TEST PREP

PLAN, PREPARE & PERFORM

ON THE ACT, SAT, GRE, GMAT & MANY OTHER STANDARDIZED TESTS

A STRATEGIC APPROACH TO TEST PREP FUELED BY EXPERT TUTOR INSIGHTS AND SCIENTIFIC RESEARCH ON HOW WE LEARN

USE THE POWER OF MINDSET, CUSTOMIZED STUDY PLANS, DELIBERATE PRACTICE, AND STRATEGIC TEST-TAKING TO IMPROVE PERFORMANCE ON ANY STANDARDIZED TEST.

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Founder, MyGuru

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Preface

If I've done my job, this book will help you become more confident, less stressed, more structured, and ultimately more successful in preparing for standardized tests used in high school, college, graduate, and professional program admissions or certification processes. The concepts and strategies presented in this book are relevant for most of these tests, including the usual suspects: the HSPT, SSAT, PSAT, SAT, ACT, GRE, GMAT, LSAT, ASVAB, and TOEFL. Even if you're preparing for a different test, such as the MCAT, NCLEX, CPA, CFA, or CFP, I'd argue that reading this book before you begin to prepare will still be immensely helpful.

The ideas in this book are relevant for both parents and students. Parents of students in middle school or high school, students who are in high school or college, and young professionals planning their paths towards a graduate degree will find that the strategies we discuss are powerful and effective.

Before we present those strategies, let me back up and provide some context and background about myself.

In 2010, while earning my MBA from Northwestern University's Kellogg School of Management and sitting in an "entrepreneurship in the education sector" class, I began reflecting on my experience as an economics tutor while I was an undergraduate at Indiana University. Recalling the process I had used to prepare for the ACT and the GMAT (tests on which I performed well, and for which I also prepared diligently), I sensed an opportunity to start a new type of tutoring company that would differentiate itself from other companies through 1) having the best, most experienced, and generally impressive tutors and 2) focusing on building skills and teaching students "how" to study, not just "what" to study, in a highly customized manner.

First, I recruited highly experienced tutors, with particular backgrounds teaching in a 1-1 setting. These tutors were graduates of extremely selective universities (i.e., Northwestern University) who had worked with multiple educational organizations and were academically and professionally successful, great communicators, and passionate about education.

Second, I made it clear to my team that to truly help students improve and excel in school and on tests, the focus shouldn't be on developing materials, systems, or approaches to apply to all students. Instead, each tutor should leverage his or her own extensive experience and personal background, assess the student's situation, and design a customized, multi-faceted study plan. Every student is different, and lasting, real improvement only occurs when they own the learning process and fully engage in it in their own way. Therefore, the focus must be on highly customized 1-1 instruction through which students are motivated and empowered to build their own academic skills, study habits, and organization skills. This guiding principle is the foundation of my company, MyGuru, which is now a boutique 1-1 tutoring and test prep business with significant operations in Boston, Chicago, Minneapolis, San Francisco, and New York.

Over the past five years, I spent hundreds of hours on the phone with parents, students, and expert tutors, diagnosing academic and standardized testing issues and designing study plans to boost performance. I became increasingly convinced that impressive academic performance is the result of studying smarter and harder, not the genes or "natural intelligence" of any given student. I began doing a good deal of secondary research on intelligence and academic performance to gather more evidence

beyond my experience from running MyGuru. I even completed, with distinction, a unique course offered by the University of California, San Diego: Learning How to Learn: Powerful mental tools to help you master tough subjects.

When I decided to write this book, I reached out to Mike Zilis, who holds a PhD from the University of Michigan and is one of MyGuru's most experienced ACT, SAT, and GRE tutors, and brought him on as a co-author. I also reached out to one of MyGuru's most trusted partners for supplemental test prep materials, Magoosh, to bring test prep expert and Bard College graduate Lucas Fink on board as the third co-author.

This book offers very little specific information or practice related to math, reading comprehension, vocabulary skills, or other common topics covered on standardized tests. Traditional test prep books—with their focus on the academic concepts, skills, and question types you'll see on any given exam—are critical to your success, and you'll need to build your study plan around them. But in this book, our aim is to convince you that a different mindset, combined with new approaches and rules for studying any given type of material, can result in dramatic performance improvement. This is a book about the "how" of test prep, not the "what."

In Part 1, we explore the true nature of standardized tests to understand how they're used, how important they really are, and what they are really testing. We show that these tests absolutely can and should be prepared for, and that they may not be quite as critically important as many people assume.

In Part 2, we lay the foundation for effective test prep by discussing the power of the growth mindset, which suggests that intelligence is much more like a muscle that develops through use and experience than a fixed trait inherited at birth. We then discuss how deliberate, highly focused practice is the key to building academic and many other types of skills.

In Part 3, we teach how to actually begin building a personalized study plan for your particular situation, and explores study habits that are scientifically proven to help you learn more information more quickly.

Finally, in Part 4, we cover tried and true test-taking strategies to use on the day of the exam. We also explore how to prime your body and calm your mind to achieve just the right level of healthy stress to be alert, calm, and ready to perform.

