higher-order tasks for higher-ability students.
- Introduce a reflection or a one-minute summary activity at the end of each lesson.
- Introduce frequent formative assessment checks to monitor student progress and guide lesson development.
- Encourage active learning through discussions and retrieval exercises.
- Use collaborative learning in classrooms to aid knowledge creation and social learning.
- Teach procedures and routines to foster positive classroom habits at the start of the term and establish effective classroom management.
- Use 'effective hooks' to start lessons by connecting critical content to what students already know.
- Shape and structure lesson plans with the final objective in mind using the approaches suggested with the plan employed as a guide.

Although the book does not address how the strategies introduced may produce varied effects in different cultural contexts, the chapters in this book provide a wealth of information and guidance on developing and improving pedagogical practices in the classroom and revolutionising the way education practitioners consider their approaches using cutting-edge neuroscientific research. Readers interested in this topic should also consider reading *Why we do what we do: Understanding our brain to get the best out of ourselves* and others by Helena Boschi (2020) – a book replete with concrete and illustrative examples to unravel and clarify the complex mechanisms of the human brain.

Additional references

Boschi, H (2020). *Why we do what we do: Understanding our brain to get the best out of ourselves and others.* Wiley.

Holland, T (2022). Uncommon sense teaching: Practical insights in brain science to help students learn: Barb Oakley, Beth Rogowsky, & Terrence J. Sejnowski. Penguin Random House. *Journal of Geography, 121*(2), 86–86.

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