

Why Tough Teachers Get Good Results

By JOANNE LIPMAN

Published on WSJ.com

I had a teacher once who called his students "idiots" when they screwed up. He was our orchestra conductor, a fierce Ukrainian immigrant named Jerry Kupchynsky, and when someone played out of tune, he would stop the entire group to yell, "Who eez deaf in first violins!?" He made us rehearse until our fingers almost bled. He corrected our wayward hands and arms by poking at us with a pencil.

Today, he'd be fired. But when he died a few years ago, he was celebrated: Forty years' worth of former students and colleagues flew back to my New Jersey hometown from every corner of the country, old instruments in tow, to play a concert in his memory. I was among them, toting my long-neglected viola. When the curtain rose on our concert that day, we had formed a symphony orchestra the size of the New York Philharmonic.

I was stunned by the outpouring for the gruff old teacher we knew as Mr. K. But I was equally struck by the success of his former students. Some were musicians, but most had distinguished themselves in other fields, like law, academia and medicine. Research tells us that there is a positive correlation between music education and academic achievement. But that alone didn't explain the belated surge of gratitude for a teacher who basically tortured us through adolescence.

We're in the midst of a national wave of self-recrimination over the U.S. education system. Every day there is hand-wringing over our students falling behind the rest of the world. Fifteen-year-olds in the U.S. trail students in 12 other nations in science and 17 in math, bested by their counterparts not just in Asia but in Finland, Estonia and the Netherlands, too. An entire industry of books and consultants has grown up that capitalizes on our collective fear that American education is inadequate and asks what American educators are doing wrong.

I would ask a different question. What did Mr. K do right? What can we learn from a teacher whose methods fly in the face of everything we think we know about education today, but who was undeniably effective?

As it turns out, quite a lot. Comparing Mr. K's methods with the latest findings in fields from music to math to medicine leads to a single, startling conclusion: It's time to revive old-fashioned education. Not just traditional but old-fashioned in the sense that so many of us knew as kids, with strict discipline and unyielding demands. Because here's the thing: It works.

Now I'm not calling for abuse; I'd be the first to complain if a teacher called my kids names. But the latest evidence backs up my modest proposal.

Studies have now shown, among other things, the benefits of moderate childhood stress; how praise kills kids' self-esteem; and why grit is a better predictor of success than SAT scores.

All of which flies in the face of the kinder, gentler philosophy that has dominated American education over the past few decades. The conventional wisdom holds that teachers are supposed to tease knowledge out of students, rather than pound it into their heads. Projects and collaborative learning are applauded; traditional methods like lecturing and memorization – derided as "drill and kill" – are frowned upon, dismissed as a surefire way to suck young minds dry of creativity and motivation.

But the conventional wisdom is wrong. And the following eight principles – a manifesto if you will, a battle cry inspired by my old teacher and buttressed by new research – explain why.

1. A little pain is good for you.

Psychologist K. Anders Ericsson gained fame for his research showing that true expertise requires about 10,000 hours of practice, a notion popularized by Malcolm Gladwell in his book "Outliers." But an often-overlooked finding from the same study is equally important: True expertise requires teachers who give "constructive, even painful, feedback," as Dr. Ericsson put it in a 2007 Harvard Business Review article. He assessed research on top performers in fields ranging from violin performance to surgery to computer programming to chess. And he found that all of them "deliberately picked unsentimental coaches who would challenge them and drive them to higher levels of performance."

2. Drill, baby, drill.

Rote learning, long discredited, is now recognized as one reason that children whose families come from India (where memorization is still prized) are creaming their peers in the National Spelling Bee Championship. This cultural difference also helps to explain why students in China (and Chinese families in the U.S.) are better at math. Meanwhile, American students struggle with complex math problems because, as research makes abundantly clear, they lack fluency in basic addition and subtraction—and few of them were made to memorize their times tables.

William Klemm of Texas A&M University argues that the U.S. needs to reverse the bias against memorization. Even the U.S.

Department of Education raised alarm bells, chastising American schools in a 2008 report that bemoaned the lack of math fluency (a notion it mentioned no fewer than 17 times). It concluded that schools need to

embrace the dreaded "drill and practice."

3. Failure is an option.

Kids who understand that failure is a necessary aspect of learning actually perform better. In a 2012 study, 111 French sixth-graders were given anagram problems that were too difficult for them to solve. One group was then told that failure and trying again are part of the learning process. On subsequent tests, those children consistently outperformed their peers.

The fear, of course is that failure will traumatize our kids, sapping them of self-esteem. Wrong again. In a 2006 study, a Bowling Green State University graduate student followed 31 Ohio band students who were required to audition for placement and found that even students who placed lowest "did not decrease in their motivation and self-esteem in the long term." The study concluded that educators need "not be as concerned about the negative effects" of picking winners and losers.

4. Strict is better than nice.

What makes a teacher successful? To find out, starting in 2005 a team of researchers led by Claremont Graduate University education professor Mary Poplin spent five years observing 31 of the most highly effective teachers (measured by student test scores) in the worst schools of Los Angeles, in neighborhoods like South Central and Watts. Their No. 1 finding: "They were strict," she says. "None of us expected that."

