Teach Like A Champion 2.0 by Doug Lemov

Introduction

The Art of Teaching and Its Tools

Great teaching is an art. In the other arts—painting, sculpture, the writing of novels—great masters leverage a proficiency with basic tools to transform the rawest of materials (stone, paper, ink) into the most valued assets in society. This alchemy is all the more astounding because the tools often appear unremarkable to others. Who would look at a chisel, a mallet, and a file and imagine them producing Michelangelo's *David*?

Great art relies on the mastery and application of foundational skills, learned through diligent study—"craftsmanship," if you will. You learn to strike a chisel with a mallet and refine the skill with time, learning at what angle to strike the chisel and how tightly to hold it. Someday, perhaps years later, observers may assess the philosophy expressed by what you create, but far more important than any theory is your proficiency with the lowly chisel. True, not everyone who learns to drive a chisel will create a *David*, but neither can anyone who *fails* to master the tool do much more than make marks on rocks.

Every artist—teachers included—is an artisan whose task is to study a set of tools and unlock the secrets of their use. A chisel appears mundane, but the more you understand it, the more it guides you to see what is possible. Rounding a contour with unexpected smoothness, the chisel causes you to realize, suddenly, that you



could bring added subtlety to a facial expression, more tension to the muscles of the figure you are sculpting, and this changes your vision for it. Mastery of tools does not just *allow* creation; it *informs* it. The process is often far from glamorous; an artist's life is a tradesman's life, really, characterized by calluses and stone dust, requiring diligence and humility, but its rewards are immense. It is a worthy life's work.

Traveling abroad during my junior year in college, I saw Picasso's school notebooks on display at the Picasso Museum in Barcelona. What I remember best are the sketches filling the margins of his pages. These weren't sketchbooks, mind you. These were notebooks like those every student keeps of notes from lectures. The tiny sketches memorialized a teacher's face or Picasso's own hand grasping a pencil, with perfect perspective, line, and shading. I had always thought Picasso's work was about abstraction, about a way of thinking that rendered the ability to draw accurately and realistically irrelevant. His sketches told another story, bearing witness to his mastery of fundamentals and constant drive to refine his skills. Even in the stray moments of his schooling, he was honing the building blocks of his technique. He was an artisan first and then an artist, as the fact that he filled, by one count, 178 sketchbooks in his life further attests.

This book is about the tools of the teaching craft. More specifically, it's about the tools necessary for success in the most important part of the field: teaching in public schools, primarily those in the inner city, that serve students born to poverty and, too often, to a rapidly closing window of opportunity. The price of failure there is high and the challenges immense. Teachers there often work in a crucible where our society's failures are paramount and self-evident, and sometimes seem nearly overwhelming. Still, every day in every neighborhood on the near or the far



edge of hope, there are teachers who without much fanfare take the students who others say "can't"—can't read great literature, can't do algebra or calculus, can't and don't want to learn—and turn them into scholars who can. Impossibly, we often don't know who those teachers are, but they are everywhere—generally laboring unnoticed down the hall from one of the 50 percent of new hires in urban districts who leave teaching within their first three years. Think about that: It turns out that for those struggling new teachers, solutions to the challenges that will ultimately drive them out of the profession flourish just a few yards away. It turns out that for students, walking into the right classroom can pry the doors of opportunity back open. The problem is that we aren't serious enough about learning from the teachers who can provide these answers.

Consider Zenaida Tan, whom Jason Felch of the *Los Angeles Times* profiled in 2010 after data culled from the Los Angeles Unified School District revealed that over a seven-year period, Tan had been one of the top handful of teachers in the city, her students making dramatically larger gains than those of the average teacher year after year. "By the LAUSD's measure," Felch wrote, "Tan simply 'meets standard performance,' as virtually all district teachers do—evaluators' only other option is 'below standard performance.' On a recent evaluation, her principal . . . checked off all the appropriate boxes, Tan said—then noted that she had been late to pick up her students from recess three times. 'I threw it away because I got upset,' Tan said. 'Why don't you focus on my teaching?! Why don't you focus on where my students are?'" 1

My goal was to find as many such teachers as I could and honor them by focusing on, and studying, their teaching. To write this book, I spent a lot of time standing in the back of classrooms and watching videotape of great teachers in action. I used



Jim Collins's observation from *Built to Last* and *Good to Great* that what separates great from good matters more than what describes mere competence. I wanted to know not what made a teacher pretty good but what made her exceptional, able to beat the odds, what made certain teachers able to achieve what a thousand well-intentioned social programs could not. Were there consistent ideas that allowed them to more reliably transform lives? Were there words and actions the rest of us could copy and adapt? Were there general trends to provide a road map, principles behind the excellence? Or was their excellence idiosyncratic and unmappable?

