

# Teaching and Learning for COLLEGE READINESS

The Role of Standards,  
Feedback, and Support

BILL & MELINDA  
GATES *foundation*



The Bill & Melinda Gates Foundation is producing the Let's Talk series to share what we are learning from our investments and the work of our partners. Our goal is to share what districts and schools should consider—and avoid—so that we can all learn from each other as we continue to advance college readiness for all students.

OCTOBER 2015



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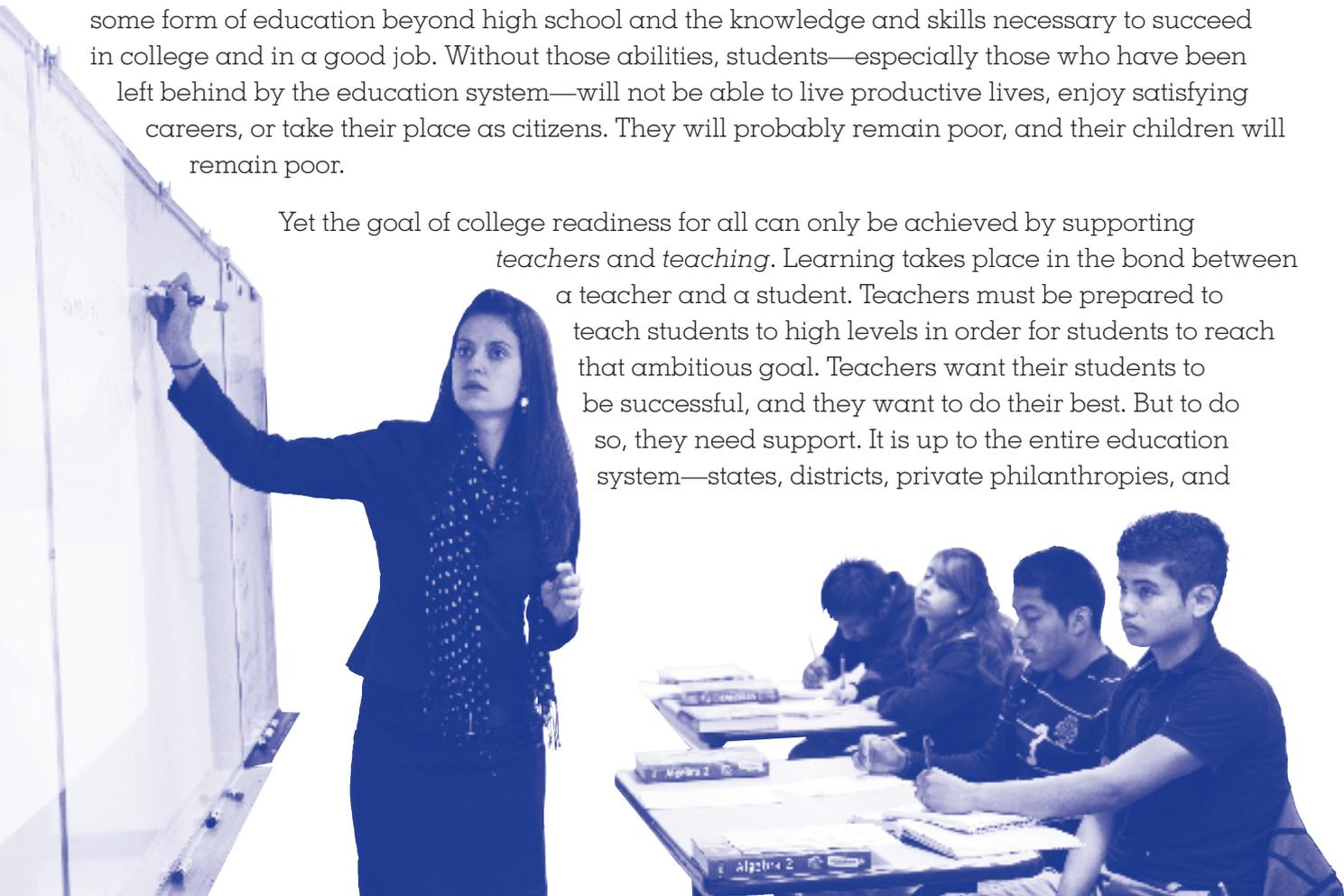
Introduction	2
The Role of Standards	4
The Role of Feedback	11
The Role of Instructional Tools for Teachers	22
Putting It All Together	29
The Next Challenge: Professional Learning to Support High-Quality Instruction	31
Hungry for More?	34

# INTRODUCTION

**In just a few short years, the goal of ensuring that all students graduate from high school prepared for college and careers has been widely embraced.**

Achieving this goal is absolutely essential. In this complex, global society, every student needs some form of education beyond high school and the knowledge and skills necessary to succeed in college and in a good job. Without those abilities, students—especially those who have been left behind by the education system—will not be able to live productive lives, enjoy satisfying careers, or take their place as citizens. They will probably remain poor, and their children will remain poor.

Yet the goal of college readiness for all can only be achieved by supporting *teachers and teaching*. Learning takes place in the bond between a teacher and a student. Teachers must be prepared to teach students to high levels in order for students to reach that ambitious goal. Teachers want their students to be successful, and they want to do their best. But to do so, they need support. It is up to the entire education system—states, districts, private philanthropies, and



others—to make sure that teachers have what they need to ensure all students succeed.

The Bill & Melinda Gates Foundation has invested heavily in support for teachers. The foundation understands that teachers are the fulcrum for improving learning and has drawn on the best available research to identify the most critical levers for teaching success. The foundation has then worked with teachers to develop and test these ideas, strengthen them, and learn from them to support all teachers in the United States as they work to ensure that their students become college ready.

The foundation's work and that of our partners has focused on three critical levers: high standards; high-quality feedback; and strong, useful tools. This report will describe why these are important, what we know about them, what we need to learn, and what districts and schools should do—and should avoid—in putting these levers into place.

The story is not over. The foundation will continue to work with experts—teachers—to be sure that teaching in the United States becomes as strong as it can be. The students deserve no less.

*The Common Core State Standards are new, different and challenging. But it is in the struggle that our teachers define what meaningful instruction looks like. And it is in the struggle that our students discover, explore and make their own learning meaningful.*

**Kyle Schwartz, Teacher,  
Denver, Colorado**



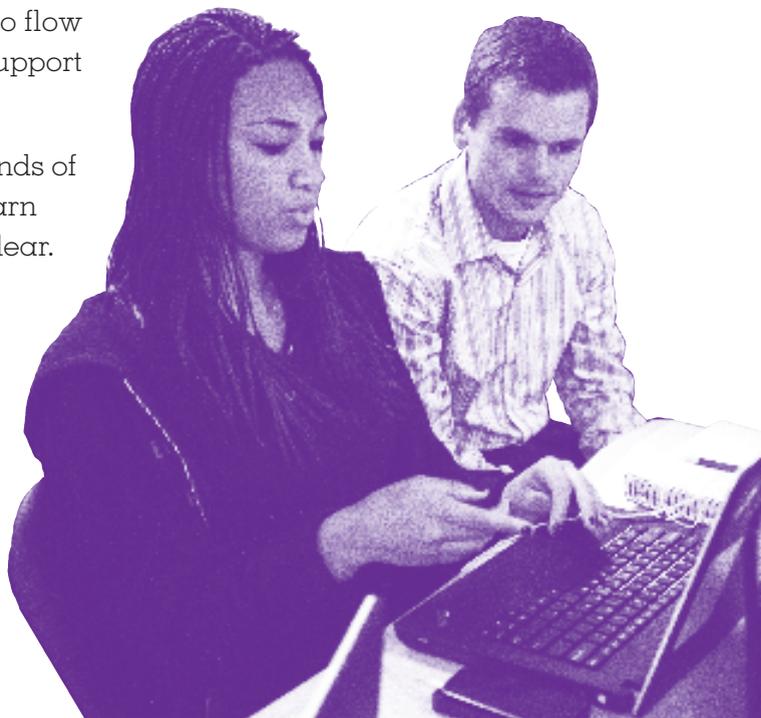
# The Role of STANDARDS

**Individual teachers have always set expectations for student learning and regularly assessed whether students were on track toward meeting those expectations or needed additional help.**

In the 1990s, states and school districts began to set standards for all students by defining what students should know and be able to do in each grade. The idea was to raise expectations for all students, regardless of their background or where they happened to attend school. The development of instructional materials and assessments as well as professional development were supposed to flow from the standards so teachers could receive the support they need to teach the standards.

The idea of state standards emerged from two strands of research. Cognitive science found that students learn best when the expectations for their learning are clear. That is, if students know what they are expected to learn, they will be more engaged in their learning and motivated to do well. Without such clear expectations, learning seems abstract and irrelevant.

At the same time, a strand of policy research found that aligning policies for instructional guidance—materials selection, assessment, and professional learning—around a clear set



of learning goals would make policy and practice more coherent and thus more effective. All of the tools states could provide to support instruction would reinforce each other.

