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How to Make Great Teachers

By Claudia Wallis

We never forget our best teachers—those who imbued us with a deeper understanding or an enduring passion, the ones we come back to visit years after graduating, the educators who opened doors and altered the course of our lives. I was lucky enough to encounter two such teachers my senior year in a public high school in Connecticut. Dr. Cappel told us from the outset that his goal was not to prepare us for the AP biology exam; it was to teach us how to think like scientists, which he proceeded to do with a quiet passion, mainly in the laboratory. Mrs. Hastings, my stern, Radcliffe-trained English teacher, was as devoted to her subject as the gentle Doc Cappel was to his: a tough taskmaster on the art of writing essays and an avid guide to the pleasures of James Joyce. Looking back, I'd have to credit this inspirational pair for carving the path that led me to a career writing about science.

It would be wonderful if we knew more about teachers such as these and how to multiply their number. How do they come by their craft? What qualities and capacities do they possess? Can these abilities be measured? Can they be taught? Perhaps above all: How should excellent teaching be rewarded so that the best teachers—the most competent, caring and compelling—remain in a profession known for low pay, low status and soul-crushing bureaucracy?

Such questions have become critical to the future of public education in the U.S. Even as politicians push to hold schools and their faculty members accountable as never before for student learning, the nation faces a shortage of teaching talent. About 3.2 million people teach in U.S. public schools, but, according to projections by economist William Hussar at the National Center for Education Statistics, the nation will need to recruit an additional 2.8 million over the next eight years owing to baby-boomer retirement, growing student enrollment and staff turnover—which is especially rapid among new teachers. Finding and keeping high-quality teachers are key to America's competitiveness as a nation. Recent test results show that U.S. 10th-

graders ranked just 17th in science among peers from 30 nations, while in math they placed in the bottom five. Research suggests that a good teacher is the single most important factor in boosting achievement, more important than class size, the dollars spent per student or the quality of textbooks and materials.

Across the country, hundreds of school districts are experimenting with new ways to attract, reward and keep good teachers. Many of these efforts borrow ideas from business. They include signing bonuses for hard-to-fill jobs like teaching high school chemistry, housing allowances (\$15,000 in New York City) and what might be called combat pay for teachers who commit to working in the most distressed schools. But the idea gaining the most momentum—and controversy—is merit pay, which attempts to measure the quality of teachers' work and pay teachers accordingly.

Traditionally, public-school salaries are based on years spent on the job and college credits earned, a system favored by unions because it treats all teachers equally. Of course, everyone knows that not all teachers are equal. Just witness how parents lobby to get their kids into the best classrooms. And yet there is no universally accepted way to measure competence, much less the ineffable magnetism of a truly brilliant educator. In its absence, policymakers have focused on that current measure of all things educational: student test scores. In districts across the country, administrators are devising systems that track student scores back to the teachers who taught them in an attempt to apportion credit and blame and, in some cases, target help to teachers who need it. Offering bonuses to teachers who raise student achievement, the theory goes, will improve the overall quality of instruction, retain those who get the job done and attract more highly qualified candidates to the profession—all while lifting those all-important test scores.

Such efforts have been encouraged by the Bush Administration, which in 2006 started a program that awards \$99 million a year in grants to districts that link teacher compensation to raising student test scores. Merit pay has also become part of the debate in Congress over how to improve the 2001 No Child Left Behind Act (NCLB), triggering an outcry from teachers' unions, which oppose federal intrusion into how teachers get paid and evaluated. The subject is a touchy one for the Democrats, who count on support from the powerful teachers' unions. Last summer, Barack Obama endorsed merit pay at a meeting of the National Education Association, the nation's largest teachers' union, so long as the measure of merit is

"developed with teachers, not imposed on them and not based on some arbitrary test score." Hillary Clinton says she does not support merit pay for individual teachers but does advocate performance-based pay on a schoolwide basis.

It's hard to argue against the notion of rewarding the best teachers for doing a good job. But merit pay has a long, checkered history in the U.S., and new programs to pay teachers according to test scores have already backfired in Florida and Houston.