What I found was that while each great teacher is unique, as a group their teaching held elements in common. I started to see both theme and variation, so I began to make a list of the things they did. I gave those actions names so I could remember them, and over time my list grew in both the number of topics and the level of specificity. Ideas coalesced into techniques. Not every teacher I observed used every technique I described. Like Felch, I found that great teachers came in every stripe and style: "They were quiet and animated, smiling and stern. Some stuck to the basics, while others veered far from the district's often-rigid curriculum." But in the aggregate, a story emerged. There is a tool box for closing achievement gaps, it turns out. The contents have been forged by ten thousand teachers working quietly and usually without recognition at the end of cracked-linoleum hallways. I am sure that some of my analysis of what they do is wrong. In fact, I have rewritten this book from the original to try to capture more of what they do with better accuracy. The pages that follow are my effort to describe and organize their tools and how they use them.

If you're a teacher near the beginning of your study of the craft of teaching, my aim is to help you become one of those teachers who, for a long and distinguished



career, unlocks the latent talent and skill waiting in students, no matter how many previous efforts have been unsuccessful. If you commit yourself and your talents to this work, you deserve to be successful and to change lives. If you are successful, you will most likely be happy in the work, and when you are happy, in turn, you will do better work.

If you are a master teacher already, I hope a discussion of tools and their applications, the framing of a vocabulary for talking about the critical and sometimes overlooked moments of your day, will inspire you not only to refine your craft but also to love doing so and to feel the pleasure of committing (or recommitting) to the deepest possible mastery of the complex and worthy endeavor that is your life's work. I assume that in many cases this book may describe things you already know and do. That's great by me, and in that case, my goal is to help you get a little better at them, perhaps seeing useful applications and variations you haven't considered. Either way, your growth is at least as important as that of a novice teacher. Teaching is the best and most important work in our society. Those who do it deserve to experience constant growth and learning. That, after all, is what we wish for our students.

If you lead a school, I hope this book will help you in helping teachers do this challenging work as successfully as possible. In our field, the first obligation of an organization is to help its people succeed. When teachers end the day with a sense of accomplishment, when they feel they are both successful and growing more so, they stay in our schools for a long time, do outstanding work, work joyfully, and inspire others, and thus pay the organization back in spades.

Let me say, though, with a humility that is reinforced every time I observe a champion teacher at work, that I am no master. Far from it. My work has not been



to invent the tools I describe here but to explain how others use them and what makes them effective. This has meant putting names on techniques in the interest of helping create a common vocabulary with which to analyze and discuss the classroom. The names may seem like a gimmick at first, but they are one of the most important parts. If there were no word *democracy*, it would be a thousand times harder to have and sustain a *thing* called "democracy." We would forever be bogged down in inefficiency—"You know that thing we talked about where everyone gets a say . . ."—at exactly the moment we needed to take action. Teachers and administrators must be able to talk quickly and efficiently with colleagues about a clearly defined and shared set of ideas in order to sustain their work. They need a shared vocabulary thorough enough to allow a comprehensive analysis of events that happen in a classroom. I believe that names matter and are worth using. Ideally, they will allow you to talk about your own teaching and that of your peers in efficient, specific language.

But I want to be clear. Despite the names, what appears here is neither mine, especially, nor a theory. It is a set of field notes from observations of the work of masters, some of whom you will meet in this book, and many others whom you will not, but whose diligence and skill informed and inspired this work.

What Is 2.0?

What, you might ask, does the 2.0 in the title of this book signify? If you've read the original *Teach Like a Champion*, you might ask, why not just update the original and keep the name the same? The addition of the phrase 2.0 acknowledges that the book is so full of new ideas, within a different structure, that it is hard for me to think of it as the same book. Over the past four years, I have learned as much from watching



great teachers in action as in the time it took me to write the original version of the book, if not more. In that time, I have been inspired by what talented and motivated teachers do with a useful idea when they find it.