In 2009, governors and chief state school officers, with the support of a broad array of education organizations and foundations, including the Bill & Melinda Gates Foundation, and education experts, including teachers, drafted a set of standards in English language arts and mathematics that would be consistent across the states. These standards, known as the **Common Core State Standards**, were designed to address the reality that too many students were graduating from high school without necessary skills and some of the limitations of existing state standards. To that end, the standards were designed to be “fewer, clearer, and higher”:

- ➔ Fewer to help ensure that teachers could address all of the standards in depth;
- ➔ Clearer so that they would be understandable to teachers and curriculum and assessment developers, as well as to students and parents; and
- ➔ Higher to match the expectations of high-performing states and nations.

Importantly, the standards were also designed explicitly to lead to college and career readiness for all students. That is, students who attained the standards would be prepared for postsecondary education or training, without the need for remediation.

Today, 42 states and the District of Columbia are using the Common Core State Standards. They are redesigning their instructional materials and assessments and providing support for teachers to enable them to understand the standards and what they mean for instruction.

When we began to shift our teaching for new standards, one thing became apparent: the focus. Common Core clearly identifies the major work at each grade level, driving instruction with an eye on the most important concepts.

Kristin DeLorenzo  
and Liz Gardner,  
Teachers, Flemington  
Raritan School District,  
New Jersey

# What the Standards Are ... and Are Not

Students are different, but there is a basic set of knowledge and skills that all students need to be successful in college or to get a job. The fact is, too many students are graduating without those skills. The Common Core State Standards establish minimum guidelines for mathematics and English knowledge that students should have at each grade level and that schools can use to help each student. The standards empower every teacher to decide how to help his/her own students reach each standard depending on their different circumstances. And it's working: States that adopted the standards early are beginning to see improvement in their end-of-year assessments.

The standards spell out what students should know and be able to do at the end of each grade and envision a progression of student learning over time. This progression will lead students to be prepared for postsecondary education without remediation by the time they leave high school. In that way, the standards state where all students should go, regardless of where they are from, and are intended to lift all students up to high levels.

For example, a typical standard for seventh grade mathematics says: "Know the formulas for the area and circumference of a circle and use them to solve problems." A comparable standard for eighth grade mathematics says: "Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems."

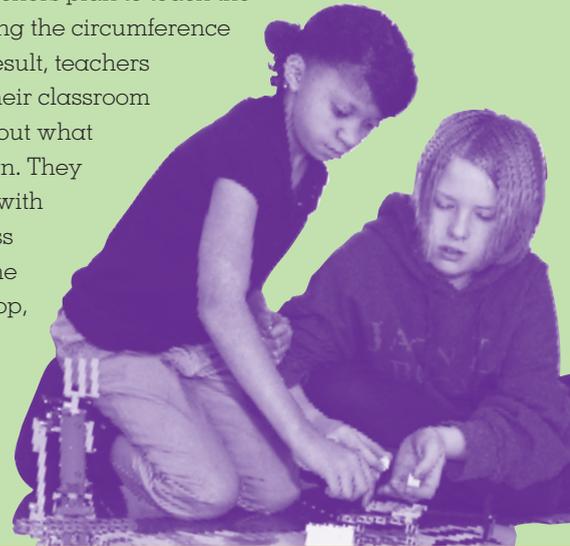
These standards make clear that students should be able to demonstrate their understanding of key geometric concepts and be able to use that knowledge. They assume that students have learned what they needed to know at the end of seventh grade; they do not repeat the expectation in the next grade, as some state standards of the 1990s had done.

And they suggest that students should progress in their learning from an understanding of two-dimensional figures to an understanding of three-dimensional figures.

What the standards do *not* do is define curriculum or instruction. Teachers can use a number of strategies to enable students to know the area and circumference of circles and the volume of spheres. Rather, the standards provide guidance for teachers and set clear expectations for their teaching

The standards also stretch teachers to expect more from their students. By setting high learning goals that focus on problem solving and critical thinking, they allow teachers to continue to challenge students and ask them to do what they are capable of doing.

But standards also do more for teachers. Because they are consistent across schools, districts, and now states, they create a common vocabulary for all teachers. For the first time, teachers from Maine to California have the same expectations for their students; all seventh grade mathematics teachers plan to teach the formula for finding the circumference of circles. As a result, teachers need not close their classroom door and figure out what to do on their own. They can collaborate with colleagues across town or across the country to develop, share, and refine lessons. And they are.



# What We Know: The Positive Impacts

## High-achieving states and countries show...

**Analyses of student performance** on international exams such as the Program for International Assessment (PISA) have shown that the nations ranked the highest have national education standards that are coherent, focused, and rigorous and that they organize their education systems around helping all students meet these standards. William Schmidt of Michigan State University refers to these high-achieving nations as “A+” nations. In mathematics, these nations focus on a more limited set of topics in greater depth and tend to have students study the same, specific material in the same grade, regardless of where they live. Schmidt believes that this approach creates an important foundation that helps cultivate deeper student understanding of the most important mathematics ideas and concepts that better prepares students to study more complex topics.

Schmidt found a 90 percent overlap between the Common Core mathematics standards and a composite of the mathematics standards in the A+ nations. Schmidt also found that the U.S. states with mathematics standards most similar to the Common Core had statistically significantly higher scores on the National Assessment of Educational Progress (NAEP).

We are beginning to see a higher level of engagement from the students. I'm spending more time one-on-one with students and less time lecturing. It's a positive change.

**Sophia Faridi,**  
6th Grade Language  
Arts Teacher, Davie,  
Florida



## Early U.S. adopters show...

In 2010, Kentucky was the first state to adopt the Common Core State Standards. It began implementing the standards the following year and introduced the first tests aligned with the standards in spring 2012. Since then, Kentucky high school students' performance on the ACT, an exam that all 11th graders in the state are required to take, has increased, according to [research by the American Institutes for Research \(AIR\)](#), funded by the Bill & Melinda Gates Foundation. Additionally, the AIR study found that the Kentucky high school juniors who had experienced one and two years of Common Core State Standards implementation performed better on the ACT than a similar group of Kentucky juniors who took the ACT before the standards' introduction. These findings suggest that the adoption of the standards already may be leading to some positive impacts within a relatively short span of time.

## Teachers say...

The majority of teachers support the Common Core State Standards, especially those with the most experience using them in the classroom. Teachers often say, "The students did more than I thought they could do."

That said, implementation of the new standards has been uneven. A [survey of English language arts teachers](#) conducted by Tim Shanahan and Ann Duffett for the Thomas B. Fordham Institute found that a majority of teachers assign books to students based on their reading level, rather than assigning texts that are appropriately complex for the grade level, as the standards suggest. A [study of six middle schools](#) by Education Trust found evidence suggesting that students' assignments are not yet aligned with grade-level standards and do not push students to high levels of thinking.

In addition, analyses of textbooks have found that traditional curriculum materials are not yet aligned to the standards. A [review of mathematics textbooks](#) by EdReports, a grantee of the Bill & Melinda Gates Foundation, found that only one set of materials (*Eureka Math*) matched the requirements of the standards. Studies by [William Schmidt](#) and [Morgan Polikoff](#) of the University of Southern California found similar results.

# What We Still Need to Know

While the existing research has highlighted the promise of standards and the challenges in implementation, more research is needed on the conditions for effective implementation. How do systems like Kentucky, which appear to be successful, organize themselves to support teachers in implementing standards and raising the level of student learning? What role do teachers play in developing and sharing knowledge about effective instructional practice?

Also, how do we find new ways of helping students learn (such as personalized learning) while providing additional resources, opportunities, and support that accelerate those students who need it most? Without specific attention to that issue, there is a risk of exacerbating the existing achievement gaps between higher-performing and lower-performing students—an issue that all school systems are grappling with.

Finally, how do we keep more students from falling off track in the “gateway grades,” such as the middle school years and ninth grade in high school, pivotal points on the pathway to college and career readiness? What can be done to support students at these turning points warrants further attention.

*The standards are forcing a more thorough examination of the text, more expectations in lab work, and they're training students to actively pull out information they'll be required to know.*

**Marcus Watson, Middle School Science Teacher, Waycross, Georgia**

*The Tools/Supports section takes a closer look at several instructional tools that are helping teachers with implementation.*



# What We Suggest

Early research and real-world examples from those making progress suggest several strategies worth pursuing—and avoiding—in helping all students achieve high standards.

## CONSIDER

- ➕ **Ensuring that teachers have access to quality curricula, lesson plans, and other resources that translate the standards into classroom practice.** Use independent reviews by groups such as Graphite.org and EdReports.org to make buying decisions. Or take advantage of teacher-driven, crowd-sourced solutions such as the Literacy and Mathematics Design Collaboratives, LearnZillion, and Better Lesson, supported by the foundation.
- ➕ **Helping school and district leaders develop a common understanding** of what instructional shifts in classrooms can support their teachers and how to provide meaningful feedback.
- ➕ **Ensuring alignment** of curriculum, instruction, professional development, and evaluation systems to the level of rigor that is set in the standards.
- ➕ **Focusing on providing developmental feedback** to teachers and differentiating professional development for individuals and groups, at least until the new standards are well understood, before attaching stakes related to growth on new state tests.