What holds more promise is broader efforts to transform the profession by combining merit pay with more opportunities for professional training and support, thoughtful assessments of how teachers do their jobs and new career paths for top teachers. Here's a look at what's really needed to improve teaching in the U.S.—and what just won't work.

The Leaky Bucket

There's no magic formula for what makes a good teacher, but there is general agreement on some of the prerequisites. One is an unshakable belief in children's capacity to learn. "Anyone without this has no business in the classroom," says Margaret Gayle, an expert on gifted education at Duke University, who has trained thousands of teachers in North Carolina. Another requirement, especially in the upper grades, is a deep knowledge of one's subject. According to research on teacher efficacy by statistician William Sanders, the higher the grade, the more closely student achievement correlates to a teacher's expertise in her field. Nationally, that's a problem. Nearly 30% of middle- and high school classes in math, English, science and social studies are taught by teachers who didn't major in a subject closely related to the one they are teaching, according to Richard Ingersoll, professor of education and society at the University of Pennsylvania. In the physical sciences, the figure is 68%. In high-achieving countries like Japan and South Korea, he says, "you have far less of this misassignment going on."

Other essential skills require on-the-job practice. It takes at least two years to master the basics of classroom management and six to seven years to become a fully proficient teacher. Unfortunately, a large percentage of public-school teachers give up before they get there. Between a quarter and a third of new teachers quit within their first three years on the job, and as many as 50% leave poor, urban schools within five years. Hiring new teachers is "like filling a bucket with a huge hole in the

bottom," says Thomas Carroll, president of the National Commission on Teaching and America's Future, a Washington-based nonprofit.

Why do teachers bail? One of the biggest reasons is pay. U.S. public-school teachers earn an average annual salary of less than \$48,000, and they start off at an average of about \$32,000. That's what Karie Gladis, 29, earned as a new teacher in Miami. She scrimped for 3 1/2 years and then left for a job in educational publishing. "It was stressful living from paycheck to paycheck," she says. "If my car broke down or if I needed dental work, there was just no wiggle room."

But money isn't the only reason public-school teachers quit. Ben Van Dyk, 25, left a job teaching in a high-poverty Philadelphia school after just one year to take a position at a Catholic school where his earning prospects are lower but where he has more support from mentors, more control over how he teaches and fewer problems with student discipline. Novice teachers are much more likely to call it quits if they work in schools where they feel they have little input or support, says Ingersoll. And there's evidence that the best and brightest are the first to leave. Teachers with degrees from highly selective college are more likely to leave than those from less prestigious schools. In poor districts, attrition rates are so high, says Carroll, that "we wind up taking anybody just to have an adult in the classroom."

How Do You Measure Merit?

To the business-minded people who are increasingly running the nation's schools, there's an obvious solution to the problems of teacher quality and teacher turnover: offer better pay for better performance. The challenge is deciding who deserves the extra cash. Merit-pay movements in the 1920s, '50s and '80s stumbled over just that question, as the perception grew that bonuses were awarded to principals' pets. Charges of favoritism, along with unreliable funding and union opposition, sank such experiments.

But in an era when states are testing all students annually, there's a new, less subjective window onto how well a teacher does her job. As early as 1982, University of Tennessee statistician Sanders seized on the idea of using student test data to assess teacher performance. Working with elementary-school test results in Tennessee, he devised a way to calculate an individual teacher's contribution, or "value added," to student progress. Essentially, his method is this: he takes three or

more years of student test results, projects a trajectory for each student based on past performance and then looks at whether, at the end of the year, the students in a given teacher's class tended to stay on course, soar above expectations or fall short. Sanders uses statistical methods to adjust for flaws and gaps in the data. "Under the best circumstances," he claims, "we can reliably identify the top 10% to 30% of teachers."