True, they use it, of course, often to inspirational effect, but almost right away, great teachers start to adapt and adjust anything good; they make it fit their own unique style and approach, their setting and students. Most of all, it turns out, the best teachers find ways to take anything you give them and make it more rigorous. Almost as soon as I began to share the ideas I'd gleaned from teachers in the original version of this book, the guidance became obsolete. I began to see the ideas reflected back at me in the classrooms of teachers, but adapted, tweaked, and improved so that what I was seeing when teachers executed the techniques from the book was often better than what I described.

I came to call this process the Virtuous Cycle: give teachers a good thing, and they make it better, smarter, faster. They make you wonder how you didn't think of something so obviously good or nuanced the first time around. This to me is the most inspiring part of the profession, and why I am deeply optimistic about teaching. Nothing could make me happier than to be confronted by the obsolescence of the original ideas and to think about how soon this second version of the book will need further updating. For now, the new title reflects the depth of knowledge this cycle has generated.

As I will outline later, *Teach Like a Champion 2.0* also includes brand-new techniques. This is because great teachers are entrepreneurs, and teaching is full of what Deborah Ball, dean of the School of Education at the University of Michigan, calls "endemic problems." Endemic, in this case, is the opposite of "exotic"; it means problems that are entirely predictable—we know they're going to happen. Endemic



questions include those such as, What do you do when a student gives up and simply won't try? How do you know what the student who hides silently in the corner is learning? How can you maximize the amount of work students are doing? And what do you do when you ask a student to sit down, and he smirks and tells *you* to sit down? As these examples suggest, the predictability of endemic problems does not imply that they are simple to solve. And it shouldn't take a dozen years of brutal trial and error, suffering, and fatigue for a teacher to figure out these problems. Further observation has helped me to see the many endemic problems for which teachers have derived brilliant solutions. The degree of these additions, too, argued for a book that was 2.0—as much sequel as revision.

On Teachers and the Advice They Get

Teachers are drowning in advice. Most of the time, they are tasked with executing ideas and directives that come from elsewhere—from people who don't actually teach every day. Perhaps as a result, many of those ideas and directives are disconnected from the challenges that shape a teacher's daily work. They are often developed for purposes other than mastering the mundane (to some) endemic challenges of teaching, and this tends to exacerbate the wide range of guidance teachers receive. It's worth asking then what advice *should* look like. I think of guidance as coming in three varieties: ideology driven, research driven, and data driven.

Ideology-driven guidance represents the most common form of advice teachers receive. From time immemorial, people have thought of things that could or should happen in classrooms and proceeded to tell teachers to do them. This kind of guidance tends to say, "This is what a classroom should be like," which is



problematic even if you agree with the idea in question. A teacher might be told that a classroom should be democratic, for example, and perhaps given some parameters for what a democratized classroom should look like, but such a classroom is not assessed for whether student achievement rose but whether the teacher did what the democratizing guidance described. Assessment of the effectiveness of an ideology is usually self-reinforcing. Teachers in such cases are asked not to use and adapt ideas as they see fit to get to a few important outcomes-student achievement in a given subject, say—but rather to assess results by checking off a growing list of "musts": teachers must teach English, math, science, history, the arts, banking and financial literacy, environmental stewardship, entrepreneurship, and personal hygiene, in a technology-rich environment that builds self-esteem, seats students in pods, provides multiple solutions to every problem, avoids "teacher talk," and never exposes a student to a page of text that has more than five vocabulary words he or she doesn't know. Please don't forget the anti-drug unit. In other words, ideology-based guidance contributes to the development of schools where teachers are always trying to do lots of things that people are telling them to do, instead of using their insight, problem-solving abilities, and a wide array of tools to achieve specific goals. The result, often, is an administrator with a checklist.

