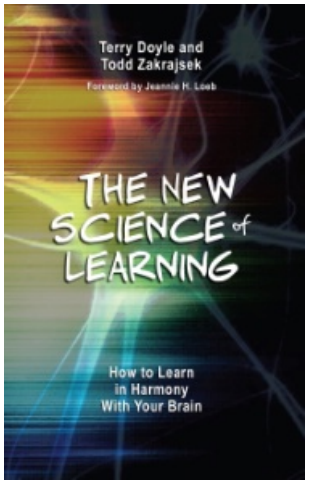

The New Science of Learning: How to Learn in Harmony With Your Brain

Doyle, Terry; and Zakrajesek, Todd
Stylus Publishing, Llc., 2013

Book Review

Tags: learning theories | life-long learning | student learning

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Date Reviewed: September 16, 2015

This book is meant to be put into someone's hands in the months before they begin college, but it also serves as a useful tool for anyone contemplating returning to school after time away – adults getting ready to begin seminary, for example, after years in first or second careers – or for anyone wishing to become a "life-long learner," whether in formal academic circles or in private life. Written in accessible language and peppered with illustrative examples, this slim volume blends common sense – such as eat a healthy, balanced diet, make time for regular exercise, get enough sleep, don't cram – with a wide array of insights from neuroscience research and learning theory of the last fifteen years. Both authors have extensive experience and publications focused on the integration of cognitive research, biology, and learner-centered teaching: Doyle at Ferris State University and Zakrajsek in the Department of Family Medicine at UNC-Chapel Hill.

The topics covered in the eight main chapters focus on learning and: sleep, exercise, the use of multiple senses, discovering and utilizing patterns, memory, "fixed" versus "growth" mindsets, and paying attention. Each chapter quickly sets forth recent pertinent research, then concludes with five to ten summary points. Much of the material in the early chapters confirms common sense: getting enough sleep and exercising regularly are necessary for both learning and memory. The brain needs "down" time to process new information. Because sleep and exercise are so foundational for learning, these topics pop up repeatedly in subsequent chapters, especially in the discussions of memory and paying attention.

The discussions in chapters 4 through 8 take up facets of cognitive and learning research that move beyond common sense. Where two or more senses are put to use both learning and

memory increase: for example, listening and reading, or reading aloud, or sight and touch. Even studying near the scent of roses has a positive impact. Elaboration is another key: the more routes one takes to the goal – such as via concept maps or annotating the pages of books – the stronger the learning. One chapter describes many ways of discerning patterns and "chunking" blocks of information to help make learning easier and faster. The chapter on memory reminds us that cramming is not nearly as effective as "distributed practice," processing material in smaller bites over a longer period of time, which gives the brain time – it needs at least an hour – to do its work. This means that taking classes back-to-back, with little or no break in between, is nearly always a bad idea, especially in regard to the material in the first class. Resting between classes or learning activities, as well as taking short naps and breaks, daydreaming, or going for a walk or run, turn out to be essential for effective learning.

Many students are told in elementary school how smart they are, as if learning is a fixed attribute, rather than being praised for the hard work they are doing, which affirms their learning as a process of steady "growth." As a result, they often have difficult transitions in middle school and beyond, where the material demands more and more effort. Long-term success is a result of steady work and effective learning strategies, not intelligence.

The New Science of Learning's extensive use of citations provides lots of trails to follow if the reader is inclined to go deeper, but also makes the book choppier and less engaging than if the authors had rephrased the information in their own words. But this is a minor quibble. I plan to give a copy of this book to my son, who will start college next year, as well as my daughter, a high school sophomore, mostly because I learned so much about how to learn that I wish I had known long ago.

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