## AVOID

- ✘ **Providing teachers with tools and resources without finding adequate time** for them to learn how to use the tools and adjust instruction based on student results. This may require reconfiguring existing planning time or seeking additional time.
- ✘ **Spending all the time upfront unpacking the standards only;** have teachers actively engage students in Common Core-aligned work to help them actually master the standards.
- ✘ **Focusing on end-of-year summative assessments** at the expense of using formative assessments throughout the year. Data from formative assessments can inform professional development and provide targeted support for students.

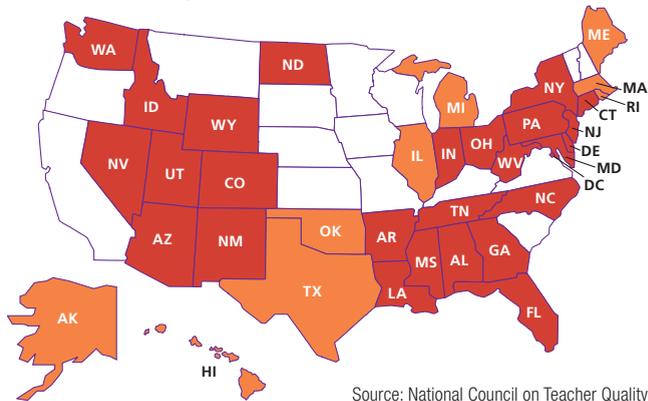
# The Role of FEEDBACK

**A strong and consistent body of research, summarized in a comprehensive review by the National Commission on Teaching and America's Future, has found that teaching is the most important school-related factor in student achievement and that the quality of teaching matters. Teachers who are highly effective help students learn at higher levels than those who are less effective.**

Yet until recently, most schools and districts did little to identify teaching effectiveness or provide feedback to teachers on ways they could improve their practice. A report by Education Sector concluded that many principals conducted cursory evaluations that offered perfunctory advice on improvement. And a highly influential report by TNTP (*The Widget Effect, 2009*) found that, in the districts it studied, nearly all teachers earned high ratings from evaluations, regardless of their students' learning. Seventy-three percent of teachers reported they did not receive any specific feedback on their performance during their most recent evaluation, according to TNTP.

In response to these developments, states and districts have strengthened teacher evaluation, feedback and support systems. As of 2014, 27 states require annual evaluations, up from 15 in 2009; 33 states explicitly require or allow the use of student survey data; and 35 states include student growth as a significant part of teacher evaluation, up from 4 in 2009, according to the National Council on Teacher Quality. Today, 25

- 27 states require annual evaluations for ALL teachers
- 9 states require them for MOST teachers

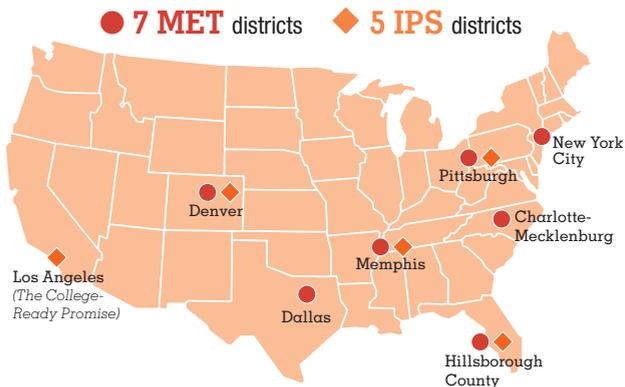


Source: National Council on Teacher Quality

Teachers crave feedback.... As a teacher, how could I ever expect my students to grow if I did not give them multiple opportunities in a variety of formats to demonstrate their understanding of content?

Elizabeth Morgan, Teacher,  
New Jersey

### Learning from the Field



states require that professional development be designed and offered based on individual teacher feedback and evaluation results. Federal incentives to win Race to the Top grants or waivers from the federal Elementary and Secondary Education Act in part spurred the growth in evaluation, feedback, and support systems.

In 2009, the Bill & Melinda Gates Foundation launched a major initiative to understand how to identify effective teaching as the first step in designing better feedback and support systems.

**The Measures of Effective Teaching (MET) project** has broadened considerably the field's knowledge about evaluation and feedback and the conditions that are necessary for quality feedback systems. More than 3,000 teachers from seven districts volunteered to participate. In addition, through its Intensive Partnership Site efforts, the foundation supported four large urban districts and a group of charter management organizations in the Greater Los Angeles area to use such measures to support more effective teaching and decisionmaking systemwide.

# The Importance of High-Quality Evaluations and Feedback

**Teacher evaluation systems are, in essence, information systems.**

Evaluations are ways for teachers, coaches, and school leaders to gather information on teaching and learning and identify strengths and areas for improvement. Armed with such information, educators can make sound decisions to improve instruction by providing relevant and timely feedback. Since teaching is the most important school-related factor in student learning, information on teaching is vital.

Teachers have shown repeatedly that they are hungry for this kind of information. They are eager to work with their peers and expert teachers, to share lessons, discuss what works, and figure out ways to get even better.

One of the most important ways evaluation contributes to improved instruction is by specifying effective practices. Just as students benefit from clear expectations for performance, teachers, too, need to know what the expectations are and to be able to compare their own practice to those expectations. Effective evaluation systems make those expectations explicit. Teachers can then understand what they need to do to meet the expectations.

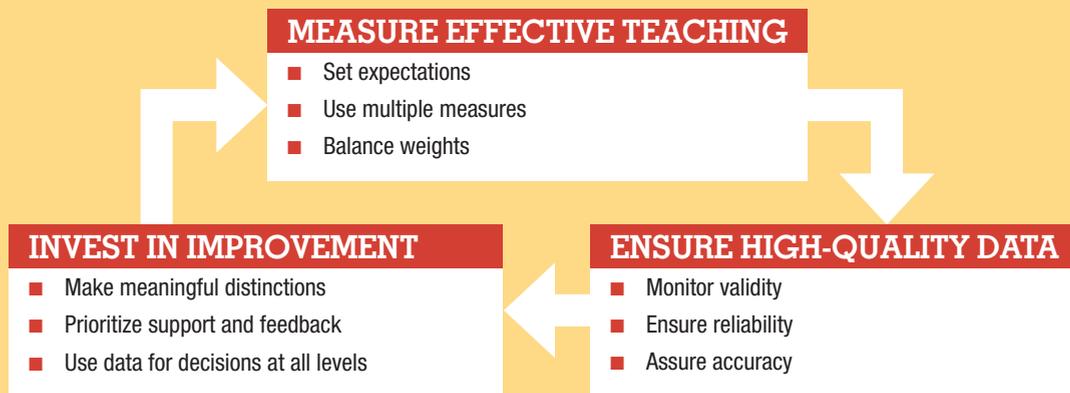
In addition to informing teachers about their practice, evaluation systems also inform school and district leaders about teaching and can help them make better personnel decisions. By pinpointing the areas in which teachers need improvement, leaders can more effectively direct resources for professional development and growth. For example, if evaluations show that a school's teachers could further strengthen mathematics questioning techniques, teachers who are skillful in that area can lead their peers and improve practice schoolwide.

*I love that the students have a voice in our evaluation. Even if it counts for a small amount, they are in my room more than anyone else.*

**Brittany Clark, Assistant High School Principal and Former High School English Teacher, Memphis, Tennessee**

# The Components of High-Quality Evaluations

Based on the extensive research from the MET project and the practical experiences in four districts and a group of Los Angeles-area charter management organizations, the foundation developed nine principles for effective evaluation and feedback systems.



## MEASURE EFFECTIVE TEACHING

- **Set expectations.** Agree on the knowledge, skills, and behaviors that enable better student learning.
- **Use multiple measures.** Employ a variety of measures that reflect the multifaceted nature of teaching, including student surveys, observation instruments, and growth on student assessments.
- **Balance weights.** Ensure that all aspects of teaching are measured and addressed. Avoid an overemphasis on a single measure.

## ENSURE HIGH-QUALITY DATA

- **Monitor validity.** Ensure that the measures are associated with improvements in student outcomes.
- **Ensure reliability.** Use more than one observation and multiple observers to ensure that the measures of practice reflect true performance and not chance.
- **Ensure accuracy.** Train observers so that they apply judgments consistently and fairly.

## INVEST IN IMPROVEMENT

- **Make meaningful distinctions.** Do not set artificial distinctions between teachers whose performance, for all practical purposes, is about equally effective.
- **Prioritize support and feedback.** Measures of practice should not be used primarily to make high-stakes personnel decisions but to provide information for improvement.
- **Use data for decisions at all levels.** Leaders and administrators need information on teaching effectiveness in order to make informed decisions about the use of professional development and other resources.