I view this book as the foundation upon which any study plan should rest. I'd recommend that, regardless of the standardized test you're about to take, you start by reading this book before moving on to a more traditional prep book that reviews specific facts and concepts and presents practice problems and practice tests. Reading this book first will help you reset your expectations, refine your approach to studying, and achieve a level of performance you did not think possible.

Plan, Prepare, Perform: Introducing the Major Ideas

> *"It turns out that even brilliant, highly accomplished people are pretty lousy when it comes to understanding why they succeed or fail. The intuitive answer—that you are born predisposed to certain talents and lacking in others—is really just one small piece of the puzzle. In fact, decades of research on achievement suggests that successful people reach their goals not simply because of who they are, but more often because of what they do."* ***-Heidi Grant Halvorson, PhD, is associate director of the Motivation Science Center at Columbia University's business school and author of* Nine Things Successful People Do Differently *and* Focus: Use Different Ways of Seeing the World for Success and Influence.**

Far too many of us think about academic performance in general, and performance on standardized tests in particular, as somewhat out of our control. We want to do well, and we may even be willing to work very hard to do well. However, we often have preconceived notions about our natural abilities that can be limiting and can cause us to prepare poorly and perform below our potential. As longtime college basketball coach Bobby Knight puts it, some of us don't have the "will to prepare," which in his view is much rarer than the "will to win."

This book was written to help you take control of your academic performance so you can succeed in the classroom and on standardized tests. It will help you find the will to prepare, and it will give you the tools to help you design a customized plan of attack to start preparing.

Let's start by noting that recent but well-established research suggests almost everyone thinks about excellent performance incorrectly, at least in part. When most of us think about top performers, whether in athletics, the arts, academics, or standardized test taking, we often say things like:

- He's always been so intelligent.
- She's so bright.
- He's such a natural leader.
- She's such a talented painter.
- He's such a gifted athlete.

In other words, most of us believe—in varying degrees, of course—that there is something called "natural talent" or "raw intelligence" that people either have or don't have at birth. In addition, many of us believe that this so-called "natural talent" is very important, even the deciding factor, in determining how a person will perform in school or on any given test.

However, recent research shows that excellent performance is the result of a specific type of preparation and practice that requires, but also goes far beyond, hard work.

The implications of this for the standardized test-taker are profound, especially if you are a self-diagnosed "bad test taker." By changing your mindset and practicing diligently in specific ways, you can perform better than you ever imagined on your next standardized test.

Now, having reviewed much relevant research, I do believe that some of us are, through random success in the genetic lottery, endowed with genes that enable us to perform a bit better on standardized tests than others. Holding preparation constant, something about a math problem might click a little faster for you than me, or you might naturally be able to read faster, or have a slightly better memory. Fine—that might be true on some level.

However, most of us put far too much weight on this point. It's much less important in reality than it is in most of our minds, and that's a big problem for many people. What actually matters is not how naturally intelligent you are, but how diligently you've been studying in school over the course of your life and how diligently you've prepared for the test at hand. In the majority of cases, long-term preparation is what typically explains the success of top performers in school and on standardized tests, because intelligence and academic skills are built slowly over time.

Scientists devote their lives to designing experiments meant to uncover the true nature of the world we live in. In neuroscience, psychology, and educational research on personality, ability, and learning, there is still debate about the relative importance of "nature vs. nurture." Some researchers believe more than others in the influence of genes on personality, performance, and intelligence. However, several recent studies show that general academic performance and even performance on IQ tests improves when students simply adopt a different mindset and commit themselves to preparation and practice.

As a result of those studies, it seems the scientific pendulum is swinging toward a belief that even true intellectual powerhouses owe more of their success to their passion, determination, curiosity, personal situation, focus, and practice than they do to their genes. In my view, the very notion of "intelligence" has so many dimensions and is so hard to define and measure that, upon serious reflection and review of the evidence, one is almost forced to concede that genes and natural inborn abilities play a much smaller role in performance than the average person might think.

So, let's consider a continuum of potential realities. On one end, there is a reality in which it doesn't even make sense to study for a standardized test, because your raw intelligence, or natural ability, will determine how you perform. This is how most people think IQ tests work. (However, as I've already alluded to, even this belief is not accurate.) On the other end of the continuum, there is a potential reality in which the only factor that determines your performance on a standardized test is the amount and quality of your study efforts. The harder (and more strategically) you study, the better you'll do.

One of the most important ideas of this book is that the reality that actually exists is that your performance on standardized tests depends on how well you study. This process often starts months or even years before you sit down to take the test, and both the quantity and quality of your studying are critically important.

What appears to be "superhuman natural ability" often starts out as ever-so-slightly above average ability that has been enhanced over time through many hours of intense, focused practice. Armed with the knowledge that most people have the potential to perform far better on their next exam than they

currently think is possible, I want to provide you with a foundation of specific test preparation strategies and tools so you can improve your test preparation process and far exceed your current expectations.

Let's quickly review the flow of the main ideas we'll explore, which hopefully will take you on a journey that will start by changing your mindset about and views on intelligence, talent, and potential for achieving high scores on standardized tests. At the end of the journey, you will have a clear roadmap for how to study for your next test. We reviewed the flow of the book in the preface, but we'll be a little more detailed here. It's important for the reader to understand the roadmap we're following with each chapter.