Sanders devised his method as a management tool for administrators, not necessarily as a basis for performance pay. But increasingly, that's what it is used for. Today he heads a group at the North Carolina-based software firm SAS, which performs value-added analysis for North Carolina, Ohio, Pennsylvania, Tennessee and districts in about 15 other states. Most use it to measure schoolwide performance, but some are beginning to use value-added calculations to determine bonuses for individual teachers.

Sanders' method is costly and complicated, however. Under steady pressure from NCLB to raise test scores, some districts have looked for quicker, easier ways to identify and reward teachers who boost achievement. In some cases, they have made the call largely on the basis of a single year's test results—a method experts dismiss as unreliable. In Florida, for instance, one of Governor Jeb Bush's final initiatives before he left office in January 2007 was to push through a merit-pay program that offered a 5% bonus to teachers in the top 25% in each participating district, with selection based at least 50% on how much their students' test scores jumped from one year to the next. Houston had a similar initiative, though without the 25% cap.

Both schemes met with fierce resistance. Teachers rebelled against the notion that a year's worth of instruction could be judged by how students did on a single test on a single day. They objected to the lack of clarity about how teachers of subjects not tested by the state would be assessed. And they railed against a system that pitted one colleague against another in a competition for bonuses. To make matters worse, there were gruesome glitches. In Houston, a newspaper website identified which teachers got bonuses. Later, 99 employees were asked to return about \$74,000 in bonus checks issued by mistake. In Florida, one county ran short of bonus funds while another had an embarrassing discrepancy between the number of awards given in predominantly white schools and the number that went to schools with mainly black students. Both Florida and Houston have improved their programs, but local

teachers remain wary. "The new plan doesn't have clear goals," charges Gayle Fallon, who heads the Houston Federation of Teachers. She fully expects "all hell to break loose again."

Beyond Merit Pay

There are better ways. Florida and Houston might have avoided their mistakes if they had examined some of the more thoughtful approaches to rewarding good teaching that are being tried elsewhere—programs that actively involve teachers and look at more than one measure of how they do their job. In Denver, for example, Professional Compensation, or ProComp, is the product of a seven-year collaboration among the teachers' union, the district and city hall. Rolled out last school year, ProComp includes nine ways for teachers to raise their earnings, some through bonuses and some through bumps in salary. New hires are automatically enrolled, while veterans have the option of sticking with the old salary schedule. But in just one year, half of Denver's 4,555 teachers have signed on.

For Taylor Betz, the program is a no-brainer. A highly regarded 15-year veteran who teaches math in the city's struggling Bruce Randolph School, Betz can rack up an additional \$4,268 this school year if she and her school meet all their goals. That includes \$1,067 for working in a high-needs school, another \$1,067 if students in her school exceed expectations on the state exams, \$356 if she meets professional academic objectives she helped set in the beginning of the year, \$1,067 if she earns a good evaluation from her principal and \$711 if her school is judged to be a "distinguished school," on the basis of a mix of criteria that includes parent satisfaction.

Before ProComp, Betz had reached the top of the district's pay scale at \$53,500 and, despite high marks from her bosses, was looking at nothing more than an annual cost-of-living raise (currently \$260) for the rest of her career. "I've worked in hard-to-serve schools my entire career," says Betz. "I make home visits. I make phone calls. I'm looking at ProComp as compensation for the things that are above and beyond." Betz didn't expect performance pay to change anything about how she does her job but says it has made her even more driven. "Now I refuse to let kids fail," she says. "I'm going to bulldoze whatever the problem is and solve it." The bonus money is simply a just reward. "I'm not a money grubber. Most teachers aren't. But people in other professions get raises," she says. "Why shouldn't we?"

There's little research on what makes for a successful merit-pay system, but several factors seem critical, says Matthew Springer, director of the National Center on Performance Incentives at Vanderbilt University. Denver's program includes many of them: a careful effort to earn teacher buy-in to the plan, clarity about how it works, multiple ways of measuring merit, rewards for teamwork and schoolwide success, and reliable financing. In fact, Denver's voters agreed to pay an extra \$25 million a year in taxes for nine years to support the program.