# What We Know: The Positive Impacts

**Washington, D.C.** A 2013 study by Thomas Dee of Stanford University and James Wyckoff of the University of Virginia found that the District of Columbia Public Schools' IMPACT teacher evaluation and compensation program led to improved performance by teachers who initially had low ratings but continued to work in the district. These teachers would have been at risk of dismissal if their poor ratings continued. The study also found that the IMPACT program's financial incentives led the most effective teachers to improve their performance as well.

## In D.C., Progress for Teachers at Many Levels



**Minimally Effective** teachers who scored below the Effective threshold **improved their performance** substantially — **12.6 IMPACT points** more than teachers who scored at or above the Effective threshold.



**Highly Effective** teachers who were eligible for a permanent pay increase if they maintained their rating for a second consecutive year **improved their performance** by **10.9 IMPACT points**.

Source: Key Findings of Stanford/UVA IMPACT Study

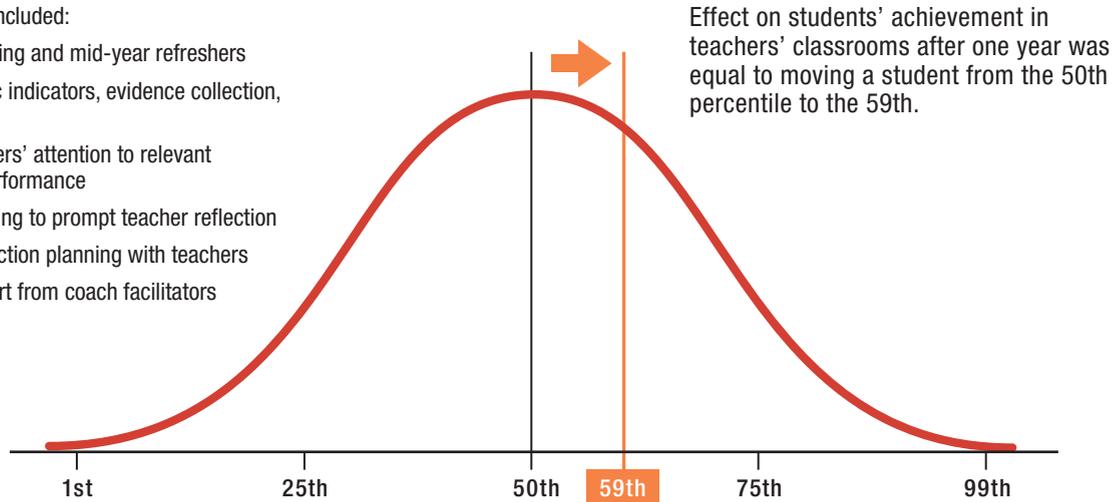
**Cincinnati.** A recent study of Cincinnati Public Schools also found evidence that a well-designed evaluation system can improve teacher performance. Researchers Eric Taylor from Stanford University and John Tyler from Brown University examined a sample of Cincinnati midcareer elementary and middle school teachers participating in a year-long evaluation program. The program emphasized frequent observations of teachers' performance in the classroom, with most observations conducted by experienced peer teachers. Based on data from the 2003–04 through the 2009–10 school years, the researchers found that teachers were more effective at raising student academic performance during the evaluation year than they had been in the prior year and that the teachers performed even better in the year immediately following their participation in the program. They found that students at the 50th percentile in mathematics would score 4.5 percentile points higher after their teacher participated in the program, compared to similar students that same teacher taught before participating in the evaluation program. They also found that teachers who had the weakest performance before the evaluation program began improved the most.

**From Science.** A 2011 study published in *Science* magazine found that providing teachers with feedback on how to improve communication with their students based on videos of their classroom practice had a positive impact on student achievement. Student performance improved the equivalent of moving achievement test scores from the 50th to the 59th percentile.

## MyTeachingPartner: Coaching Teachers by Trained Observers Improved Students' Achievement

Coaches' training included:

- Weeklong training and mid-year refreshers
- Focus on rubric indicators, evidence collection, and rating
- Drawing teachers' attention to relevant evidence of performance
- Using questioning to prompt teacher reflection
- Collaborative action planning with teachers
- Ongoing support from coach facilitators



Source: *Seeing It Clearly: Improving Observer Training for Better Feedback and Better Teaching*



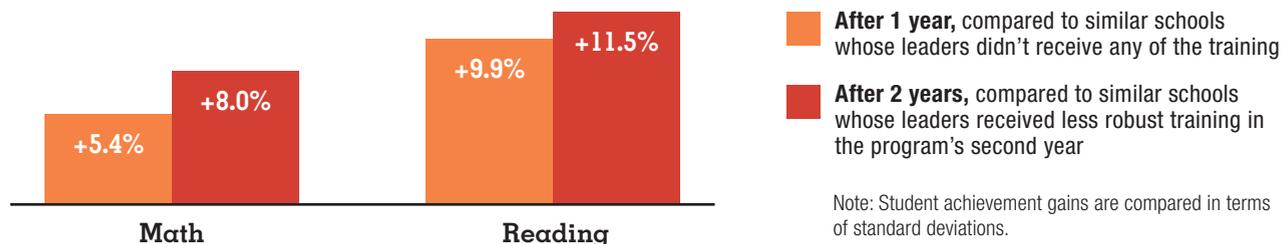
The peer observations should be used to provide specific feedback so teachers can learn from them in a constructive, not a punitive, way.

Jane Viau, 11th and 12th Grade Statistics and Microeconomics Teacher, New York, New York

**Chicago.** Another study looked at the impact of observations of teacher performance on teacher effectiveness. Because of budget reductions, the district cut back on training principals to conduct observations, which enabled researchers from the University of Chicago Consortium on School Reform and the University of Pennsylvania to isolate the effects of the training. The researchers found that, after one year, the first group, whose principals received robust observer training, made greater gains than the second group, which hadn't at that point received any training. After two years, the first group made even greater gains than the second, which by then had received the less robust version of training. The study is notable because schools were randomly assigned into each cohort, allowing for better comparison.

### In Chicago: Robust Observer Training Translates into Greater Student Learning

Difference in student achievement gains of schools led by administrators who received robust training vs. gains in comparison schools



Source: *Seeing It Clearly: Improving Observer Training for Better Feedback and Better Teaching*

**Tennessee.** Over the past two years, the Tennessee Department of Education has been working with researchers from Brown and Stanford universities to develop an approach for using teacher evaluation to drive instructional improvement. Evaluation Partnerships sends school principals suggested lists of matches to pair a teacher with low evaluation scores in a particular area of instructional practice with another teacher in the same school who has demonstrated success in that area. The teachers are encouraged to work together throughout the year on a voluntary basis to improve instructional skills. In pilot studies, teachers appreciated the partnership, and participation increased teacher evaluation scores and student achievement significantly across whole schools.