Gradually, the guidance that teachers receive has begun to be more research driven. Research matters, so that's a step in the right direction, but there are still problems. Research needs to be distilled and digested for application. If research supports a particular action, does that mean you should always perform that action, to the exclusion of everything else, or should you combine it with other things? How often, in what settings, and with what other actions? And how do you meld them? Even if you nailed all those questions, the research might not prove effective until you'd figured out the details of implementing it in, say, forty-six minutes on



Tuesday morning with thirty-one fourth graders of widely varying skill levels. Or it might not be of any value at all; there's a lot of research out there of varying quality, and even the useful parts are interpreted with a mix of good sense, cautious fidelity, outright distortion, and blind orthodoxy. This can result in "research" justifying poor teaching as easily as good. Research, in other words, works best when it is a tool, not a mandate—adapted and applied by professionals to achieve a specific goal and then assessed to determine whether and how it helps them meet that goal.

This brings up the third type of advice for teachers: data-driven guidance. Data-driven guidance is based not on what should happen but on what did happen when success was achieved. *How* were all the ideas and research knitted together and executed so as to survive their encounter with twenty-eight moderately skeptical seventh graders? *What else* had to happen to achieve that singular triumph? What were the themes and variations teachers employed across multiple successful lessons, considering their own personality, setting, and context? It's not simple, this data-driven guidance, and it has pitfalls of its own, but as you have probably guessed, this book is an effort to bring that kind of guidance to teachers, based on the work of those peers who successfully solve endemic problems.

To paraphrase a wise colleague, the only thing I know for sure about my effort at offering data-driven guidance is that I got some of it wrong. Surely, when one of the teachers I was watching did the thing that drove her results, I was looking in the other direction, misunderstanding what she'd done, confusing cause for effect, or seeing what I wanted to see at least some of the time. But one of the great things about data-driven guidance is that anyone can seek it out. Even if you disagree with my conclusions, whether you are a teacher or a leader in charge of a school, a school district, a state, or a nation, you can use a data-driven approach to take your best



shot at measuring the outcome you think most valuable, finding its best practitioners, and inferring guidance from their work.

One major benefit of a data-driven approach is that it generates its knowledge from teachers: it's the process of showing teachers a picture of themselves at their very best. As a result, it considers teachers not just as recipients and implementers of the field's knowledge but as creators of it—problem solvers, entrepreneurs, generators of the professional insight. It makes teachers intellectuals. That, I think, really matters. It not only honors teachers and teaching but ideally also changes the perception of the field and the stature of the work.

We often talk about "the" achievement gap, but really there are many: the gap between rich and poor, true, but also the gap between what students think and what they can write; the gap between schools in our nation and the best school systems in the world; and the gap between what our schools offer and what they could be. One of the key messages of this book is that solutions to teaching's achievement gaps exist. There is no gap that has not been closed already by some teacher somewhere. We are not suffering from a lack of solutions so much as our failure to learn from teachers who have generated insight and put their ideas to work.

Specific, Concrete, Actionable Techniques

When I was a young teacher, I'd go to trainings and leave with lofty words ringing in my ears. They touched on everything that had made me want to teach. "Have high expectations for your students." "Expect the most from students every day." "Teach kids, not content." I'd be inspired, ready to improve—until I got to school the





next day. I'd find myself asking, "Well, how do I do that? What's the action I should take at 8:25 a.m. to demonstrate those raised expectations?"

What ultimately helped me improve my teaching was when a peer told me something very concrete like, "When you want them to follow your directions, stand still. If you're walking around passing out papers, it looks like the directions are no more important than all of the other things you're doing. Show that your directions matter. Stand still." Over time, it was this sort of concrete, specific, actionable advice, far more than reminders that I must have high expectations that allowed me to raise expectations in my classroom.

My approach in this book reflects that experience. I have tried to describe the techniques of champion teachers in a concrete, specific, and actionable way that allows you to start using them tomorrow. I chose to call these tools "techniques" and not "strategies"—even though the teaching profession tends to use the latter term—because to me, a strategy is a generalized approach that informs decisions, whereas a technique is a thing you say or do in a particular way. If you are a sprinter, your strategy might be to get out of the blocks fast and run from the front; your technique would be to incline your body forward at about five degrees as you drive your legs up and out ahead of you. If you wanted to be a great sprinter, practicing and refining that technique would help you achieve more than refining your strategy. And because a technique is an action, the more you practiced it, the better you'd get. Mulling over your decision to run from the front a hundred times doesn't make you any better; practicing a hundred sprints with just the right body position does. This is why, I think, focusing on honing and improving specific techniques is the fastest route to success. My hope is that, with practice, you'll be able to walk to the front of any classroom and use Cold Call (technique 33 in



Chapter Seven) and *No Opt Out* (technique 11 in Chapter Three) to hold your students accountable in a lesson with *Positive Framing* (technique 58 in Chapter Twelve) and a high ratio (Chapters Seven, Eight, and Nine). Mastering those techniques will be far more productive than being firm of convictions, committed to a strategy, and, in the end, beaten by the reality of what lies inside the classroom door in the toughest neighborhoods of our cities and towns.