In Part 1 of this book, we'll explore the idea that the best preparation for a standardized test is taking difficult classes in a wide range of subjects, and trying your hardest in those classes. Why? Because most of the material on any standardized test is fundamentally the same as material you have learned or are expected to learn in school.

Then, we'll discuss how and why standardized tests are used in the first place, making two key points: First, standardized tests are not meant to measure some notion of pure intelligence or to identify "the smartest" applicants. Instead, they're simply used to identify applicants who are most likely to excel at a given academic institution. To do this, they measure how well you know specific math, reading, verbal, logic, and other reasoning concepts—concepts that are almost always learnable. Second, standardized test scores are in fact just one part of the overall application process. They aren't the whole picture. This fact alone should help you relax a little bit, and this increased level of relaxation can, by itself, help many people score better.

In Part 2, we'll show how a growth-oriented, feedback-focused mindset and an understanding of the true nature of intelligence (it's not a gift to be enjoyed or envied, but a muscle to be built) is critical for learning anything, including everything you need to learn to excel on tests. Carol S. Dweck, who has a PhD from Yale University and is a psychology professor at Stanford University, will show us how people tend to adopt one of two mindsets that cut across their entire lives, including their approach to academics, athletics, and personal relationships: fixed and growth.

The fixed mindset suggests that much of our potential for success in any given aspect of life is driven by factors such as our "talent," our "intelligence," and our "personality," all of which are "fixed." This mindset suggests that we can't improve our performance that much, because we are born with a certain personality and endowed with a given amount of talent and intelligence. A surprising number of people adopt the fixed mindset at their psychological core, even though this mindset implies that our careers, personal relationships, and general level of success are, to a large degree, pre-determined.

However, others adopt a "growth" mindset, which says we can continually learn and incorporate feedback to improve at almost everything we do, including taking standardized tests.

Next we'll directly address the myths of natural talent and great performance, essentially showing that those with the fixed mindset are wrong, and those with the growth mindset are right. I'll leverage a large number of research-led books that explore performance, all of which more or less attempt to dispel with the notion of "talent" and instead explain performance through a particular type of practice (as well as inspiration to put in the practice, and coaching to get the most out of the practice).

Recent, well-documented research suggests that a specific type of practice, often called deliberate practice, is what lies behind the ability of so-called "geniuses" or those with "special gifts." In short, this science shows how talent is ***built over time***. We'll tie this line of thinking to standardized tests in particular, and we'll explicitly apply the ideas to generate test prep study guidelines in a later chapter. The goal is to convince you that with the right type of preparation and practice, you can become incredibly good at almost anything.

In Part 3, once we've explained the factors that drive performance on standardized tests and the importance of adopting the right mindset and beliefs about intelligence, we'll launch a detailed exploration of specific standardized test preparation strategies and techniques that maximize learning.

A critical first step will be the development of a highly customized study plan that addresses your particular situation. This is a step that many students partially skip, instead opting to just "jump right in" to studying.

Of course, once you've developed a study plan, you need to work through it—you need to actually study in a manner that qualifies as "practicing deliberately." We'll learn that rote memorization and hard work aren't quite enough. You need to figure out exactly what is being tested (which skills, which concepts, etc.) and practice in a highly focused fashion, fully engaged in the material. You'll need to break down your learning into small chunks, set goals, push outside your comfort zone, summarize and explain, seek feedback, know when to get help, and more. We'll also show how incorporating test prep into your life more generally (outside of your study sessions) by methodically and strategically building mental math and reading comprehension skills over time can be a powerful preparation strategy.

The result of all the above is excellent performance. I'll present some examples of MyGuru students who have followed these principles and achieved test scores well above what they'd even hoped for.

In Part 4, we'll provide some approaches and tools you can actually use on test day to reduce stress, build confidence, and increase your odds of getting any given question right while ensuring that you stay focused and alert throughout a three- to five-hour exam.

Finally, since we reference many different books, ideas, websites, and authors, we'll use Part 5 to tell you where you can learn more about a variety of topics we've covered, and we'll summarize all the ideas we've discussed.