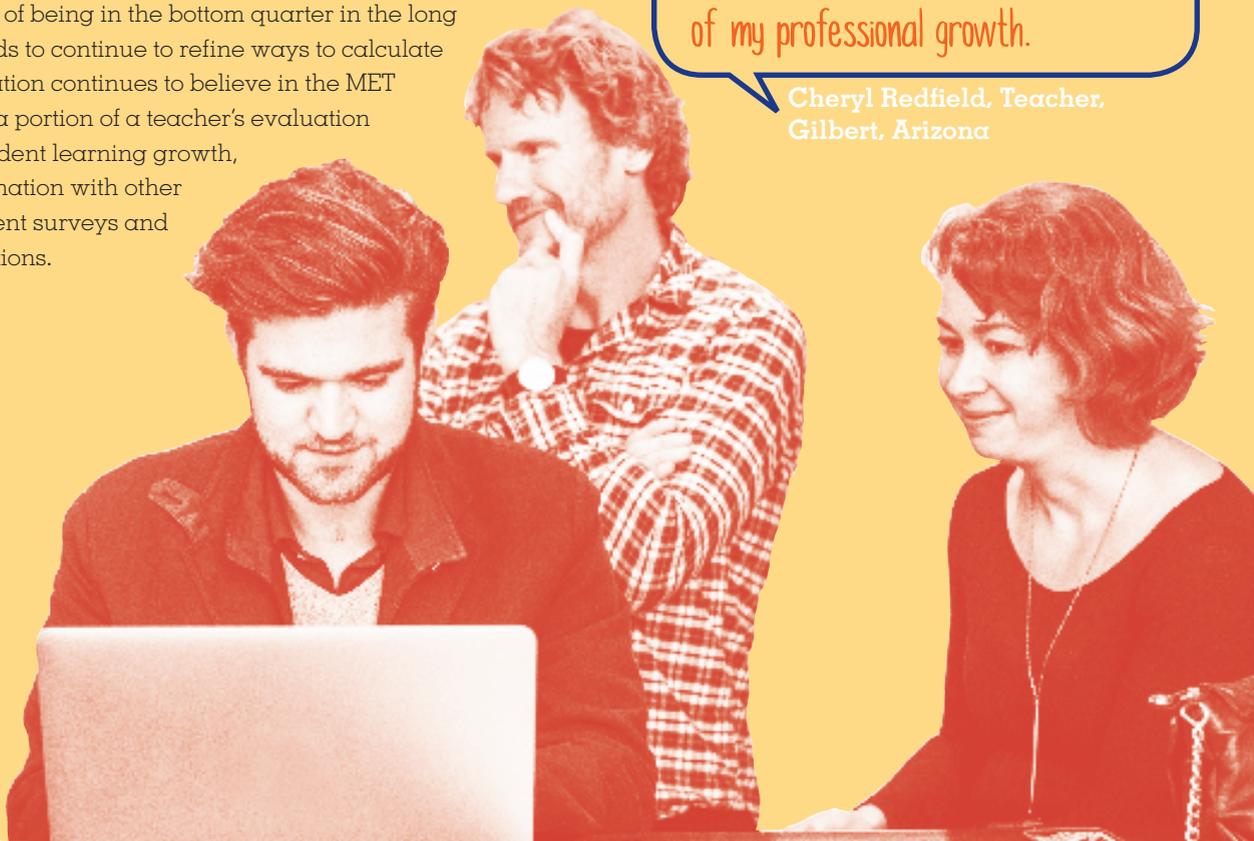
## Value-Added Measures

Teachers aren't opposed to student learning being part of their evaluation system. But they value the growth they help students achieve while they are in their classroom. Among the only available tools for calculating that growth over time are "value-added" measures. Such measures estimate a teacher's contribution to student achievement gains by controlling for students' prior achievement and background. Value-added measures do fluctuate from year to year. But in important follow-up research to the MET project, a [2014 study](#) by Thomas J. Kane and Douglas O. Staiger found that these measures are considerably more stable over time, so measures that analyze teacher performance over multiple years are a more useful yardstick.

Notably, the researchers report that if a teacher is in the bottom 10 percent on the annual value-added measure in any one year, he/she has a 67 percent probability of being in the bottom quarter in the long term. The field needs to continue to refine ways to calculate growth. The foundation continues to believe in the MET principle that only a portion of a teacher's evaluation should focus on student learning growth, in balanced combination with other measures like student surveys and classroom observations.

I believe ongoing peer observation should be as much a part of these measures as administrative observation (maybe even more). A peer's regular observation provides immediate feedback I can use to impact students' learning. Observations then serve as a record of my professional growth.

Cheryl Redfield, Teacher,  
Gilbert, Arizona



# What We Still Need to Know

**While the MET project and other research have identified the characteristics of effective evaluation and feedback systems, there are still gaps in the knowledge base about effective professional development that would enable teachers to improve their practice once they have received appropriate feedback.**

A **recent study of three districts** by TNTP found no evidence that any particular kind of professional development led to improvement. Some teachers had improved their practice, but the professional development they had received followed no discernible pattern.

We are learning, though, about the elements associated with professional growth. Research that the foundation has supported on integrating quality professional learning into the daily lives of teachers in four of the world's highest-performing systems—British Columbia, Hong Kong, Shanghai, and Singapore—as well as investments in a set of U.S. districts pursuing innovative professional development approaches and in teacher networks, point to the following crucial drivers for effective teacher learning:

- ➔ A continuous cycle of improvement grounded in student work;
- ➔ Strong teacher leaders at the school and system levels to guide professional learning;
- ➔ Making the quality of professional learning part of the accountability framework for school systems, including using data on student performance, the quality of instruction, and teacher learning to drive improvements; and
- ➔ Creating time for professional learning.

The last section of this report focuses on professional development challenges.

A forthcoming evaluation of the **Innovative Professional Development (iPD) Challenge** might provide further answers on how districts can better support teacher learning.

# What We SUGGEST

Early research and real-world examples from those making progress suggest several strategies worth pursuing ... and avoiding.

## CONSIDER

- **Making sure that the primary goal of feedback and evaluation is to improve instruction.** The MET research found that it is possible to develop a set of objective measures that can identify great teachers whose classroom practices cause their students to learn more. The study identified teachers who produced higher-than-average student achievement gains on state tests compared to other teachers in the same school, grade, and subject. These measures (classroom observations, student surveys, and student test score gains) helped accurately predict teachers' future performance.
- **Using multiple measures to assess instruction, including observations, student surveys, and student achievement growth.** MET also found that a balanced combination of multiple, different measures provides a more reliable and consistent gauge of teaching effectiveness over time than one that is focused primarily on a single measure, such as student achievement gains. Using multiple measures can prevent unintentional distortion that could lead teachers to over-focus on a single area of teaching to the exclusion of others, hoping to improve their scores. Multiple measures also can make it more difficult to manipulate or game the system.
- **Listening to the students.** A well-designed student perception survey can provide cost-effective and reliable information about components of teaching practice that predict student learning, according to MET.
- **Using multiple observers.** Accurate classroom observation ratings for teachers require two or more observations by individuals who are trained and certified, according to MET. Having multiple observers produces more reliable results than having a single observer rate multiple lessons. Although administrators tended to score teachers from their own schools higher, their rankings were similar to the teacher rankings made by evaluators from outside the school.
- **Investing what's necessary.** An evaluation by RAND/AIR found that the initial costs of establishing a fair and valid teacher evaluation system, based on multiple measures, should be 0.5 percent of a district's annual operating budget (or 1.3 percent of teacher compensation and benefits). For ongoing costs, districts should plan to spend about 0.25 percent of their budget. That's not much compared to the importance of a system's teaching talent.
- **Combining the above with more aggressive efforts to attract and retain teaching talent,** such as hiring early, providing mentors and coaches for new teachers, and matching teachers and schools through a mutual consent process.

# AVOID

- ❌ **Using any single measure in isolation.**
- ❌ **Publicly releasing individual teacher value-added data or evaluation results.**
- ❌ **Creating new assessments for non-tested grades and subjects** that are not reliable and valid and that cannot strongly inform instructional improvement.
- ❌ **Assuming that you need to create measures and instruments from scratch** or assuming that you can do this without investing resources in building people's understanding and capabilities. Check out some of the new observation tools and student surveys available, such as those from TNTP, Panorama, Tripod, My Student Survey, and YouthTruth.
- ❌ **Removing human judgment from decision-making processes** by over-relying on algorithms or formulas to make determinations about teaching performance.
- ❌ **Focusing only on teaching effectiveness without also addressing effectiveness at all levels of the school system** (i.e., principals, coaches, principal supervisors, human resources, curriculum, etc.).
- ❌ **Making instructional improvement a priority without establishing plans to measure factors that inform improvement in your system,** such as the quality of teacher practices, the rigor of student work, and the effectiveness of professional development and instructional leadership.

I ask students what they like and don't like about a lesson, what's confusing and what didn't make sense. From there, everything gets tweaked based on their answers. It's my favorite way of thinking about whether something is effective or not.

Tina Krekoukis, Middle School Math Teacher, Brooklyn, New York



# The Role of Instructional TOOLS FOR TEACHERS

**Like all expert craftspeople, teachers have relied on tools to support their instruction—from textbooks to tests to model lessons. Some tools are closely tied to the standards that students are expected to reach, while others are more generic. Some tools guide teachers each step of the way; others provide general guidance and allow teachers to be more flexible in using them.**

The Common Core State Standards created a demand for new tools. The standards generated new expectations for what students should know and be able to do and, in many ways, called for substantial shifts from the way most teachers taught mathematics and English language arts. All students, for example, are now expected to demonstrate procedural fluency, conceptual understanding, and problem-solving ability in mathematics and to demonstrate the ability to draw evidence from texts to support conclusions in writing. Previous materials might not have supported teachers in those areas.

Anticipating that demand, the foundation made a major investment in the development and implementation of teacher-designed tools to support instruction tied to college-ready standards through the [Literacy Design Collaborative \(LDC\)](#) and [Mathematics Design Collaborative \(MDC\)](#).

States and other organizations also have developed materials for teachers to support implementation of the new standards. For example, the New York State Education Department developed [EngageNY](#), a web site that contains curriculum and instructional resources, performance tasks, and videos on Common Core teaching, among other resources. These free resources have been downloaded more than 20 million times.

# The Importance of High-Quality, Flexible Tools

In the early days of standards-based reform, states were reluctant to develop curriculum resources or lessons for teachers. They believed that they could set standards for student learning and free teachers to use their own expertise and knowledge about their students to develop the curriculum and instructional materials they needed to enable students to meet the standards.

While that approach properly honored teachers' professionalism, research shows that it was not successful. Many teachers did not have the time to develop their own materials. Instead, they relied on the materials that were available, which may or may not have been tied to the standards they were expected to teach or to their students' needs.

The LDC and MDC were designed to help close this gap and to emphasize critical thinking and problem solving. Developed by teachers, for teachers, the collaboratives offer a set of instructional modules, tasks, and formative assessment tools to structure lessons and assess student progress toward the standards.

