



From *Teach Students How to Learn: Strategies You Can Incorporate Into Any Course to Improve Student Metacognition, Study Skills, and Motivation*

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with Stephanie McGuire

The following is an excerpt from the unedited manuscript

INTRODUCTION

Comeback kids

Miriam, a freshman Calculus student at Louisiana State University, made 37.5% on her first exam but 83% and 93% on the next two exams. Robert, a first-year General Chemistry student at LSU made 42% on his first exam and followed that up with three 100%'s in a row. Matt, a first year General Chemistry student at the University of Utah, scored 65% and 55% on his first two exams and 95% on his third exam. And I could go on. I could tell you scores of stories like this from the last 15 years of my teaching career.

Something happened to all of these students between their last failing grade and their first good grade. They learned something new.

No miracles, just strategies

Recently I was talking to a colleague who had heard about these remarkable transformations. She exclaimed "You're a miracle worker! I want to be a miracle worker too!" I quickly told her that there really was nothing magical about the surges in students' test scores after I worked with

them; hundreds of faculty and learning center professionals are getting these same results on campuses around the country. But there are tens of thousands of faculty members, like my colleague, who don't know what we're telling students to make these seemingly miraculous results happen. **I wrote this book to let everyone in on one of the best kept secrets in education: If you teach students *how* to learn, and give them simple, straightforward strategies to use, they can significantly increase their learning and performance.** The good news is that you will not have to change your entire course, or devote an inordinate amount of time to teaching these strategies. Often, teaching students how to learn can be accomplished in one session, in as little as 50 minutes. In that amount of time we can provide students with information that will fundamentally change their view of what learning entails. They can be transformed, in one session, from memorizers and regurgitators to students who begin to think critically and take responsibility for their own learning. **The information is not rocket science; anyone can teach students these techniques. This book will show you how.**

Late to the party

It might surprise you to learn that I have only recently (within the last 15 years of my 45-year teaching career) begun to understand the power of the concepts and strategies in this book. For the first thirty years, I believed that it was not my responsibility to teach students what they should have already known when they got to college. I felt that I couldn't afford to take the time to teach this information.

Furthermore, when I first encountered some of these learning strategies, at LSU's Center for Academic Success, I was skeptical. The strategies seemed too straightforward and simple to make a difference, and I didn't think students would use them. But after I began to see

students who had been making Ds and Fs turn into straight-A students, I became convinced that these simple tools can work miracles.

Now that I know how little time it takes to deliver this information and the power it has to transform students, I know that I can't afford *not* to teach it.

Sharing the good news

For a decade now, I've been traveling the country talking about metacognition and learning with faculty who are frustrated that their students are not performing according to expectations. In my travels, whenever I share these tools and strategies in a presentation, faculty and administrators often ask me, "So, where's the book?" Well, here it is. Here are all the ideas that I've been developing, collecting, and sharing since I began this work. Recently, faculty around the country at other universities have begun using this approach and facilitating the same kind of dramatic successes with their students. **The verdict is in: It's not difficult to teach college students how to learn.**

Who should read this book?

Because much of the book is about presenting effective learning and study strategies, you may at times find yourself wondering if the book is written for faculty and TAs or for tutors and learning center professionals. The answer is that I've written this book for anyone who teaches. In order for faculty to teach students how to learn, they must know some of the same strategies that are used by learning support staff. The primary audience for this book is faculty – faculty who are concerned not just about presenting discipline specific content, but also about whether students are meaningfully learning concepts instead of rote memorizing content.