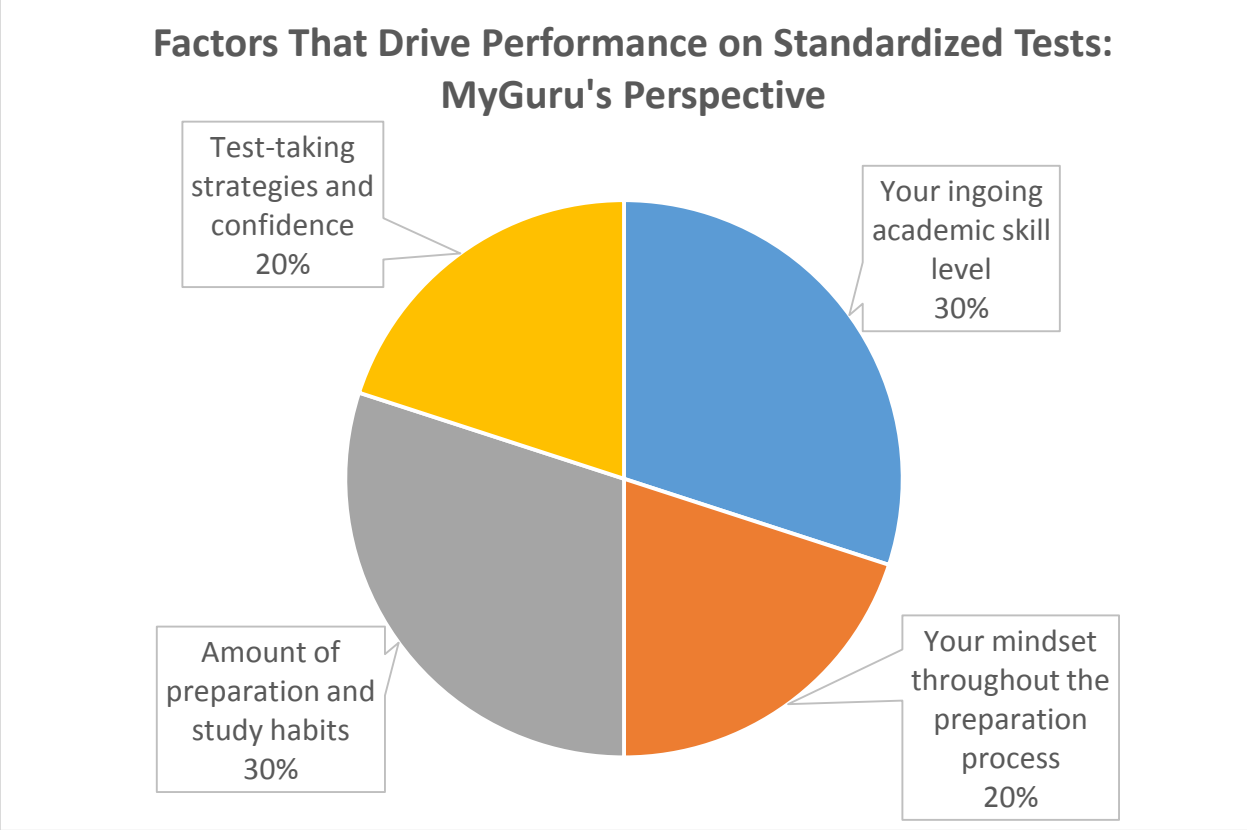
FINAL THOUGHTS BEFORE WE OFFICIALLY BEGIN OUR JOURNEY

It's often very difficult to diagnose what exactly causes one person to perform very well on a standardized exam, while another person struggles. Sometimes it's clear: Person A knew all the concepts, and Person B didn't understand many of the concepts. But, in other cases, it's much less clear. Person B might have a 4.0 GPA, but gets so stressed out that she freezes on the exam. Or, perhaps she has a 4.0 GPA, doesn't feel stressed, but still keeps scoring poorly on the ACT or SAT. What's going on?

If you are scoring below your target score, it's your job to step back and take control. Diagnose your situation and develop a plan of attack for improving. Books, websites, tutors, and teachers can help with this, but ultimately, it's your job. You're in control.

As we explore the factors that drive performance on standardized tests, let's put a stake in the ground about the importance of four broad factors that correspond to the first four parts of the book. The chart you'll find below is a starting point that helps provide a framework for anyone preparing for a standardized test. It can guide your study efforts and help explain where you should invest time and resources to improve.

Again, let me repeat: The below chart is just one way to talk about the factors that influence performance on standardized tests, and the relative weighting of the factors is what we at MyGuru believe to be the case based on our experience. It's not the result of a research study with statistically significant results**,** but I intuitively believe it's a fair representation of the factors that drive excellent performance on standardized tests.



Many different factors play a role in explaining why a person performs well or poorly on a given standardized test. The above chart can be used to both explain performance and diagnose at a very high level where to focus your study plan. For example, if you did well on a practice SAT without studying much, perhaps you've been taking advanced classes for years and have a strong set of baseline academic skills. For you, that base of knowledge gave you a strong foundation of skills, and perhaps the mindset and confidence you need on the day of the exam. Your study plan needs to continually focus on test-taking strategies and tips specific to the exam, while pushing you outside your comfort zone on the most difficult problems to ensure you improve beyond your current level.

However, let's say you're looking at the chart above and have never considered yourself a good student because you get average or below-average grades in basic classes. Trust me: With the right mindset and

preparation, you can begin to build the skills that are needed to perform well. With the right approach, your score can be boosted far more by your preparation and overcome your below-average baseline level of academic skills.

Each of the first four parts of this book corresponds to one of the factors in the above chart above. And at the end of each chapter, we offer key points to remember to help you improve your performance on standardized tests.

At a minimum, I hope this book inspires you to think differently about the concepts of “talent” and “intelligence” and the factors that drive excellent performance in the classroom and on standardized tests. I want to inspire you to believe that by studying “smarter,” you can get a score that is much higher than you currently think possible. Ideally, you’ll come away with specific ideas, approaches, and study strategies to use as you build a customized study plan that serves your specific needs.

Part 1: Understand the True Nature of Standardized Tests

"The best preparation for standardized tests is to take challenging, college preparatory courses in high school and study hard. That advice should be printed in 500-point type and underlined about 20 times."