The LDC templates are not scripted curricula. Rather, they allow teachers to use whatever materials they think are appropriate while guiding them through student activities and products that meet challenging standards. The collaboratives enabled groups of teachers to refine and improve the tools over time.

The tools also were designed to be flexible. They can be used any time of year, in short lessons or longer-term lessons, and with almost any curriculum. The LDC modules, for example, can be used to develop students' literacy skills using science, history, or literature content. Teachers can choose almost any topic to develop a lesson using the tools, and the templates guide them through activities that will develop students' reading, writing, and thinking abilities. The MDC modules, similarly, can be used with any mathematics content to enable students to develop conceptual understanding by solving complex problems.

Teaching with the Common Core and LDC takes significant thought, planning, and practice. But the changes I have seen in myself as a professional and in my students motivate me to continue using these tools purposefully in my teaching.

**Kathy Thiebes, High School Social Studies Teacher, Portland, Oregon**

# What We Know: Encouraging Early Results

In an effort to monitor their efficacy, the foundation has sponsored both qualitative and quantitative research on the LDC and MDC. As part of the **quantitative study**, Research for Action, a Philadelphia-based organization, conducted a survey of teachers in districts that had used the tools extensively. It found that 82 percent of teachers said that the LDC tools led them to raise their expectations for student writing, 77 percent said the tools helped them differentiate instruction to more effectively engage students, and 80 percent said their students' writing quality has improved.

**Research by the National Center for Research on Evaluation, Student Standards, and Testing (CRESST)** found that participating in the LDC had "small but statistically significant positive effects on students' reading performance" on Kentucky's K-PREP exam. Participating in the MDC also had positive initial effects: researchers found a small but statistically significant positive effect on

## Both LDC and MDC led to statistically significant learning gains for students.



Students in LDC classrooms gained, on average, an **additional 2.2 months of learning for reading** compared to a matched comparison group.



Students in MDC classrooms gained on average, an **additional 4.6 months of learning in math** compared to a matched comparison group.

LDC is the "thing" that changed the way I think about teaching, and the impact it has had on my professional growth is tremendous. I finally understood the value of things, like creating clear writing prompts that are meaningful and relevant, planning instruction that teaches students valuable literacy skills leading to the prompts, and using student products to determine next steps for instruction and enrichment. LDC also opened my eyes to the extreme value of discipline-specific literacy for all students.

Sheila Banks, Jefferson Parish, Louisiana

Source: *Tools for Teachers*, by Teachers: The Literacy Design Collaborative and the Math Design Collaborative

Kentucky students' scores on the state PLAN test in algebra. While these effects are small, they are still encouraging given that the participating teachers had limited experience with the tools, and the students only used them for a small period of time (the equivalent of eight to 12 days of the school year in math, and four to six weeks in literacy.) These translate into learning gains that are the equivalent of 2.2 months of reading/writing instruction and 4.6 months of mathematics instruction.

Teachers participating in the LDC and MDC also reported that they liked the new approaches and felt that they had benefited their students. But the CRESST study also noted that the teachers believe that there is still room for improvement; both LDC and MDC teachers reported that their students struggled to reach the performance levels expected in the higher-level assignments. The CRESST findings suggest that teachers need more help with design and implementation of the modules in LDC and the classroom challenges in MDC, as well as with how to effectively incorporate the new approaches into daily classroom instruction. And the tools do not replace teachers' need for a full-year curriculum aligned with the standards.

## Flexible Tools

While traditional textbook publishers have been slow to align their materials to the Common Core State Standards, millions of teachers and school leaders are increasingly finding instructional tools online. Many digital content and tool providers have succeeded in building large user bases with very little marketing, using "freemium" models. This rapid growth shows how eager teachers are for good Common Core-aligned tools and resources that support student learning. Below are some examples.

### LITERACY

**Newsela** already has 4 million student and teacher users combined. An entire class can read the same non-fiction content in either English or Spanish at one of five different levels of difficulty.

**ThinkCERCA** is an application focused on improving writing. It is widely used in Chicago schools and has over 300,000 subscribers.

### MATH

**Khan Academy** offers practice exercises, instructional videos and a personalized learning dashboard that empower learners to study at their own pace in and outside of the classroom. Khan math missions guide learners from kindergarten to calculus using adaptive technology that identifies strengths and learning gaps.

**Dreambox Learning** offers a K–8 math curriculum that adapts to each student's unique needs, with lessons in both Spanish and English. Dreambox has more than 1.5 million student users and 75,000 K–8 teacher users in all 50 states.

### MULTI-SUBJECT

**Better Lesson** has more than 500,000 registered teachers. Through its Master Teacher Projects, it recruits the highest-performing teachers in the country to share the full suite of their effective practice (all of their lessons and best practices).

**LearnZillion** started as a site for sharing high-quality, teacher-generated lesson plans and is expanding to full courseware in K–8 math and literacy, tied to formative assessment and teacher professional development. It has a user base of more than 800,000 teachers.

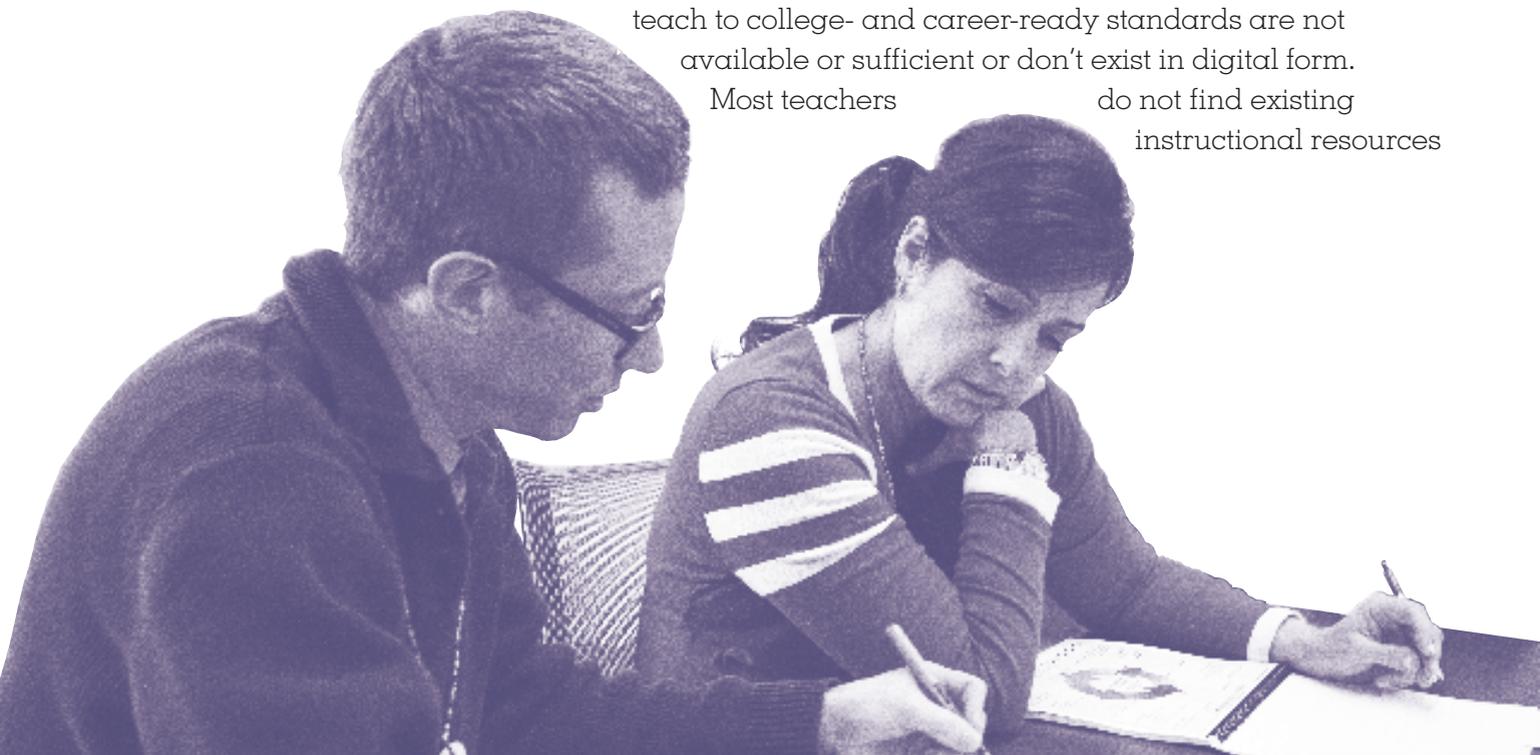
# What We Still Need to Know

## How can we accelerate the development and dissemination of practical instructional tools that teachers eagerly want?

In 2014, the foundation surveyed more than 3,100 teachers to learn about the digital instructional tools that are necessary for student success. The responding teachers said that they are looking for resources that can help their students meet the new Common Core State Standards and Next Generation Science Standards, and they are optimistic that digital instructional tools can be useful to meet these goals.

