

outside copyright, referred to as paracopyright. Paracopyright includes efforts related to licensing and technological protection measures (chapter 6) undertaken by rights holders and vendors who fear that copyright law protections are insufficient. Such efforts have emerged in the vacuum created by the slow pace of legal revision, yet it is essential to learn and understand how to work with these measures and leverage them accordingly. By deepening this understanding, the reader can consider more clearly the ramifications of the borderless digital domain, technological neutrality, and harmonization of international copyright laws (chapter 7). Thus the reader is better positioned to contemplate the future and leverage him- or herself to contribute positively to the advancement of the scholarly record and the public good.

Academia and beyond are currently (and likely will be continuously) in a landscape of constant change driven by the ever accelerating pace of technology, the Internet, and digital communications. The explosion of digital content, combined with the growth in sophisticated content and learning management platforms, social media, and MOOCs have taken our online lives and experiences to a new level—and along with it underscored the challenge of operating under 20th-century laws in a rapid, agile 21st-century reality. The sheer speed of the digital 21st century can be daunting in its ability to catch us wrong-footed—more reactive, less proactive. This rapid and agile 21st-century reality is driven by creativity and creative expression. For librarians, this book is an essential tool to increase awareness, engagement, agility and proactive support of creativity and academic expression on campus and at large.

While researchers and teachers undertake the highest and most respected levels of creative expression for the purpose of scholarly discovery and the advancement of knowledge, it is important for all contributors to the 21st-century digital domain to understand the intellectual property landscape, including where they are positioned and how to navigate to better, and further, contribute. Given the growing student population across all teaching and learning modalities, the quality of their academic work, projects, and innovations that they want and should contribute to society's body of knowledge, it is critical for librarians to be informed participants. While it is hard to know when or where that question related to intellectual property will come, it will come. And there is a good chance that more of these questions will come from students who are not planning to pursue higher academic degrees to formally enter into the discourse. Students of today, from all educational levels, are engaged with contributing to scholarly and practice-based knowledge.

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**Peter C. Brown, Henry L. Roediger, and Mark A. McDaniel.** *Make It Stick: The Science of Successful Learning*. Cambridge, Mass.: The Belknap Press of Harvard University Press, 2014. 313 p. Hardback, \$27.95 (ISBN 978-0-674-72901-8) LC 2013038420.

This very informative handbook for the “science of successful learning” is the fruit of eleven cognitive scientists working in concert as part of an “Applying Cognitive Psychology to Enhance Education Practice” research grant, which studied the impact of the latest developments in the field of cognitive psychology as applied to education over a ten-year period. The authors of this work consist of two of the cognitive scien-

tists involved in the grant: Henry L. Roediger, the principal investigator and James S. McDonnell Distinguished Professor of Psychology at Washington University at St. Louis; and Mark A. McDaniel, Professor of Psychology and Director of the Center of Integrative Research on Cognition, Learning, and Education at Washington University at St. Louis. Peter C. Brown, a man described as a “storyteller” in the preface, is a professional writer based in St. Paul, Minnesota. This author combination has led to a work that brings the latest of academic research in the field of cognitive psychology into a highly readable work that is accessible to the layperson.

*Make It Stick* is a high-ranking best seller in the category of education on Amazon and should be of immediate interest to those in teaching careers. However, the book should not be mistakenly thought of as relevant only to those in the field of education, as it is highly applicable to all who incorporate training, coaching, or teaching in their careers in any capacity or to anyone who wants to improve his or her own learning skills as a lifelong learner. The authors back up their claims with data from studies that include examples from many different walks of life including education, medicine, sports, and military, making evident the applicability of their principles to all.

The book turns a lot of well-respected concepts about learning on their heads and can be very illuminating to the reader. The authors provide a fascinating and insightful look into how the brain works and provide tools and practices that can aid the reader in training oneself to be a better learner.

In chapter 1, “Learning Is Misunderstood,” the authors use data to disprove those learning skills traditionally viewed as effective, going on to discredit such practices as rereading text and “massed practice,” which is essentially cramming where a learner continually reviews the same material over a short period of time. The authors argue that much of what has been proven to work in terms of increasing learning may be counterintuitive to learners and that learners may need to teach themselves new skills to be successful. They make a case for some of these methods.

Chapter 2, “To Learn, Retrieve,” places emphasis on using a combination of reflection and retrieval for effective learning. It details how learning occurs when one reflects on past personal experience. It also indicates that retrieval techniques, such as flash cards, that actively and repetitively recall information from memory can counteract the daunting statistic that we forget 70 percent of what we learn.

Chapter 3, “Mix Up Your Practice,” indicates that, to be truly beneficial learning techniques, retrieval practices need to be spaced out over time, and one needs to “interleave” these practice sessions—by intermixing different subjects into studying rather than just focusing on one subject. The chapter indicates that improvement may not be visible in the short term when using these two practices, but it becomes apparent over the long term.

Chapter 4, “Embrace Difficulties,” argues that “desirable difficulties” can encourage learning, as these challenges facilitate processes that encourage learning. It warns that a fear of failure can be detrimental to learning, as one may avoid challenging situations that can facilitate learning. It does make a point of differentiating between desirable difficulties, which can be overcome, and “undesirable difficulties,” which cannot be and thus can impede learning.

Chapter 5, “Avoid Illusions of Knowing,” is more directly rooted in the field of psychology and delves into self-observation and the accuracy therein and awareness of one’s own analytic systems. The last section of this chapter has the heading “Tools and Habits for Calibrating Your Judgment,” which helps one effectively put the knowledge gained from the earlier part of the chapter to good use.

While chapter 6, “Get Beyond Learning Styles,” does not actually debunk the idea that individuals learn better through certain learning styles, it does reveal that there is

no evidence that supports any of the learning style theories, though there is indication that how a learner views his/her abilities is a factor. It then goes on to explore the idea of different intelligences and other learning concepts and how one might master them.

Chapter 7, "Increase Your Abilities," puts forth the idea that the brain is mutable, includes factors that can influence this mutability, and explores different ways one may change one's brain. There is a strong emphasis on mnemonic devices, and readers are introduced to a sampling of such devices. The authors' takeaway at the end of the chapter ends on the interesting note that "effortful learning changes the brain," which involves "self-discipline, grit and persistence."

Chapter 8, "Make it Stick," reviews the main principles of the book, breaking it down into different audiences—students, lifelong learners, teachers, and trainers. This chapter can prove useful if the reader wants to share an overview of the relevant principles to a specific audience who may not wish to read the entire book.

This book has proven to be a highly successful and popular addition to librarian-facilitated faculty book discussion groups, and many of the principles have been incorporated into college courses in a variety of disciplines. The book has significantly influenced this reviewer, as it brought to light many fallacies in her own approaches to both learning and teaching. She has successfully used several of the recommended learning techniques in her own life.—*Lisa Vassady, Radford University*