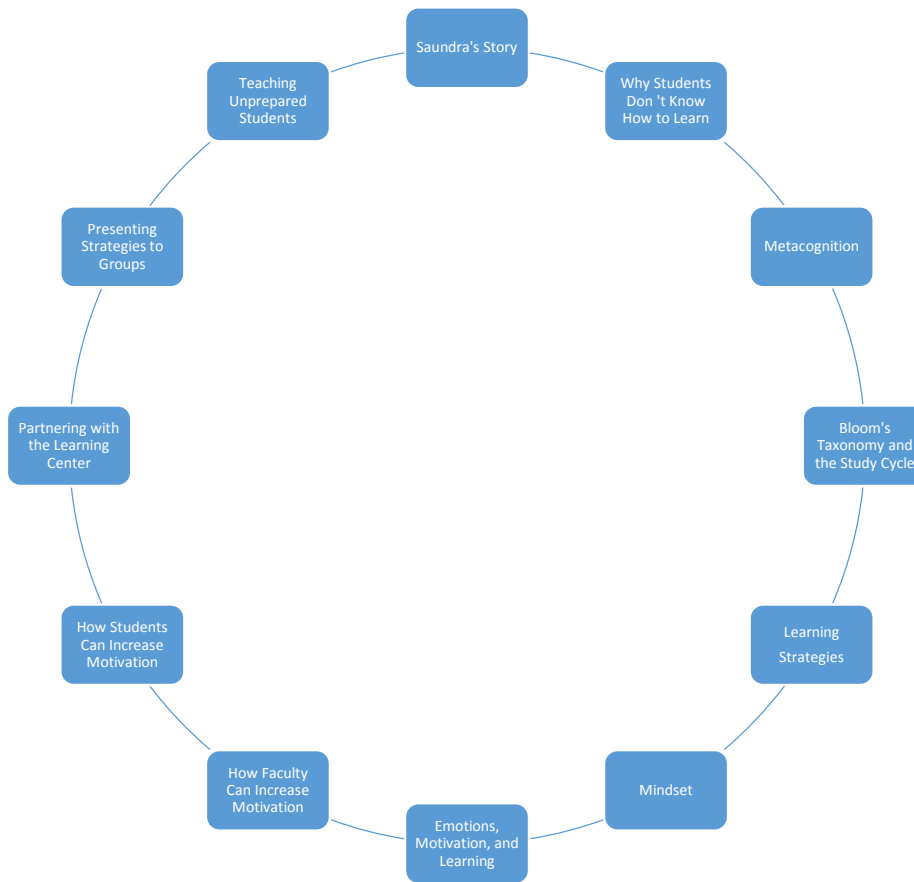
In an effort to make the material easily accessible to faculty with no background in education or cognitive psychology, I have taken care not to use jargon or introduce esoteric concepts that require a degree in these areas to understand.

Just for STEM educators? Not a chance.

Because I have spent my life teaching chemistry, most of the examples in this book come from the STEM disciplines. In fact, you may have noticed that all three comeback kids mentioned at the beginning of this introduction are math and science students. But rest assured that the strategies work just as well for students taking philosophy courses as they do for students taking engineering courses. I've heard tremendous feedback from science and humanities professors across the country (Appendix G) that these strategies work for all students stretched beyond their academic comfort zone, whether by Maxwell's equations or James Joyce's *Ulysses*.

What's in the book?

The figure below displays the content of each chapter, shown sequentially if you read it clockwise from 12:00.



The chapters are organized so as to take you along the path I took when I learned how to teach this information to students. I first had to understand why students didn't know how to learn when they entered college (chapter 2). Some of the reasons may surprise you as much as they surprised me! In chapter 3 we'll see that teaching students about metacognition and learning strategies provides a new lens through which they can view learning activities, and we'll see how teaching Bloom's Taxonomy in conjunction with a specific study system can immediately empower students to maximize their learning (chapter 4). After that we will take a closer look at the transformative power of ten specific metacognitive strategies, including four superstrategies for reading assignments and homework problems (chapter 5).

Over the years, I have been surprised to learn just how important it is for students to believe that they can improve their learning. All the learning strategies in the world cannot help

students who are convinced that their situation is hopeless. Chapters 6-9 address these issues of attitude and motivation. First, we learn about cognitive psychologist Carol Dweck's work on students' frame of mind, which she calls mindset (chapter 6). Dweck has demonstrated that students who believe they can get smarter are more likely to make efforts to improve compared to students who believe their intelligence is innate or fixed. In chapter 6, we take a look at four strategies to help students change their mindset. After I learned the importance of a student's mindset, I began to more fully appreciate the role of emotions and motivation in learning (chapter 7). Chapter 8 presents twenty-one strategies faculty can use to increase students' motivation, while chapter 9 delivers six strategies students can use to give a boost to their own motivation and learning.

In chapter 10 I discuss what faculty can do to partner with their campus learning center. Most institutions have a learning center with a cadre of professionals who work with students to teach not only learning strategies but also time management, test taking, stress management and other skills that improve learning. We will see how faculty can ensure that they and their students are taking advantage of all of the support offered on campus.

Chapter 11 should be one of the most practically useful chapters in the book. In it, I take you step by step through the process of delivering much of the information in the rest of the book to groups of students (e.g. your classes) in as little as 50 minutes. Supplements to chapter 11 include three online slide sets, a sample video lecture, and a handout summarizing the entire process (Appendix D).

