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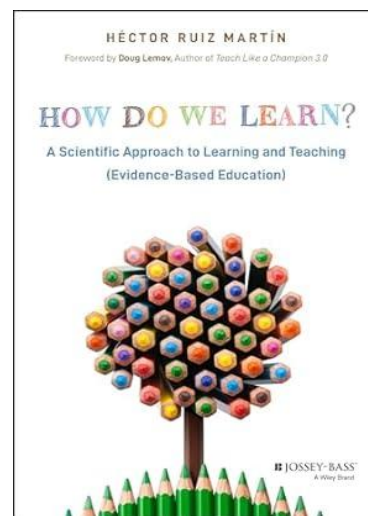
**Ruiz Martín, H. (2024). *How do we learn? A scientific approach to learning and teaching (evidence-based education)*. Jossey-Bass.**

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Héctor Ruiz Martín, Director at the International Science Teaching Foundation (Barcelona, Spain), has decided to join the generations of scholars from various fields that have posed and pondered the titular question of this book, *How Do We Learn?* While a definitive answer may never be agreed on by all, Ruiz Martín's book does a fine job of collecting and presenting essential and foundational information, attempting to separate the wheat from the chaff.



On the dedication page of the text, Ruiz Martín notes that this book is for those who dedicate their lives to education. While learning is in the spotlight, the context clearly assumes the practical application of the content. After all, how can educators effectively teach if they do not grasp the basics of how a learner learns? (Dehaene, 2021). Beyond educators though, readers will gain insight into effective strategies and approaches that can be used to understand and improve their own learning. College students from various majors (e.g., education, psychology, sociology) also will appreciate the survey of foundational material presented within its covers.

The text is organized into five sections that consider the vital influences on the learning process: cognitive (memory and deep learning), social and emotional (emotions, motivation, beliefs, social dimensions), self-regulation (metacognition, self-control, emotional self-regulation, resilience and grit), and key teaching processes (instruction, feedback, assessment). Additionally, there is an appendix section devoted to “pseudoscience” myths about learning (e.g., learning styles, brain potential, cerebral lateralization, and dominant hemispheres) that the author puts to rest, or at least tries to, since some seem to have developed a life of their own.

John Holt (2017) noted that we need to “...better understand the ways, conditions, and spirit in which children do their best learning, and are able to make

school into a place where they can use and improve the style of thinking and learning natural to them.” (p. 12). Taking this charge, Ruiz Martín analyzes learning and teaching using the scientific method. His goal is “...to contribute to disseminating, especially among teachers, what research has revealed about how learning occurs and the factors that have a greater impact, in order to promote it in the academic context” (p. 2). He presents his case utilizing foundational research that is supported by scientific consensus with the hope that readers will transfer that acquired knowledge into their practice to improve student learning.

Probably the most obvious and beneficial feature of the text is the comprehensible presentation of the material. A book proposing to present evidence-based research could quickly deteriorate into a dense and complex tome. This is not the case. Ruiz Martín succeeds in his intent to make the subject, “engaging and accessible” (p. 2). For readers with at least some prior exposure to developmental and educational psychology, many of the researchers and topics discussed will be familiar. However, readers who come to the book with less knowledge of the material will not be at any great disadvantage in engaging with the content.

A pitfall of many texts discussing learning is the inherent assumption that a one-size-fits-all answer is attainable. Brookfield (2015) noted, “The truth is that a lot of fruitless time and energy can be spent trying to find the holy grail of pedagogy, the one way to instructional enlightenment” (pp. 268-69). Ruiz Martín acknowledges this trap and notes that his book is not a recipe book as “there is no method that will be universally effective for all students, purposes, and contexts” (p. 3). Furthermore, he notes the importance for educators to become familiar with evidence-based principles of learning:

...rather than talking about evidence-based teaching, we should discuss evidence-informed teaching. It is not strictly applying specific methods that science has analyzed (in specific situations), but rather planning and adapting methods based on the particularities of the situation, with the guidance of what science can tell us about the factors that lead to better learning outcomes. (p. 20)

This harkens back to the days when progressives challenged “traditional” education and teaching, noting that teachers should not be the “cookbook” type—but rather the “checkerboard” variety. As Patty Smith Hill stated,

There are two great divisions of teachers, you know: cookbook teachers and checkerboard teachers. A cookbook teacher sits down in the evening, measures out so much arithmetic, so much spelling, so much music, according to a pedagogical recipe and next day spoon feeds it into his pupils. He calls the process education. But suppose he were getting ready for a game of chess or checkers. Would it do any good to take the board the evening before and figure out the campaign—first this move, then that move?

When he sat down with his opponent he would find that the vital factor had been entirely omitted from his calculations: the reaction of the other mind. Of course, cookbook teaching is easier. But the other kind—

well, from the child's point of view the other kind offers possibilities of real adventure. (Amidon, 1927, as cited in Wolfe, 2002, p. 249)

Succinctly, educators should not base their “moves” in a preplanned fashion, but rather use their knowledge to anticipate and respond to the moves of the students sitting across from them. This is sound advice for the reader: go into the situation with an open mind, not an empty head (Dey, 1993).

While the content is logically organized and presented, some readers may want, or expect, a deeper dive into associated topics peppered throughout the text. For example, would the content apply to learning in non-academic settings? What about learners with cognitive disabilities; how is their learning similar or dissimilar from what is presented? Another topic may be developmental appropriateness. Examples presented throughout the text span birth on up, and the reader must determine how the presented material applies to the particular age group they work with. The text is not comprehensive, but Ruiz Martín does not claim it is. It appears to be his intent that the reader not just passively accept the material because it appears in writing, but to actively “sit with” the material, let it stew and percolate, and figure out how it can best be utilized.

A final beneficial feature of the text is that while there are clearly defined sections that focus on a particular topic of discussion (e.g., memory, motivation, meta-cognition, self-regulation), they are additionally interwoven throughout the text, enabling the reader to see and make connections with other associated areas. On the downside, though, is the absence of a subject index. One is left to hunt through the text to locate the various interwoven subjects. Maybe an updated version will consider this feature as it would provide a more user-friendly and time efficient way to locate content throughout the text.

Ruiz Martín's text provides a good overview of learning that will be equally of value to the learner and educator alike. It is not only a good introduction to the topics, but also a resource to revisit as challenges in practice arise. Effective teaching involves not only connecting with students but also enhancing their learning. As Ruiz Martín notes, “Teaching will never cease to be an art, but it can be an art that grounds much of its practice in scientific knowledge” (p. 20).

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### About the Reviewer



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