- ***Jenny Oren Krugman, former Vice President, Southern Region, of the College Board, which administers the SAT test.***

In Part 1, we explore what standardized tests are trying to measure and the role they actually play in college, graduate, and professional school application processes. Our goal is to demonstrate that they are somewhat less important than you might realize, and that they aren't mysterious tests of natural intelligence. They measure specific skills you've learned in school, will need in the future, and can build through practice. This information may reduce your anxiety and stress level, quickly leading to better performance.

Chapter 1: How Academic Performance Explains Standardized Test Scores

In this chapter, we'll explore the simple but powerful idea that the best way to prepare for standardized tests is to study hard in a wide range of academic disciplines in high school and college, because a majority of the skills you'll need on most standardized exams are built as you work through your classes in school. In that sense, your general academic performance will, in many cases, predict your performance on standardized tests. Of course, if your general academic performance has been poor, you can "catch up" by studying hard for the test at hand, and that's great news.

WHAT DO STANDARDIZED TESTS MEASURE?

The answer is not "how smart you are."

To understand why, let's start with an exploration of what you'll find on a typical standardized exam.

Most standardized tests follow a similar pattern, with quantitative, verbal, and writing sections. However, the ACT, GMAT, MCAT, and LSAT all contain additional unique elements that don't fit neatly into one of these categories. The important point is that 80% or more of the content on any of these standardized tests is material you will have already learned in school. However, because the test's writers don't want to measure "memory" or give an advantage to students who were recently exposed to any given topic, they take relatively basic or foundational concepts and make you apply them in ways that can seem tricky.

Also, remember that the topics on these tests are almost always there because that particular topic, concept, or type of thinking will be required to do well in the school or program to which you are applying. These tests are used because they predict success, not because they explicitly measure your intelligence.

By following these links, you can view outlines of the material that is covered on nine common standardized tests: HSPT, ACT, SAT, GRE, GMAT, MCAT, LSAT, ASVAB, TOEFL.

In general, they test academic skills you should have already learned and skills you will need to succeed in college, graduate school, or professional school. Depending on the specific test, the skills that are measured typically include mathematics, reading comprehension, verbal reasoning, writing, and occasionally science—skills that specific classes and courses of study are built around in high school and college. Other skills tested on a typical standardized test, such as critical thinking ability and logic, are built more implicitly throughout your formal and informal education as you solve problems across and within academic disciplines in any given high school or college classroom. For example, when a standardized test makes you apply a core mathematics skill in a creative way through a strange problem, it's measuring your critical thinking and problem solving abilities in addition to a targeted math skill.

WHY ARE SOME STANDARDIZED TEST QUESTIONS SO MYSTERIOUS OR COMPLICATED? IF IT'S NOT AN IQ TEST TRYING TO MEASURE YOUR INTELLIGENCE, WHAT'S GOING ON HERE?

Let's analyze Jenny Oren Krugman's quote from the beginning of the chapter. Interestingly, she does not suggest that the best way to prepare for a standardized test is to spend 100 hours studying for that particular test, whether in a class, on your own, or with a tutor.

Studying explicitly for a standardized test is, in my opinion, the second-best way to prepare. Krugman articulates the best way: taking difficult classes and working hard in school over the long term.

Basically, Krugman is saying, "Don't worry about studying explicitly for the SAT. Just take difficult classes and study hard from first grade to 11th grade, and you'll excel on the SAT." This is powerful advice.

However, there are some unique aspects to standardized tests that make it necessary to spend a good amount of time studying explicitly for them. Those aspects include:

- Oddly worded questions intended to separate top performers from good performers.
- Advanced vocabulary words you don't often hear.
- Slightly different—but not necessarily more advanced—math topics than those you may have learned in school. (This is particularly true on the GMAT.)
- Multiple answer choices that all seem correct.
- Answer choices that would be correct if just one or two words in the question or passage were adjusted slightly.
- Lots of time pressure, requiring you to work quickly.
- And plenty more…

Why are tests constructed like this? We touched on this a bit earlier, but the answer is that the writers of standardized tests need to ensure that test results do two things: 1) Reflect whether a student can excel in college (or graduate school) and 2) Create some variation between students, so admissions committees can understand just how much better one applicant performed when compared with another.

To do this, the writer of a standardized test can't just go overboard with completely obscure vocabulary words or highly advanced math topics that most people have never been exposed to. This would create artificial variation in the results because the test wouldn't be measuring mathematics ability as much as determining who happened to take a particular math course. Plus, colleges want to understand how well students think critically and solve ambiguous problems, and simply knowing the formula for an advanced math problem doesn't necessarily accomplish that.

Therefore, difficult test questions need to be defined by how much creativity, critical thinking, and problem solving they ask of the test taker. This is why standardized tests often contain oddly-worded questions. Such problems frequently take a relatively basic (or perhaps intermediate) concept, such as factoring a quadratic equation, and ask the student to apply the concept after sifting through additional but unnecessary information and navigating multiple steps to get to the answer.

In other words, the question requires the student to apply a basic concept in a different context through critical thinking. These questions often seem mysterious or tricky, as if they belong on an IQ test. But when you break the question down, you will realize that the skills required to solve it can be practiced and learned, a process that will build your confidence and give you the ability to answer those difficult questions on test day.