Then we turn our attention toward students who arrive on campus particularly unprepared for what awaits them. Although the recommendations for unprepared students apply to all students, the six strategies presented in chapter 12 are especially helpful, and crucial, for this

population of students. Because recent SAT and ACT reports indicate that less than 50% of all students entering college are academically prepared for college level work, I trust you will find these strategies useful.

In the epilogue, I encourage you to joyfully and freely explore with your students what you've learned from the book. There is no right or wrong way to teach students how to learn, and I encourage you to pick and choose whichever strategies you feel most comfortable trying out. Even though there are about 35 suggestions in the book (Appendix C), if you only want to try a few of them, that's awesome! I just hope you have as much fun teaching your students how to learn as I have had teaching mine.

Begin at the end...if you must

I may be biased, but I believe that the very best way to encounter and digest the information in this book is to read it from beginning to end. However, if you are pressed for time, you can begin at the epilogue and use it as a departure point to explore the rest of the book. There is a suggested starter kit on p. 3 of the epilogue for anyone who might feel slightly overwhelmed after reading about all of the myriad things they can do to improve their students' learning. Alternatively, you can examine the chapter content in the above figure and choose where to begin.

My promise to you

By the time you finish this book you will:

- understand why many students do not know how to learn (chapter 2)
- understand how metacognition and motivation increase students' success (chapters 3, 6, 7)

- have concrete, effective learning strategies to share with your students (chapter 5)
- have slide sets, exercises, assessments, inventories, and study tools to share with your students (chapter 11, appendices)
- have strategies for changing students' mindset and motivation (chapters 6, 8, 9)
- know how to partner with your campus learning center (chapter 10)
- know how to work with unprepared students (chapter 12)
- know where to begin (epilogue)
- have everything you need to see positive changes in your students' performance!

Let's begin!

AUTHOR BIO

About Dr. Sandra Yancy McGuire

Dr. Sandra Yancy McGuire has been teaching and mentoring college students for over forty years. In 2007, she was recognized for excellence in mentoring with a Presidential Award presented in a White House Oval Office Ceremony. She is an elected fellow of the American Association for the Advancement of Science (AAAS), the American Chemical Society (ACS), and the Council of Learning Assistance and Developmental Education Associations. In 2013 she retired as assistant vice chancellor and professor of chemistry at Louisiana State University, and is now Director Emerita of the LSU Center for Academic Success, which was named the National College Learning Center Association outstanding learning center in 2004. Sandra has been teaching chemistry and working in the area of learning and teaching support for over 40 years, and she has presented her widely acclaimed faculty development workshops at over 150 institutions.

Sandra received her B.S. degree, *magna cum laude*, from Southern University in Baton Rouge, LA, her Master's degree from Cornell University, and her Ph.D. from the University of Tennessee at Knoxville, where she received the Chancellor's Citation for Exceptional Professional Promise.

She is married to Dr. Stephen C. McGuire, a professor of physics. They are the parents of Dr. Carla McGuire Davis and Dr. Stephanie McGuire, and the dotting grandparents of Joshua, Ruth, Daniel, and Joseph Davis.

AUTHOR BIO

About Dr. Stephanie McGuire

Stephanie McGuire holds a bachelor's degree in biology from MIT, master's and doctoral degrees in neuroscience from the University of Oxford, and a master's degree in opera performance from the Longy Conservatory. She attended Oxford on a Marshall scholarship and a graduate fellowship from the National Science Foundation. Her doctoral dissertation, "Some aspects of the auditory processing of sinusoidally rippled spectra in humans," explores how the human ear and brain process broadband, twenty-microsecond clicks. At the Longy Conservatory, Stephanie received the Victor Rosenbaum medal, given yearly to the most outstanding graduate of the conservatory.

Partly as a result of long and stimulating conversations with her mother about pedagogy and learning strategies, Stephanie has become a highly sought after private academic tutor in the New York City area. By co-authoring this book, she is delighted to contribute to Dr. Sandra McGuire's admirable and revolutionary mission to make all students expert learners.

Since graduating from conservatory, Stephanie has enjoyed forging a successful career as a classical mezzo-soprano. She has performed with New York City Opera at Lincoln Center, with the Boston POPS Orchestra in Symphony Hall, and several times at Carnegie Hall. To discover more and learn about Stephanie's upcoming performances, please visit www.mcguiremezzo.com.