The researchers had assumed that the most effective teachers would lead students to knowledge through collaborative learning and discussion. Instead, they found disciplinarians who relied on traditional methods of explicit instruction, like lectures. "The core belief of these teachers was, 'Every student in my room is underperforming based on their potential, and it's my job to do something about it – and I can do something about it,'" says Prof. Poplin.

She reported her findings in a lengthy academic paper. But she says that a fourth-grader summarized her conclusions much more succinctly this way: "When I was in first grade and second grade and third grade, when I cried my teachers coddled me. When I got to Mrs. T's room, she told me to suck it up and get to work. I think she's right. I need to work harder."

5. Creativity can be learned.

The rap on traditional education is that it kills children's' creativity. But Temple University psychology professor Robert W. Weisberg's research suggests just the opposite. Prof. Weisberg has studied creative geniuses including Thomas Edison, Frank Lloyd Wright and Picasso – and has

concluded that there is no such thing as a born genius. Most creative giants work ferociously hard and, through a series of incremental steps, achieve things that appear (to the outside world) like epiphanies and breakthroughs.

Prof. Weisberg analyzed Picasso's 1937 masterpiece Guernica, for instance, which was painted after the Spanish city was bombed by the Germans. The painting is considered a fresh and original concept, but Prof. Weisberg found instead that it was closely related to several of Picasso's earlier works and drew upon his study of paintings by Goya and then-prevalent Communist Party imagery. The bottom line, Prof. Weisberg told me, is that creativity goes back in many ways to the basics. "You have to immerse yourself in a discipline before you create in that discipline. It is built on a foundation of learning the discipline, which is what your music teacher was requiring of you."

6. Grit trumps talent.

In recent years, University of Pennsylvania psychology professor Angela Duckworth has studied spelling bee champs, Ivy League undergrads and cadets at the U.S. Military Academy in West Point, N.Y. – all together, over 2,800 subjects. In all of them, she found that grit – defined as passion and perseverance for long-term goals – is the best predictor of success. In fact, grit is usually unrelated or even negatively correlated with talent.

Prof. Duckworth, who started her career as a public school math teacher and just won a 2013 MacArthur "genius grant," developed a "Grit Scale" that asks people to rate themselves on a dozen statements, like "I finish whatever I begin" and "I become interested in new pursuits every few months." When she applied the scale to incoming West Point cadets, she found that those who scored higher were less likely to drop out of the school's notoriously brutal summer boot camp known as "Beast Barracks." West Point's own measure—an index that includes SAT scores, class rank, leadership and physical aptitude – wasn't able to predict retention.

Prof. Duckworth believes that grit can be taught. One surprisingly simple factor, she says, is optimism—the belief among both teachers and students that they have the ability to change and thus to improve. In a 2009 study of newly minted teachers, she rated each for optimism (as measured by a questionnaire) before the school year began. At the end of the year, the students whose teachers were optimists had made greater academic gains.

7. Praise makes you weak...

My old teacher Mr. K seldom praised us. His highest compliment was "not bad." It turns out he was onto something. Stanford psychology professor

Carol Dweck has found that 10-year-olds praised for being "smart" became less confident. But kids told that they were "hard workers" became more confident and better performers.

"The whole point of intelligence praise is to boost confidence and motivation, but both were gone in a flash," wrote Prof. Dweck in a 2007 article in the journal *Educational Leadership*. "If success meant they were smart, then struggling meant they were not."

8....while stress makes you strong.

A 2011 University at Buffalo study found that a moderate amount of stress in childhood promotes resilience. Psychology professor Mark D. Seery gave healthy undergraduates a stress assessment based on their exposure to 37 different kinds of significant negative events, such as death or illness of a family member. Then he plunged their hands into ice water. The students who had experienced a moderate number of stressful events actually felt less pain than those who had experienced no stress at all.

"Having this history of dealing with these negative things leads people to be more likely to have a propensity for general resilience," Prof. Seery told me. "They are better equipped to deal with even mundane, everyday stressors."

Prof. Seery's findings build on research by University of Nebraska psychologist Richard Dienstbier, who pioneered the concept of "toughness" – the idea that dealing with even routine stresses makes you stronger. How would you define routine stresses? "Mundane things, like having a hardass kind of teacher," Prof. Seery says.

My tough old teacher Mr. K could have written the book on any one of these principles. Admittedly, individually, these are forbidding precepts: cold, unyielding, and kind of scary.

But collectively, they convey something very different: confidence. At their core is the belief, the faith really, in students' ability to do better. There is something to be said about a teacher who is demanding and tough not because he thinks students will never learn but because he is so absolutely certain that they will.

Decades later, Mr. K's former students finally figured it out, too. "He taught us discipline," explained a violinist who went on to become an Ivy League-trained doctor. "Self-motivation," added a tech executive who once played the cello. "Resilience," said a professional cellist. "He taught us how to fail—and how to pick ourselves up again." Clearly, Mr. K's methods aren't for everyone. But you can't argue with his results. And that's a lesson we can all learn from.

Ms. Lipman is co-author, with Melanie Kupchynsky, of "Strings Attached: One Tough Teacher and the Gift of Great Expectations," to be published by Hyperion on Oct. 1. She is a former deputy managing editor of The Wall Street Journal and former editor-in-chief of Condé Nast Portfolio.