Although it's obviously frustrating to take a test and struggle with a difficult problem, those problems are needed so concepts like "critical thinking" and "problem solving ability" can be tested. I think it's

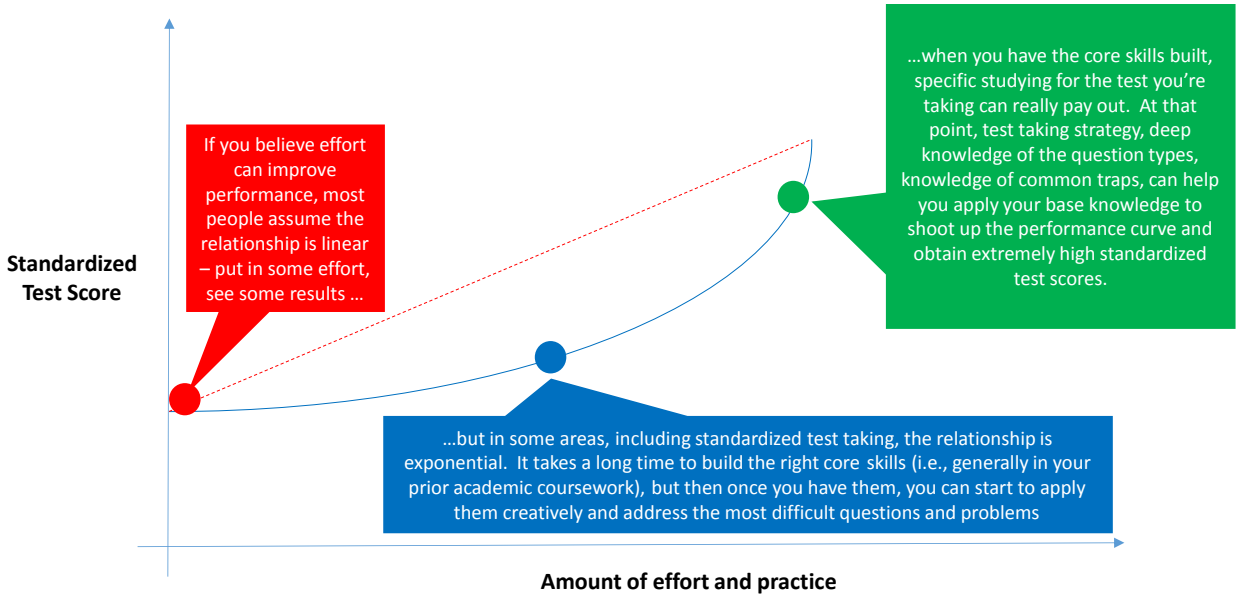
more than fair for colleges and graduate programs to want students with those skills and to test for them. Indeed, as you progress from high school to college to a professional life and potentially on to graduate school, the problems you confront become increasingly ambiguous. The exact nature of the problem, and thus the correct answer, are often unclear, particularly in business. "Dealing with ambiguity" is another valuable skill that must be developed, which is why difficult standardized test questions try to measure a student's ability to sift through confusing information.

So, in taking a standardized test, your task is to apply core skills creatively, with a healthy dose of critical thinking and problem solving along the way. Getting comfortable with question types, time pressure, and other details of the specific exam is very valuable. You might need to know algebra for the ACT and the SAT, although the specific level of algebra you need to know may be less advanced than in your algebra class. Again, the core concepts being tested are concepts we all learn (or should learn) in school. However, the test questions may be different than those you usually see in class, you'll be under intense time pressure, and you may feel the pressure to perform bearing down on you.

ACADEMIC SKILLS GROW EXPOPNENTIALLY, NOT LINEARLY

"In these activities, you have to work for weeks or even years at mastering the fundamentals, and you barely see any return. But then…suddenly you develop a natural ease and your progress multiplies quickly. Mastering an academic discipline is an exponential domain." ***-June 2014 article in*** **The New York Times** ***entitled "The Structures of Growth: Learning is No Easy Task," by David Brooks***

Almost by definition, standardized test-taking is an exponential domain. Let's review the chart below to explore the implications of this fact.



First, focusing on the red dot, many people have an initial expectation that improvement in their test-taking skills or test scores will be completely linear. When they put in a few weeks of effort and still

aren't improving that much, they get discouraged, and perhaps at this point start to think about standardized tests as IQ tests for which you can't fully prepare.

