

How to Build a Better Teacher

By ELIZABETH GREEN



(Illustration by Zohar Lazar)

Open the door and walk in. Remain standing. Or maybe you should sit?

This crowded rectangular room is yours. It has 26 chairs with attached desks, and a rowdy fifth grader to fill each seat. Your job is to make sure that, an hour from now, the students have grasped the

concept of “rate”: If a car is going 55 miles per hour, how far will it have traveled after an hour, two hours, 30 minutes, 15?

The lesson hums along, everything going relatively smoothly when, just as you ask the final question—about how far the car will go after 15 minutes—up pops the last hand you expect, from a boy named Richard. You know that the other volunteers can probably produce a solid answer. But Richard is something of a mystery. Earlier in the year he informed you that math is his “worse subject.” Now he’s volunteering to answer the most difficult question of the day—and you have no idea what he’ll say. What do you do?

Luckily, the person facing this question is not actually you. It’s Magdalene Lampert, then a Michigan teacher whose techniques have been used to train educators across the U.S., and who inspired a PBS show, *Square One TV*, aimed at teaching young kids math. When she called on Richard, he made the mistake she feared he would—answering, nonsensically, that the car would travel 18 miles in 15 minutes—but she was able to turn a lapse into an opportunity. Instead of immediately declaring the answer incorrect, she pivoted, asking if anyone agreed. The redirection granted

Richard time to reconsider. And indeed, after a pause, he broke the silence with a change of heart.

Alas, Richard's new answer was also incorrect, 13.5 instead of 13.75. But Lampert handled that slip masterfully, too. Calmly ignoring the students clamoring to tell Richard that he was wrong, she instead asked Richard why he changed his mind. He knew 18 couldn't be right, he explained, because doubling it doesn't get 27, the approximate distance they agreed a car would go if it traveled for a half hour. He noticed, in other words, that traveling double the distance but at the same rate should take twice as much time—a sophisticated observation. Turning the class's attention to Richard's aha moment, Lampert transformed what could have been a demoralizing episode for a child into a chance for all 26 students to learn something deeper about math. And she did it all in less than 15 minutes.

What makes for great and nimble teachers like Magdalene Lampert? The Hollywood view is that they're born that way: Like Michelle Pfeiffer's ex-Marine in *Dangerous Minds* and Edward James Olmos's Jaime Escalante in *Stand and Deliver*, brilliant - teachers transform their students through brute charisma. Bad teachers, conversely, are portrayed as either deliberately terrible (as with the Sue Sylvester character on *Glee*) or incapable of being anything else (Ben Stein's nasal droner in *Ferris Bueller's Day Off*). We want to believe there are natural-born teachers, and that if we can identify their common personality traits, we can build a better school system. It is the bedrock idea behind our prescription for improving education. We need to grant the great ones the freedom to channel their inner genius, and fire the laggards.

The natural-born teacher, though, has proven to be a myth. Those studies looking for the personality traits of great teachers? They don't pan out. Researchers have found that the most effective teachers can be extroverts—or they can just as easily be introverts. Some are humorous, but others are serious. Some are as flexible as rubber; others are as rigid as a ruler. It's not personality that makes a teacher great, but a

specialized body of knowledge that must be learned—and that often goes against what comes naturally. Here are five examples, taken from the findings of the best education researchers, of what great teachers do differently:

1. They can right a wrong.

In 1999, researcher Deborah Loewenberg Ball, now dean of the University of Michigan's school of education, and her colleagues created a simple math test—not for students, but for teachers. Instead of asking only for the right answers to math problems, the test also asked teachers to analyze the missteps of students who had given wrong ones.

Why, for example, would a third grader think that 307 minus 168 equals 261, when the answer is actually 139? In order to help correct this common error, teachers needed to know that students often take the difference between each pair of numbers, subtracting 7 from 8 rather than 8 from 7, and so on.

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When Ball and her team gave the test to elementary school math teachers, they found those who scored highest also managed to help their students learn the most math. The best teachers even outscored math Ph.D's on the test. Mastering a subject was not the same as knowing how to teach it. The best teachers put themselves in their students' shoes—and grapple with how they arrived at the wrong answer in order to set them right.

2. They never say "Shhh!"

For the past 10 years, Doug Lemov, author of *Teach Like a Champion*, has studied the most effective teachers to see what they have in common. What he discovered is that their success depends not on personality, but on a consistent set of techniques—ones that sometimes defy most teachers' natural impulses. "Shhh!" is a common adult response to a group of noisy, off-task children. But the command suffers from what Lemov calls a "fundamental ambiguity." "Are

you asking the kids not to talk, or are you asking the kids to talk more quietly?" he asks.

The best teachers, Lemov found, eradicate ambiguity and respond to misbehavior with specificity, describing the desired behavior rather than the problem. "We're following along in our books," the teacher might say, gently reminding the distracted students to get back to work.

3. They encourage deeper thinking.

Typically, when international standardized tests come out, American students rank surprisingly low, scoring more poorly on math and reading than their counterparts in other developed countries like Singapore, Finland, and Japan. But how do kids in those nations manage to learn so much?

In American classrooms, students helped initiate the solution to a problem in 9 percent of lessons; in Japanese classrooms, the figure was 40 percent.

In the 1990s, psychologist James Stigler began studying Japanese and American math classrooms, scrutinizing videotapes of lessons in each of the two countries. One of the biggest differences he found had to do with the kinds of questions that teachers asked. In Japan, the most common type was what Stigler called "explain how or why": How did you find the area of this triangle? Why is the area here 17? In the U.S., by contrast, the most common type was what Stigler called "name/identify": What kind of triangles have we studied? What is the length of this shape?

The nuanced difference in how the questions were framed influenced the participation rate among the students. In American classrooms, students helped initiate the solution to a problem in 9 percent of lessons; in Japanese classrooms,

the figure was 40 percent. By asking questions that pushed students to think on their own, Japanese teachers taught them more.

4. They “cold call” —with purpose

How do the best teachers ensure that students stay engaged? One effective technique that Lemov uncovered during his research reminded him less of grade school than of the stint he spent at Harvard Business School. It’s the dreaded “cold call,” when a teacher asks a question of a student who hasn’t raised her hand.

The goal is to extract the maximum possible mileage from each question. By introducing the possibility that anyone can be asked to speak at any time, teachers decrease the chances their students will tune out.

Some teachers even added variations to the technique. Instead of naming the student destined to give an answer before stating the question (“Sophie, tell me, why does 10 make sense here?”), a teacher might switch the pattern (“Why does 10 make sense here ... Sophie?”). The longer the pause between the question and the child’s name, the more time every other student spent formulating an answer—and, therefore, thinking.

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5. They show more than they tell.

Great teachers might need to be mind readers, but children should never have to be. To help students learn to complete tasks that require a lot of detailed thinking—understanding a complicated novel, for example, or constructing an argument—the most effective teachers practice what Stanford education professor Pam Grossman calls “modeling.”

To model the thinking that underlies complex literary tasks, teachers begin by analyzing what skilled readers or writers do. It is not enough, after all, simply to tell a student who can't understand a text to "read it again" or to ask a student whose essay is weak to "make it better." The teacher needs to be more specific, showing students what this kind of thinking looks like by illuminating the invisible mental steps that go into it. Grossman calls this "making your thinking visible."

By taking students through each mental leap, one at a time, teachers can help them see the exact processes they'll need to complete to be a better reader, write a better essay, or make a better argument.

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