It's also worth noting that this set of techniques is not a "system." For me, the benefit of considering individual techniques is that they are small, discrete units of inquiry. You can choose something that interests you and study it, improving quickly and seeing the results. And you can incorporate a new technique into what you already do without having to redesign your entire approach or buying in to everything in the book. As Chip and Dan Heath point out in their book Switch, how people encounter useful information has a lot to do with whether they are successful in using it to change and improve their lives. Oftentimes what we conclude is resistance to change—by teachers, say—is in fact lack of clarity about what concrete thing to do next to begin the change: "OK, I get that I should be more rigorous, but how do I do that, or start to do that in a concrete, manageable way?" Giving people very small ideas to try might seem less efficient than giving them an overarching system that encompasses everything they do, but trying to do everything at once is a recipe for lack of action. Having a manageable focused idea to work on can help make change and improvement safe and easy to pursue, with the result that the technique becomes part of your life. We often achieve more change over the long run via small changes in the short run.

Another key observation from Switch is that we tend to assume that the size of a solution must match the size of the problem. You were observed; there were



criticisms; it seems you have to make wholesale changes to everything you do. Or do you? Often, very small changes can have large and profound effects on big problems. I have a friend who struggled for years with his weight, wrestling to make huge changes in his lifestyle, with immense effort that drew his focus away from work and family. One day, he realized that an aching tooth had been keeping him from chewing food on one side of his mouth. He would push the food to the other side and gulp it down half chewed. He realized that this might be causing him to overeat. He had the tooth pulled and lost ten pounds in a few weeks. Teaching can be similar. Our mascot on the Uncommon Schools Teach Like a Champion team is Mighty Mouse. Little things, we like to remind ourselves, can have big muscles.

The Irony of What Works

Many of the techniques you will read about in this book may at first seem mundane, unremarkable, even disappointing. They are not always especially innovative. They are not always intellectually startling. They sometimes fail to march in step with educational theory. But they work. As a result, they yield an outcome that more than compensates for their occasionally humble appearance.

There's evidence of the effectiveness of these tools in the overwhelming success not only of the classrooms of the teachers from whom I learned them but in almost every urban school. In those schools, there are usually a few classrooms where the same students who moments before were unruly and surly suddenly take their seats, pull out their notebooks, and, as if by magic, think and work like scholars. In each of those classrooms stands one teacher—an artisan whose attention to technique and execution differentiates her from most of her peers.



One of the biggest ironies I hope you will take away from reading this book is that many of the tools likely to yield the strongest classroom results remain essentially beneath the notice of our theories and theorists of education. Consider one unmistakable driver of student achievement: carefully built and practiced routines for the distribution and collection of classroom materials. I often begin teacher trainings by showing a video clip of my colleague Doug McCurry, the founder of Amistad Academy in New Haven, Connecticut, and the Achievement First network of schools, both of which have a national reputation for excellence. In the clip, Doug teaches his students how to pass out papers on the first day or two of school. He takes a minute or so to explain the right way to do it (pass across rows, start on his command, only the person passing gets out of his or her seat if required, and so on). Then his students start to practice. Doug times them with a stopwatch: "Ten seconds. Pretty good. Let's see if we can get them back out in eight." The students, by the way, are happy as can be. They love to be challenged and love to see themselves improving. They are smiling.



See It in Action: Clip 48

Watch Doug McCurry encourage his students to pass in their papers faster and faster.

