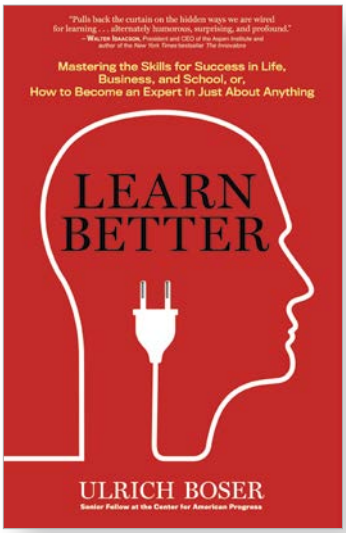
Learning from the Science of Learning

If we know so much, why aren't we smarter?

Learn Better: Mastering the Skills for Success in Life, Business, and School, or, How to Become an Expert in Just About Anything
by Ulrich Boser

Rodale Books, 2017, $24.99; 304 pages.

As reviewed by Robert C. Pianta



In *Learn Better,* Ulrich Boser, a senior fellow at the Washington-based Center for American Progress, takes readers on a tour of recent advances in "the science of learning," a collection of findings from psychology, neuroscience, education, and technology. In the process, Boser acknowledges one of the fundamental contradictions related to this accrued scientific knowledge of education and human development: At no other time have we known so much about human potential—the plasticity of the brain, the conditions that activate and stimulate human performance, and the ways technology can deliver knowledge and skills-training at a scale and efficiency that was unimaginable even a decade ago. We are, as exemplified in the numerous anecdotes and examples cited throughout the book, built to learn. But at the same time, society's systems for fostering human potential—public education, social welfare programs, workforce training—are widely viewed as underperforming and even as contributing to inequality rather than helping to remedy it.

How is it that we know so much about learning and yet cannot tap into this rich knowledge and effectively apply it in the very systems that could benefit? If we have learned so much about learning, why aren't we smarter?

Boser's volume sets the table for addressing this fundamental contradiction; it frames the issue but does little to resolve it or confront it head-on. There is a "safe" quality to the book in that the narrative sticks to the science. And while the author acknowledges the importance of educators, he doesn't ask why their mission is failing at such a systemic level.

There is no question that our scientifically derived knowledge of human learning has expanded and deepened over the past decade, and Boser helpfully lumps the many pieces of what we know into a half dozen processes or actions that enhance learning: value, target, develop, extend, relate, and rethink, each of which serves as the focal point of a chapter.

The book weaves a narrative tapestry from stories, vignettes, and information drawn from interviews and visits with noted scientists, experts, leaders, entrepreneurs, and practitioners. As Boser demonstrates, the evidence is strong that we learn more, and more quickly, under the conditions reflected in the book's six themes: Learning improves when we see *value* in what we are learning; when it is focused on an identifiable skill or cluster of information *(target);* when it *develops* in a sequence from simpler to complex; and when the new material is processed in ways that connect to current knowledge or skills by extension, association, or rehearsal in some form *(extend, relate, rethink).* Importantly, the book offers these six themes with corresponding strategies, backed up by solid evidence, that individuals can adopt to improve learning.

By rendering a burgeoning and complex scientific literature suitable for popular understanding, the book makes a valuable contribution. And to his credit, Boser emphasizes that this new lens on human cognitive potential reveals that learning is not the result of some preprogrammed neurophysiological process. Rather, it is fundamentally interwoven with a set of conditions that may or may not be present in educational and family settings or intuitively applied by learners themselves. *Learn Better* offers a more complex and informed perspective on the implications of brain science for everyday living. This is a welcome contrast to the tendency for the popular press to over-interpret the results of cognitive neuroscience to suggest that the brain is the sole locus of responsibility for learning, as if context did not matter.

Boser's six conditions for fostering learning and cognition are useful in that they help organize a diverse set of findings and facts and frame them as actions. This framework foregrounds the essential roles that contexts, people, and learners themselves play in promoting (or hindering) learning. But the author's effort to extend the analysis into "so why aren't we smarter?" is tepid and barely developed. The last section of the book offers a "toolkit" for various goals that could be advanced by harnessing this new knowledge about learning. As a self-help recipe for those seeking to enhance their own or others' learning, the book and its toolkit work well. And as a prescription for educational practice, the examples of classroom activities and approaches are generically helpful and innocuous. But as a guide for policy (offered in the last section of the toolkit), the book falls short:

Boser's recommendations are rather thin, oversimplified, and lacking in analysis of tradeoffs and politics; thus, they are likely to be misinterpreted or over-applied. For example, to simply recommend that educational curricula or assessments should reflect the author's six principles, or recent evidence from the science of learning, does not provide policymakers in state departments of education the kind of granular analysis that would actually help them choose among the myriad offerings that all claim to reflect the latest research.

As the dean of a school of education, I am keenly interested in the book's topic. I am familiar with the scientific evidence presented and have been eager for a volume that might bridge the all-too-wide divide between the science of learning and the practice of teaching and learning. There is a strong need for accessible renderings of the scientific literature that educators and public officials could translate into practice and policy. *Learn Better* might be of value to teachers-in-training and students of educational leadership, who could gain insights and information relevant to their work. The book might also shape some of their thinking about the environments they create and how their assumptions influence the opportunities they provide to learners. But while it is rich with information and anecdotes, the book is light on analysis of the complex phenomenon that is learning—an analysis that could have left readers with a far deeper understanding. In this sense, *Learn Better* is a bit more of a selection of desserts than a four-course meal.

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Why aren't we smarter? Given what we know about learning, why don't schools look more like California's High Tech High, with its emphasis on project-based team problem solving and the relevance of curricula that cross traditional content domains? Why don't more video games follow the Minecraft model, which aims to foster creativity and problem solving? Why is it that our approaches to educating poor children seem to set up conditions that are exactly the opposite of the ones *Learn Better* identifies as optimal? Why are middle schools so broken?

These are thorny questions that are beginning to seem intractable in American public education. *Learn Better* might be a terrific first step in gaining traction toward solutions, but it leaves considerable distance still to be traveled.

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