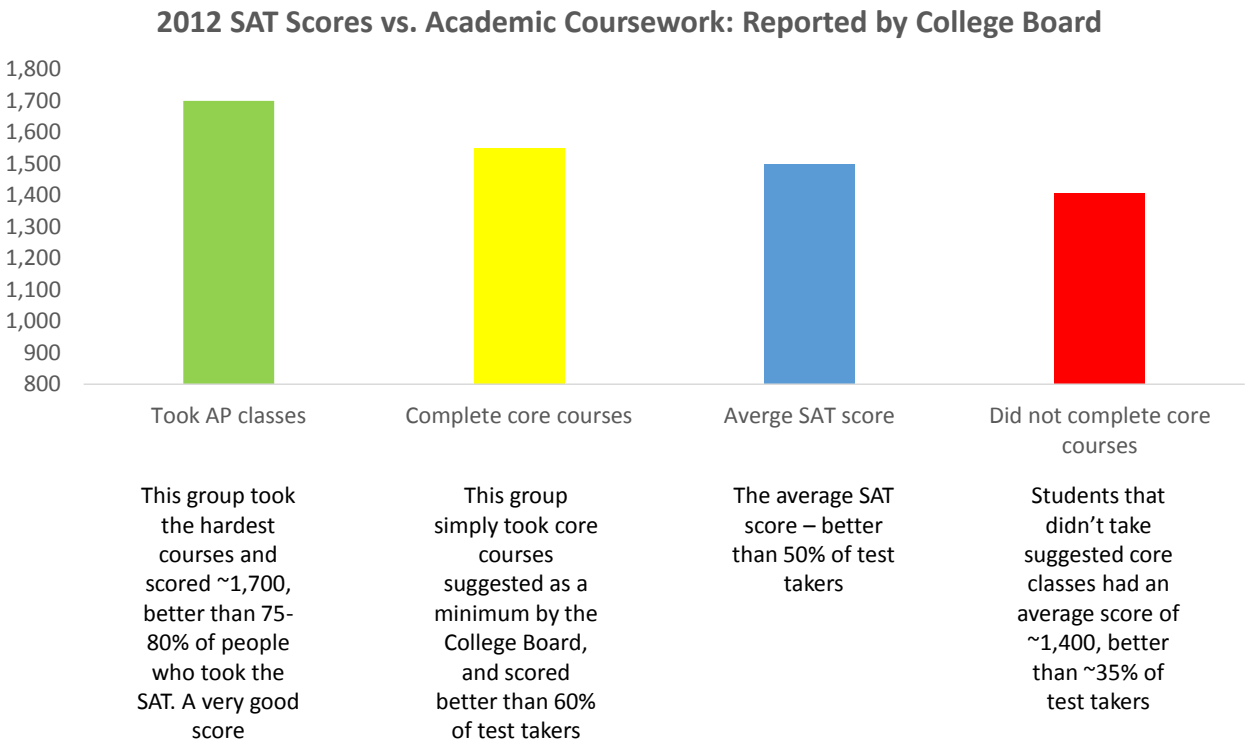
However, as Brooks writes about exponential domains, "You have to learn the basics over years … before you internalize the structure of the field and can begin to play creatively with the concepts." And later, he writes, "Many people quit exponential activities in the early phases. You've got to be bull-headed to work hard while getting no glory." So, depending on your overall level of academic performance to-date, you may begin your preparation pretty far down on the curve, with a need to build up some core knowledge before you really see skills develop and your score increase.

Now, I don't truly know how exponential test-taking really is. The curve might actually be somewhat flat for some standardized tests. But, moving to the blue dot, the point is that there are lots of core skills required for standardized tests that can best be thought of as the building blocks required to obtain a high test score. Within math, I'm talking about the basic rules of arithmetic, properties of triangles, how to factor, working with exponents, the quadratic equation, basic probability, etc. Outside of math, the building blocks are basic grammar rules, vocabulary skills, the ability to interpret what you read, writing skills, etc. These skills are best developed over the long term by taking difficult classes. For top students, by the time they take the ACT, SAT, GRE, or GMAT, they've already mastered most of them. But for other students, who haven't focused as much on or put the work into school, they have to build these skills first.

So, moving to the green dot, extremely high test scores are achieved by becoming adept at designing solutions to difficult questions by quickly working with all of the relatively basic building blocks. To do this effectively, you need to have a deep knowledge of the test: its question types, typical tricks used to throw you off, strategies to help you guess intelligently when you aren't completely sure of the answer, etc.

If you're studying for a standardized test, you must realize that, if you're still in the process of learning the core skills, it might take several months before you see the results you desire. However, once you have all the core building blocks down, don't be surprised to see your pace of improvement pick up as you become comfortable with more difficult questions and begin to apply core concepts creatively.

WANT A SOLID, ABOVE-AVERAGE TEST SCORE? DO YOUR BEST IN SCHOOL



The evidence presented in the above chart is striking. The average score of students who took AP classes is about 300 points better than the average score of students who didn't complete core courses—a substantial difference. Students who took AP classes performed better on the SAT than 75-80% of their peers, greatly improving their chances of getting into their top college choices.

Here are three implications of this chart:

1) The chart provides more evidence that the SAT isn't an IQ test. If it were, the classes a student takes in high school wouldn't greatly affect his or her score on the test.
2) Significant score improvements can be achieved simply by taking more difficult classes in school, let alone studying hard and performing well in those classes. Why? You're exposed to more of the concepts and ideas that are tested on the SAT (or ACT, GRE, GMAT, LSAT, MCAT, etc.).
3) If you do happen to fall into that "red" bar, and have taken classes that are less difficult and advanced than many of your peers, all is not lost. You simply need to study hard and explore some more advanced topics and skills in the weeks leading up to taking the test.

Still, many of us, whether we admit it or not, believe deep down that performance on standardized tests depends in large part on "how smart we are," which we also believe is largely out of our control. At the same time, most of us understand that the harder we work, the more we'll learn, and that to an extent, students can prepare for these tests. Therefore, most of us believe that some combination of intelligence, preparation and hard work, and luck coalesce to determine a student's performance on a standardized test.