But they also said that gaps still remain. Some types of products teachers need for specific instructional purposes are simply not available; in other cases, products are available, but teachers aren't using them or don't perceive them to be effective. In particular, teachers said that the resources to help educators teach to college- and career-ready standards are not available or sufficient or don't exist in digital form.

Most teachers do not find existing instructional resources



(both digital and non-digital) sufficient to teach to the new standards, and less than half report that resources are both sufficient and available in digital form. The four areas with the greatest deficiency of instructional resources that are sufficient to teach to the standards and available in digital form are:

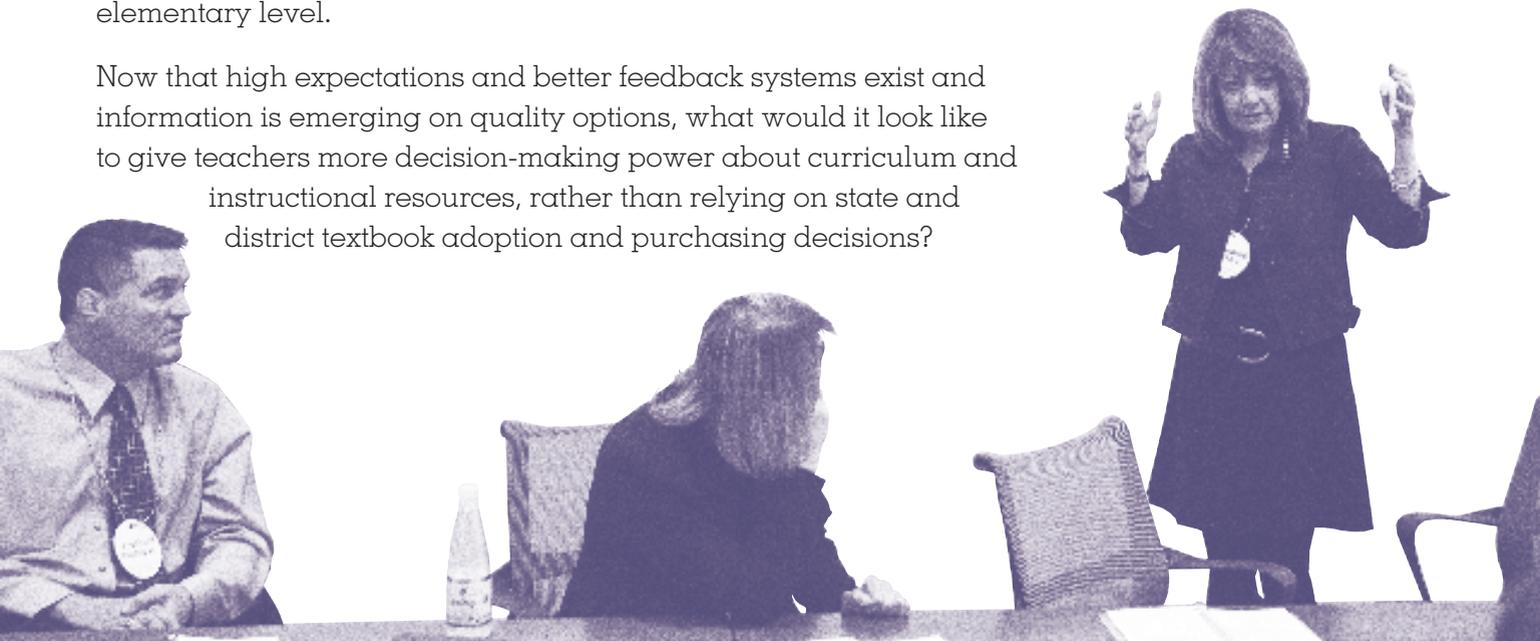
- ➔ Elementary school English language arts (grades K–5);
- ➔ High school mathematics (grades 9–12);
- ➔ Middle school social studies (grades 6–8); and
- ➔ All grade levels in science.

In mathematics in particular, as grade levels increase, teachers are less likely to have available, sufficient, and digital resources, with high school mathematics teachers reporting the biggest gaps. The opposite trend was seen in English language arts, where the biggest gaps were reported at the elementary level.

Now that high expectations and better feedback systems exist and information is emerging on quality options, what would it look like to give teachers more decision-making power about curriculum and instructional resources, rather than relying on state and district textbook adoption and purchasing decisions?

We need a better curriculum to implement the Common Core and better support implementing the curriculum all the way through. How are we going to navigate our way as teachers through these new ways of teaching and not burn out?

**Christine Snyder,**  
High School English  
Instructional Coach,  
Los Angeles, California



# What We SUGGEST

Early research and real-world examples from those making progress suggest several strategies worth pursuing ... and avoiding.

## CONSIDER

- ➕ **Using quality resources.** Provide teachers with teacher-designed and tested tools and resources, like those from LDC and MDC or Open Education Resource (OER) curricula like **EngageNY** that embody the Common Core State Standards and allow teachers to experience what the rigor of instructional practice and student learning aligned to the standards look like.
- ➕ **Joining forces with other districts** through the Council of the Great City Schools and other organizations to insist on common criteria and RFP language for curriculum purchasing. Pay attention to claims of Common Core State Standards alignment from publishers, and verify those claims against reliable ratings information.
- ➕ **Using legitimate ratings information** from **EdReports**, **Graphite**, **Navigator**, and the **Fordham Institute** as a major factor in curriculum selection. If in doubt, access **EngageNY** curriculum resources as a guide.
- ➕ **Working with state policymakers.** Insist that state sanctioned curriculum lists only have high-quality aligned options. Consider replicating successful processes used in states like Louisiana and Tennessee, including by incorporating tools like **EQuIP**, a rubric developed by Achieve and partner states.
- ➕ **Engaging school leaders/teachers.** Access high-quality OER through **EngageNY** and **Creative Commons**. Begin to build libraries of digital curriculum resources that can be mixed and matched to supplement learning informed by quality ratings from Graphite.org and other online libraries of vetted materials (e.g., **EQuIP's Exemplars**, **Illustrative Mathematics' task bank**, **Student Achievement Partners**, **Better Lesson**, **LearnZillion**, **Bloomboard**, **sharemylesson**, **Teacherspayteachers**).
- ➕ **Giving teachers access to best-in-class tools and resources** by putting more purchasing and decision making power about instructional tools in their hands.

## AVOID

- ⊗ **Continuing old textbook selection processes** that are based on idiosyncratic criteria from large committees or that rely on state adoption processes to filter for quality. These result in the lowest common denominator and "everything but the kitchen sink."
- ⊗ **Adopting a misaligned curriculum because it is cheaper** or comes with free technology hardware. One option: the OER content available through EngageNY is free and valid.
- ⊗ **Using outdated district procurement processes** that offer no opportunities for teacher choice and flexibility.

# Putting It All TOGETHER

**High standards, high-quality feedback on instruction, and useful tools to support teachers are all vital components of systems that ensure high levels of learning for all students. All of these elements support teachers, and the evidence for all of them is strong.**

But these elements work most powerfully if they are *all* in place. High standards, by themselves, do not improve teaching if teachers lack aligned tools that support instruction. Likewise, teachers cannot improve their own instruction if they lack feedback on their methods and their impact on students. When the three elements come together, powerful teaching results.

Yet making sure the components work together can be challenging for schools and school districts. Most states have adopted high standards for student performance. But as the research on instructional materials shows, producing textbooks and other materials that truly match what the



standards expect is a difficult task, and most publishers and private organizations are still working at it. The same is true for other instructional tools—they need to be vetted carefully to ensure that they match the standards’ expectations. Feedback tools, too, need to be monitored to ensure that teachers are truly evaluated on instructional practices that lead to achieving the standards. Professional development needs to be strengthened across the board. A growing number of districts are having success using teacher leaders as coaches and to lead teams of other teachers to improve instruction. But we need to know what they are doing and how ... and then do a better job of spreading the word.

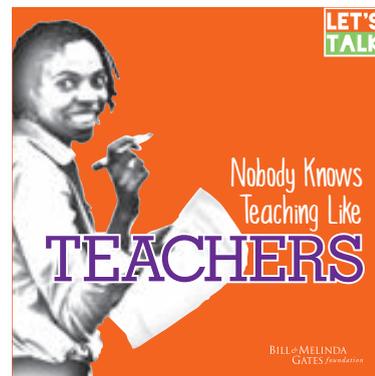
The good news is that the knowledge base is growing. There is much more information available now about what makes tools and feedback and support systems effective and how they can help teachers improve their instruction.

## Use Teachers as Designers

One lesson the research makes clear is the importance of teachers codesigning the tools. Teachers are the experts! They know how to make things work in the classroom and know what tools and feedback will make them more effective. And they know the high bar that their students can meet and the standards they can expect to reach.

Too often, policies and materials are developed and imposed on teachers without their involvement. These efforts seldom work. They do not reflect what teachers know about instruction, and teachers ultimately abandon them in favor of materials that better reflect their understanding of teaching and learning. Equally important, teachers are more likely to use materials that they had a hand in developing.