Inevitably there are skeptics when I show this clip. Some argue this isn't what teachers are supposed to be doing during classroom time. They think it's demeaning to ask students to practice banal tasks. The activity treats students like robots, they charge. It brainwashes them when it should be setting their minds free. Now,



consider those objections in light of the following numbers. Assume that the average class of students passes papers and materials twenty times a day, and that it takes a typical class a minute and twenty seconds to do this. If Doug's students can accomplish this task in just twenty seconds, they will save twenty minutes a day (one minute each time). They can then allocate this time to studying the causes of the Civil War or how to add fractions with unlike denominators. Now, multiply that twenty minutes per day by 190 school days, and you find that Doug has just taught his students a routine that will net him thirty-eight hundred minutes of additional instruction over the course of a school year. That's more than sixty-three hours or almost eight additional days of instruction—time for whole units on Reconstruction or coordinate geometry! Assuming that Doug spends a total of an hour teaching and practicing this routine, his small investment will yield a return in learning time of roughly 6,000 percent, setting his students free to engage their minds several thousand times over.

Given that time is a school's most precious asset, you could put it another way: Doug has just increased his school's scarcest resource—the time it has already bought in the form of teacher salaries—by about 4 percent. He has performed a minor miracle. Then combine this manufacture of resources with the ancillary effects of having strong habits and routines: the self-fulfilling perception of orderliness it gives to the classroom; the routine's capacity to remind students over and over that in this classroom, it is always about doing things, even little things, right and then better. Now you have a potent technique, one that is common across almost every one of the highest-performing classrooms and schools I have seen. Unfortunately, this dizzyingly efficient technique—so efficient it is all but a moral imperative for teachers to use it—often remains beneath the notice of the avatars of educational theory. Few schools of education stoop to teach aspiring teachers how to train their



students to pass out papers, even though it is one of the most valuable things they could possibly do.

To be fair to the teachers I've studied, not all, not even *most* of the techniques are so brass-tacks oriented. Many are about issues more common to discourse—boosting the amount of cognitive work students do, for example. But even then, what separates the champions are actions that are granular, specific, far beneath the level of philosophy, and knee-deep in the weeds. *Turn and Talk* is a great example. Done well, this technique is a powerful contributor to a rigorous classroom; done poorly, it is a boondoggle of wasted time and faux autonomy. The difference again lies in the mundane details of a design that builds on routines much like Doug McCurry's to ensure accountability alongside autonomy.

The Art of Using the Techniques

In writing this book, I want to emphasize that the art is in the discretionary application of the techniques. I've tried to help artisans be artists, not because I think the work of teaching can be mechanized or made formulaic. There is a right and wrong time and place for all of the tools, and their effective application will always fall to the unique style and vision of great teachers. That, in a word, is artistry. Great teaching is no less great because the teacher systematically mastered specific skills than is *David* a lesser reflection of Michelangelo's genius because Michelangelo mastered the grammar of the chisel before he created the statue. I believe that given the tools here, teachers will make insightful, independent decisions about how and when to use the techniques of the craft as they go about becoming masters of the art of teaching.



You'll find that many of the descriptions of these techniques include "See It in Action" boxes. You can see the various techniques by viewing the video clips. These clips have the potential to help you drive practical and effective classroom results. I chose these for the book because they show great teachers using specific teaching techniques that differentiate the great from the merely good. To maximize the effectiveness of these clips, I suggest that you read the description of the technique, watch the video, and then reflect on your own practice and how you might use the technique.

Who Are the Champions?

The organization I work for, Uncommon Schools, is a nonprofit that runs charter schools—good ones, I am proud to say—and I observe that they are good for the reason most good schools are good: because they take teachers and teaching seriously and strive to focus every decision on serving teachers and increasing student achievement, two goals that are, if not synonymous, then at least deeply synergistic. But this is not a charter school book. This is a teaching book, a book about the actions inside the classroom rather than the policy decisions outside it. It is important to point out that the teachers from whom I learned the things I have written about here ply their trade in both charter and district schools. It would dishonor those teachers not to emphasize this point. As I sit at my desk, I can recall scrambling to write down the insights I learned in classrooms, district and charter, from New York to Nashville—not to mention Boston, Houston, and Oakland.