Hopefully, some of the ideas I've presented so far have helped you realize that you have more control over your test score than you previously thought, and simply by studying hard in school, you're building

the exact skills needed to score well. In subsequent chapters, we'll explore how the right mindset, a customized, strategic study plan, and the right type of practice can converge to allow "bad test takers" to perform extremely well on standardized tests, even if they haven't been great students or haven't put in the consistent effort to excel in school for many years.

In the next chapter, however, we'll set the stage for this discussion by exploring just how important standardized tests really are. They may be less critical than you think. This means that you don't need to be so stressed out by them, which by itself can help boost your performance.

KEY POINTS TO REMEMBER FROM CHAPTER 1

1. Standardized tests are not IQ tests. Studying is key, because standardized tests measure learnable skills.
2. The best way to prepare for a standardized test is to take difficult academic classes and study hard throughout your time in school…
3. … but any given standardized test is likely to contain unique features, oddly-worded questions, confusing vocabulary, intense time pressure, and other factors that make studying for it very important.
4. Building the skills you'll need to excel on a standardized test is usually an "exponential" process, meaning that if you don't have some important foundational skills, it will take a good deal of hard work before you start to see improvement. But you will eventually see improvement, and when you do, it could happen quickly.

Brainfacts.org is a scientifically-backed web-site with great information about how practice changes the internal structure of the brain to help improve our performance in academic and other settings. Learning and the Brain offers similar information.

There are three popular books that do a nice job of explaining the approach and power of practicing deliberately.

- *Talent is Overrated: What Really Separates World-Class Performers from Everybody Else*, by Geoff Colvin
- *The Talent Code: Unlocking the Secret of Skill*, by Daniel Coyle
- *Practice Perfect: 42 Rules for Getting Better at Getting Better*, by Doug Lemov

Daniel Coyle's Talent Code blog is also a great source of practical information about deliberate practice.

STUDYING EFFECTIVELY

As we mentioned, much of the text in Chapter 6 drew from concepts and ideas found in two sources, both of which were developed by Barbara Oakley:

The Coursera Course – "Learning How to Learn: Powerful Mental Tools to Help You Master Tough Subjects"

The Book - *A Mind for Numbers: How to Excel at Math and Science (Even If You Flunked Algebra)*

We were also influenced by the book *Brain Rules (Updated and Expanded): 12 Principles for Surviving and Thriving at Work, Home, and School*

Finally, Cal Newport's Study Hacks blog has a wealth of practical advice about studying smarter to improve academic results.

Chapter 13: About the Authors

Lead Author: Mark Skoskiewicz - Founder, MyGuru

Mark graduated from Indiana University with a BS in finance and minors in philosophy and history. He was also an undergraduate assistant instructor with the economics department and a private economics, finance, and accounting tutor. After completing an 8+ year career in business strategy consulting, where he helped very large companies analyze, debate, and implement major strategic decisions, he attended Northwestern University's Kellogg School of Management. At Kellogg he studied marketing and entrepreneurship and took a class on education management. Based on his experiences preparing for the ACT and the GMAT and as a private economics tutor, he founded MyGuru, a boutique provider of highly customized tutoring and test prep for individuals and small groups.

As an "average" student in high school who experienced the benefits of setting goals, long-term planning, proper study habits, and effective time management in college and beyond, Mark is very interested in understanding why and how students succeed academically. He believes passionately in the power of adopting a growth mindset, displaying grit, practicing deliberately in a highly focused manner, and using specific strategies to build intelligence and accomplish academic and professional goals. In fact, he believes that many powerful strategic principles used by large companies to succeed in the marketplace—principles related to goal setting, analyzing facts, considering alternatives, and creating plans—can be used by students to improve their academic performance.

In addition to consistently reading, writing, and speaking with tutors and students about how to improve academic performance, he continues to more formally educate himself about how to help students learn and improve their performance. Mark has completed Mindset Work's professional development video series on the growth mindset and earned a verified certificate with distinction from the University of California, San Diego, for completing Learning How to Learn: Powerful Mental Tools to Help You Master Tough Subjects. He also recently completed a positive psychology course offered by the University of California Berkeley called The Science of Happiness.

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Mike holds a BS in political science, history, and mathematics from Miami University in Ohio, and a PhD in political science from the University of Michigan. He is currently an adjunct professor at DePaul University, but he maintains an active roster of private tutoring clients at a wide range of age and skill levels. He has a particular interest in understanding confidence issues and working with students to overcome them.

Co-author: Lucas Fink - SAT and TOEFL Test Prep Expert with Magoosh

Lucas holds a BA from Bard College. Standardized tests and English grammar are two of Lucas's favorite things, and he's been teaching both since 2008. Between his time at Bard College and his time spent teaching abroad, he's tried to learn a total of three other languages. He speaks none of them well.

Editor: Ryan Haggerty – Marketing and communications writer and former journalist

Ryan graduated from Northwestern University, where he majored in journalism and history. He worked as a newspaper and web reporter for seven years, mostly at the Milwaukee Journal Sentinel and the Chicago Tribune, and he now works as a senior development writer at Northwestern. He is also pursuing a master's degree in integrated marketing communications through Northwestern's Medill School of Journalism.