It's too soon to say if ProComp will raise achievement in Denver, but a pilot study found that students of teachers who enrolled on a trial basis performed better on standardized tests than other students. The program is already successful by another measure: raising the number of teachers applying to work in Denver's most troubled schools. Jake Firman, 22, who joined Teach for America right out of college in 2007, says he chose Denver from a list of 26 cities largely because of ProComp. "I thought it was a very cool idea," says Firman, who stands to earn extra pay for filling a hard-to-staff spot (middle-school math) at a high-needs school.

Another impressive model is the Teacher Advancement Program, or TAP, created by the Milken Family Foundation in 1999 and now in place in 180 schools in 14 states and Washington. TAP is more than a merit-pay program. At TAP schools, some of which are unionized, raises are based on the teachers' performance—which is measured by a combination of structured observations made four to six times a year and student test results, using a Sanders-style value-added formula. The best TAP teachers can climb the professional ladder in three ways: remaining in the classroom but becoming a mentor to others; leaving one's own classroom to become a full-time teacher of teachers, or master teacher; or taking the traditional route into administration.

The element of TAP that gets the most praise from teachers is its rigorous approach to helping them build and refine their skills and learn from one another. To do this, TAP teachers meet in small groups led by a master teacher for one to two hours a week, generally during the school day. That degree of supervision can be a tough sell to veteran teachers. "I hated it tooth and nail," says Cathy Dailey, who has been teaching science at Bell Street Middle School in Clinton, S.C., for 21 years. "All of a sudden I had to articulate my goals and know that someone was going to come in and watch me." Dailey particularly disliked being forced to reflect in writing on how

well her lessons went. "I'd rather you beat me with a stick!" she says. But six years after TAP was introduced, Dailey admits that it has made her more versatile and effective. "I wouldn't be nearly the teacher I am today if it weren't for the big *T-A-P*," she says. "I do many more labs and more hands-on lessons. I'm always looking for new ideas on the Internet." She even likes writing the reflections. "You really evaluate what you did and how effective you were," she says. "Sometimes I give myself a pat on the back, and sometimes I think, Oh, boy, you've got to change that."

Since Bell Street Middle School adopted TAP in 2001, it has doubled the percentage of students scoring at an advanced level in math and reading and reduced the percentage scoring "below basic" in math 46%. Meanwhile, teacher turnover has fallen from a disastrous 32% a year to less than 10%. Jason Culbertson, who heads TAP in South Carolina, says such improvements in student achievement, quality of teaching and teacher morale are typical. A recent analysis involving 610 TAP teachers in six states, conducted by the National Institute for Excellence in Teaching, the nonprofit that runs TAP, found that 38% of TAP teachers produced above-average gains in student achievement in a single year, vs. 26% of teachers in a control group.

This school year South Carolina extended the program from 18 schools to 43, including all 10 schools in rural, impoverished Marlboro County, where 20% of teachers are not even certified. The challenge is funding, says Culbertson. South Carolina's TAP schools draw on a variety of federal, state and foundation funds to pay for stipends of \$10,000 for master teachers and \$5,000 for mentors and bonuses that range from \$350 to \$9,500. Culbertson is always looking for ways to attract more talent. His latest project: refurbishing an old Marlboro County mansion as an almost rent-free home for top teachers. "I treat the job more like a crusade," says the 28-year-old former social-studies teacher. "My goal is systematic change across the state."

It's a good goal for an entire nation in need of better-quality teaching. As U.S. school districts embark on hundreds of separate experiments involving merit pay, some lessons seem clear. If the country wants to pay teachers like professionals—according to their performance, rather than like factory workers logging time on the job—it has to provide them with other professional opportunities, like the chance to grow in the job, learn from the best of their peers, show leadership and have a voice in decision-

making, including how their work is judged. Making such changes would require a serious investment by school districts and their taxpayers. But it would reinvigorate a noble profession.

—With reporting by Rita Healy/Denver, Hilary Hylton/Houston and Kathie Klarreich/Miami

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