As you watch the videos, I hope you will be inspired by the teaching, but you may not always see the diversity of settings in which I learned the techniques those videos demonstrate. One reason for this is eminently practical. Observation is



relatively easy. Walking into a classroom with a video camera and asking for the right to use the resulting video no matter what happens is another, and far easier to accomplish in some places than others. Further, video is an incredibly unforgiving medium. Buried in the recesses of our video archives are a thousand brilliant moments of teaching made unusable as teaching aids by a thunderous sneeze, the stumbling mispronunciation of a key term, or the ringing of the dismissal bell at exactly the wrong moment. The classrooms you see in this book offered the highest-quality demonstration of a technique I could find in a classroom with excellent results. In most cases, the amount we learned from the teachers was prodigious, but these classrooms may not be the only or the first ones where my team and I learned about the techniques.

The second reason may be more important. Many of the places I have shot most frequently are hubs of the Virtuous Cycle—places where teachers were deeply intentional about applying, adapting, and improving the techniques and willing to invest time in reflecting on that process. They are often places where, more than just having these conversations with me and my team, teachers engaged in conversations with each other, endeavoring to learn, via sustained conversation and dialogue, how to use and adapt the ideas. They tape themselves and each other constantly for inquiry and reflection, so it was easy to share. This often resulted not only in great 2.0 learning but in great video. Teaching, it turns out, is a team sport, where teachers make each other better fastest by building robust cultures where they study and share insights about their work. Our cameras practically exploded with amazing footage when we taped in such places. Many of them were the schools I am closest to personally, but they are by no means the only places where the techniques flourish, nor are they necessarily the places where they were first developed.



Defining What Works

So how did I identify the teachers I studied and the schools I frequented? And what does it mean to say that they were successful in closing the achievement gap? My primary tool was a basic analysis of state test scores that controlled for poverty. I used this approach to look for "positive outliers," teachers whose students came from poverty and who dealt with the associated challenges such a demographic implied, yet still achieved results comparable to what was achieved by students of privilege. Consider Figure I.1.

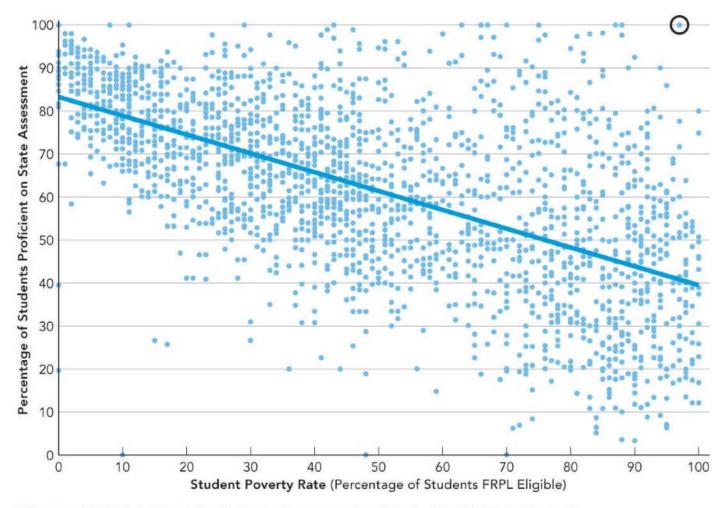


Figure I.1 2011 New York State Assessment Sixth-Grade Math Results

The graph in the figure is of data showing performance on the 2011 sixth-grade math test in New York State. At the circled school, about 96 percent of its students are eligible for free and reduced-price lunch, the standard measure of poverty in the





education sector. According to the data, schools with similar populations typically saw about 40 percent of their students pass the state test in 2011. The correlation between poverty and lower achievement is strong in the data, and also shows up in the results of schools without any students at all eligible for free meals: about 83 percent of their students passed the test. But at the circled school, even more passed the test. *Every* student passed the test. In fact, although it's not evident from this figure, 60 percent of students in the school scored advanced, an outcome that placed it in the top 5 percent of schools in the state, regardless of population.

Even more important, the trend continued over time. Sixth graders in the school in 2013 passed the sixth-grade test at a rate more than 130 percent of the statewide average, again despite dramatically higher poverty. And the initially strong results posted by sixth graders in 2011 were sustained. By 2013, this cohort of students passed the eighth-grade New York State math assessment at a rate of 74 percent. This sounds like a significant drop-off, but in fact the opposite is true. The 2013 scores were "post Common Core," coming after New York redesigned its exams to make them significantly more demanding. Overall, just 28 percent of students in New York State passed the math test that year. Students at our outlier school passed at a rate more than two-and-a-half times that of students statewide, despite a poverty rate more than double that of the state average. In short, the school, Troy Preparatory Charter School in Troy, New York (part of the Uncommon Schools network), and its math teachers, Bryan Belanger, Katie Bellucci, Bridget McElduff, and Ana O'Neil (all of whom you can see in action in this book), deserve study and attention. How do they approach teaching, relationships, lesson planning, and the like? Surely there must be things each of us can take from their classrooms.