The challenge for states, districts, and private organizations, then, is to engage teachers in developing and implementing high standards, high-quality feedback systems, and high-quality instructional tools and supports. Only then will the promise of high levels of learning for all students become reality.



In the first in our series of LET'S TALK guides, teachers weigh in on the importance of engagement.

# The Next Challenge: **PROFESSIONAL LEARNING** to Support High-Quality Instruction

**To meet the challenge of improving instruction, teachers need support for continual learning.**

Of course, as leaders of a learning profession, teachers are continually seeking to educate themselves on how to improve their practice. They study the latest research, work with colleagues to develop and test ideas for lessons, and pore over data on student learning to identify patterns and areas to focus on.

In the past, however, much of the professional learning districts and schools provided for teachers did little to help them improve their practice. Much of it involved lectures and workshops from national experts that had little to do with teachers' immediate needs. A **recent report** by TNTP yielded a sobering finding: In studying three large urban districts, the organization found little evidence that professional learning made a difference in teacher performance. Many teachers did not improve their practice, and among those who did, there was little evidence that the professional learning they engaged in produced



that improvement. In a nation that spends an estimated \$18 billion per year on professional learning, that result is unacceptable.

Responding to the report, **a group of educators convened by Learning Forward concluded** that the United States lacks a system for professional learning. Such a system must be focused on professional learning that produces genuine improvement in instruction and student learning. And the goal must be to identify effective practices and bring them to scale.

Teachers value quality professional development and have strong beliefs about what it should look like, according to the **Teachers Know Best research**, supported by the foundation.

That research also shows that when teachers have a say in choosing what kind of support they need, they are much more satisfied.



## What Teachers Say: The Ideal Professional Development Experience

Despite their dissatisfaction with much current professional development (PD), teachers value its potential as a tool to help them plan and improve instruction. They describe the ideal professional learning experience as:

### RELEVANT

“It looks different in every context. It has to be personalized.”

### INTERACTIVE

“The best ... usually involve hands-on strategies for the teacher to actually participate in.”

### DELIVERED BY SOMEONE WHO UNDERSTANDS MY EXPERIENCE

“The best PD has been when a teacher shows me what has revolutionized their classroom ... anything that a fellow teacher who is still in the classroom [presents] beats out anything else.”

“All teacher driven, with administration only there to support teacher needs. Top down would be gone.”

### SUSTAINED OVER TIME

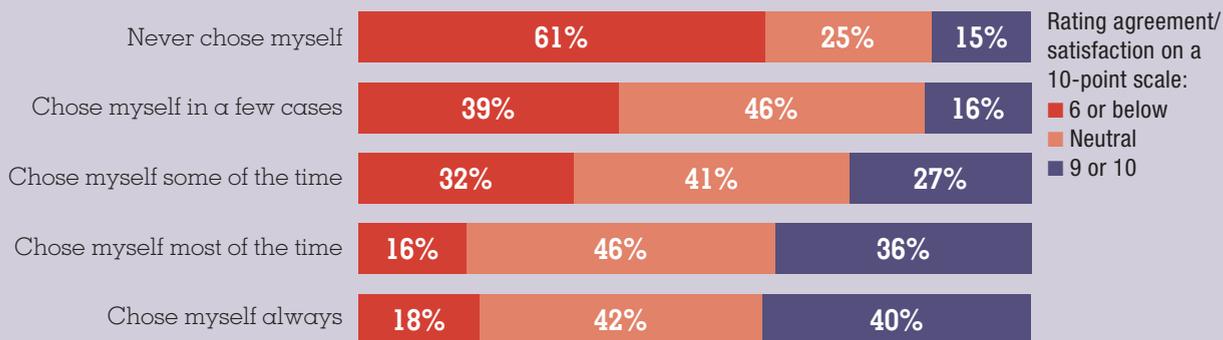
“PD needs to be something that you keep working on for a semester or a year.”

### TREATS TEACHERS LIKE PROFESSIONALS

“PD should treat us as adults, rather than children.”

Source: *Teachers Know Best: Teachers' Views on Professional Development*

## Teachers with more choice report much higher satisfaction with their most recent professional development experience



Question text: "Thinking about ALL of the PD activities you participated in over the past 12 months to what extent did you choose them yourself vs. having them chosen by someone else? Overall, how satisfied are you with the last [format] you participated in for professional development?" Ns: Overall, 973; Never chose myself, 175; Always chose myself, 93

Source: *Teachers Know Best: Teachers' Views on Professional Development*

The foundation recognizes that professional learning is essential for improvement and has set out to build a framework for effective professional learning that can underlie its efforts moving forward. The framework identifies six conditions for an effective system:

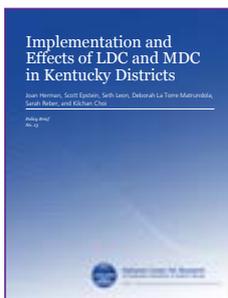
- Teachers have access to clear expectations for student learning and teacher practice.
- Teachers have access to the time, expertise, and tools needed for professional growth.
- Teachers lead and have access to a balance of individual and collective learning opportunities.
- Teachers have access to growth cultures that encourage trust and provide safety for teachers to take risks.
- Teachers have access to professional learning that is coherent and aligned across the individual teacher, school, and district levels.
- Teachers have access to professional learning that supports continual improvement.

Building a system based on these principles will not be easy. But it is an essential step if the United States is to make good on the promise that all students will graduate from high school college-ready. That promise is vital to the future of the nation and to each student. The opportunity to make good on it is at hand. Now it's time for the nation to redeem it.

# Hungry for MORE?

Here are some of the tools that the foundation has supported.

## LITERACY AND MATHEMATICS DESIGN COLLABORATIVES



### Implementation and Effects of LDC and MDC in Kentucky Districts

This brief summarizes early evidence on the success of two tools that Kentucky districts have used to support their teachers' transition to these more demanding goals: Literacy Design Collaborative and Mathematics Design Collaborative.



Written by a Literacy Design Collaborative teacher to describe how the collaborative changed her practice



### Tools for Teachers, by Teachers: The Literacy Design Collaborative and the Math Design Collaborative

This brief shares lessons learned during the first five years of the foundation's work with these collaboratives, highlighting the impact of the tools on teaching and learning.



Written by a Mathematics Design Collaborative teacher to describe the reaction she had after trying the first classroom challenge

## TEACHER LEADERSHIP



### Common Assignment Study

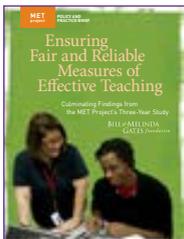
Participating teachers from Colorado and Kentucky are developing and teaching two instructional units a year that exemplify the content knowledge and skills embedded in their state standards. The units contain common performance tasks for students.



### ECET<sup>2</sup>

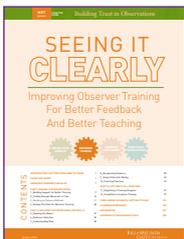
These teacher-led national and regional convenings and online community focus on teacher leadership, collaboration, and innovative instructional practices.

## MEASURES OF EFFECTIVE TEACHING (MET) SERIES AND RELATED RESEARCH



### Ensuring Fair and Reliable Measures of Effective Teaching

This brief provides the culminating findings of the three-year research project involving about 3,000 teachers.



### Seeing It Clearly: Improving Observer Training for Better Feedback and Better Teaching

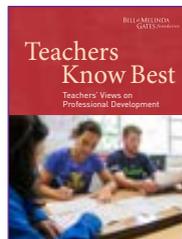
This detailed (100 pages-plus) guide is one in a series of MET project practice guides for states, districts, and technical assistance providers on how to build and improve a trustworthy observation system.



### How Much Are Districts Spending to Implement Teacher Evaluation Systems?

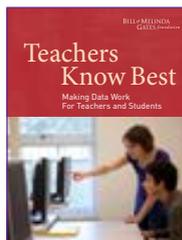
This report presents case studies of the efforts by three school districts—Hillsborough County Public Schools (Florida), Memphis City Schools, and Pittsburgh Public Schools—to launch, implement, and operate new teacher evaluation systems as part of a larger reform effort.

## TEACHERS KNOW BEST SERIES



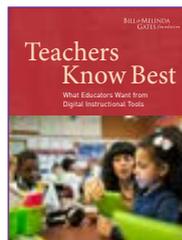
### Teachers' Views on Professional Development

More than 1,300 stakeholders weighed in on how to improve professional development.



### Making Data Work for Teachers and Students

We asked more than 4,600 teachers about the digital tools available to help teachers collect and use data to tailor and improve instruction for individual students.



### What Educators Want from Digital Instructional Tools

We asked more than 3,100 educators what kinds of digital instructional tools are essential to help their students be prepared for college and careers in the 21st century.

**For more resources, [click here.](#)**

It's no longer the memorize-and-spit-back model of learning. Teaching to the Common Core standards is going to give us a whole nation of better thinkers. But it requires making a shift.

Melodee Olson, Middle School  
Science and Latin Teacher,  
Phoenix, Arizona