My goal was to turn up as many outliers like this as possible. Sometimes it was a



single classroom—just the sixth grade, say—and sometimes it was an entire school. Whenever possible, I tried to use as much additional data as I could get and tried to look for signals that were durable over time—sustained results as opposed to one-time blips more likely to be the result of causes other than great teaching. When a school was successful for a long time, I also considered the principal's guidance and input in sourcing teachers. This sounds subjective, I suppose, but it's still useful. Although there are data to suggest that the average principal is only so-so at identifying the best teachers, very good principals are, of course, different from the average. One could argue that the reason they are successful is their ability to understand whose teaching is especially effective. And there are also data to support the idea that although it's hard to differentiate teachers around the middle of the performance curve by watching, the great ones are pretty reliably identifiable by effective administrators.

I used administrator input for several reasons. One, data are incredibly important, but they're not always simple to use. Consider the challenge of English language arts (ELA) results, which generally speaking take several years to show up. Is it plausible that somewhere an English teacher's breathtaking results were in fact caused by the work of the teacher (or teachers) who came before her, rather than the six months she spent with students in that year? Asking for a principal's input and securing other data were ways to ensure that decisions were more accurate—testing by confirming data points. Further, in many cases there are very few data about science, social studies, and the arts, so I observed teachers in those areas who were identified by school leaders whose track record of success in ELA and math was also outstanding. A bit of an extrapolation for sure, but better in the end than ignoring those fields entirely.



Because my primary measure was state test scores, it's worth addressing some misconceptions about their use, if only to underscore the exemplary quality of the work of the teachers who informed this book. State test results are necessary but not sufficient. Without doubt there are myriad skills and a broad knowledge base that students need to master to succeed in college, and many of these things are not measured on state assessments. But also, without doubt, there is a set of core skills that is also necessary and that many, even most, students not born to privilege have not mastered. They need to be able to read and discuss Shakespeare, but they also need to be able to read a passage they've never seen before and effectively make sense of its meaning, structure, and craft. They need to be able to write a short paragraph giving evidence to support a conclusion. They need to be able to solve for x. Most state tests do an effective job of measuring these skills, and although students who can demonstrate them are not yet fully prepared for college, there are no students who are prepared for college who cannot demonstrate them.

It's also worth noting that the teachers who are better at teaching the skills measured on state tests are most often also the teachers who are effective at teaching broader, higher-level skills. Within Uncommon Schools, when we study the success of our students on tougher internal assessments (essay writing assessments that are far more demanding than state tests, for example), there is a strong correlation between both the teachers and students whose results show the most growth and achievement on the two types. Furthermore, our teachers who achieve the strongest results from state assessments also have the strongest results in ensuring our students' entry into and success in college. In short, student success as measured by state assessments is predictive not just of their success in getting into college but of their succeeding there.



Finally, the correlation between success on even more straightforward assessments (nationally normed test scores) and ultimate academic success should be instructive to us. I often meet educators who take it as an article of faith that work on basic skills is in tension with higher-order thinking. That is, when you teach students to, say, memorize their multiplication tables, you are not only failing to foster more abstract and deeper knowledge but are actually interfering with it. This is illogical, and is one of the tenets of American education not shared by most of the educational systems of Asia, especially those that are the highest-performing public school systems in the world. Those nations are more likely to see that foundational skills like memorizing multiplication tables enable higher-order thinking and deeper insight because they free students from having to use up their cognitive processing capacity in more basic calculations. If you are to have the insight to observe that a more abstract principle is at work in a problem or that there is another way to solve it, you cannot be concentrating on the computation. That part has to happen with automaticity so that as much of your processing capacity as possible can remain free to reflect on what you're doing. The more proficient you are at "lower-order" skills, the more proficient you can become at higher-order skills.