

## OPINION

### Teaching to the Common Core by Design, Not Accident

**The Gates Foundation's substantial investment in developing the Common Core State Standards now depends on translating big ideas into practices that teachers can and will use.**

**By Vicki Phillips and Carina Wong, *Phi Delta Kappan***

After years of hard work by state leaders, educators, and other advocates, the Common Core State Standards in English language arts and mathematics are final, and 45 states and the District of Columbia have officially adopted them.

But getting from standards on paper to the deep changes required in practice will be a significant challenge. For example, the literacy standards for grades 6 and above assume that history, social studies, science, and technical teachers—not just English teachers—will use their content expertise to help students read, write, speak, and listen using the language of their disciplines. Yet, historically, “literacy” has been the sole domain of English language arts classes. The math standards ask teachers to focus and spend more time on fewer, more important things so students can build conceptual understanding, achieve procedural skill and fluency, and learn how to transfer what they know to solve problems in and out of the math classroom.

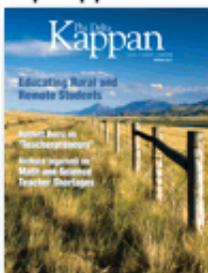
As strong believers in clear, consistent standards that focus on what students need to be prepared for college and careers, the Bill & Melinda Gates Foundation was proud to support the Common Core work. We also understood that there was a window of opportunity to support teachers in turning the standards from policy into practice between the time that states adopt the standards and when new summative assessments come on line in 2014-15. In particular, we wanted to give teachers a good starting place to prepare for the new assessments and to begin shifting instruction to make the standards real in classrooms. Based on our experiences as classroom teachers and as state and

[← Back to Story](#)

## EDUCATION WEEK Multi-User LICENSING



Enjoy Kappan articles?  
Keep Kappan coming!



Join PDK today!  
**PDK**

**UNLOCK  
ESSENTIAL  
CONTENT**  
Open your  
team's potential

**+ Click here for more info**

district administrators, we knew we wanted to invest in really well-designed tools and supports that could find the right balance between encouraging teachers' creativity and giving them enough guidance to ensure quality. And we wanted to ground these tools in evidence about what really powerful teaching aligned with the Common Core looks like.

Between 2009 and 2011, the College-Ready Work team at the Gates Foundation committed more than \$76 million in direct charitable expenditures to support teachers in implementing the Common Core. We funded projects that included the design of new tools to help teachers enact the standards in their classrooms, like our \$5.9-million investment at the University of California, Berkeley to create a set of Classroom Challenges in Mathematics to help teachers enact formative assessments aligned to the Common Core. We've partnered with states and districts interested in piloting these new designs, making grants to a diverse set of districts ranging from Hillsborough, Fla. (\$350,000) to the state of Kentucky (\$1 million). We also have partnerships to help disseminate Common Core aligned tools and practices to educators.

Curriculum Management  
Training from PDK

- 3-Minute Walk-Through
- Curriculum Audit Training

[Learn more >](#)

We've been working with designers, subject-matter specialists, education leaders, and most importantly, classroom teachers to develop, field test, and refine tools that resonate with teachers based on a set of "design principles."

Most of the tools being developed follow the same basic structure that essentially reverses the traditional, "I do, we do, you do" model that many teachers use.

First, we wanted to focus on the pattern of behavior we were trying to address. In math, that meant helping teachers give students immediate feedback on their mathematical understanding. In literacy, it meant supporting social studies and science teachers to teach literacy skills they hadn't been expected to teach previously and helping ELA teachers focus on areas that haven't always been priorities, like informational texts and writing other than narrative.

Second, we wanted simple elegance: tools that were flexible, slender, and able to slip into a teacher's instruction without requiring them to read through hundreds of pages of implementation manuals. We think the simplicity of the math and literacy tools is one of the draws.

Third, we wanted to honor the creative tension in teaching. We didn't want to tell teachers what to do lock, stock, and barrel nor did we want something so open that the resulting lessons would be more likely to lack rigor or fidelity to the standards. We knew that some teachers would produce high-quality lessons given the standards and wanted to create a starting place for those teachers who didn't know what they should be doing differently.

Fourth, we wanted teachers as cocreators and codesigners of these tools from the start.

Fifth, we wanted the tools we developed to evolve and improve over time based on the wisdom of practice.

Sixth, we wanted to point teachers toward the big changes required by the Common Core and begin to shift the existing curriculum even before the new summative assessments come online.

All that led us to the notion of well-designed tasks and templates that would draw on the essential elements of standards-based teaching. The literacy templates provide a common framework and language for teachers, while allowing them to paint in the details based on their own context, content field, knowledge, and experience. The math tasks are more like vitamin shots that teachers can insert in their curriculum as they see fit to gauge students' understanding and their ability to

apply what they're learning.

Think of it like printmaking. A printmaker starts by carving a linoleum block. Then, she does the first print, steps back, assesses what she likes and doesn't like about the pattern, and adjusts the carving accordingly. We wanted to create the same iterative process in collaboration with teachers.

In math, we partnered with the Shell Centre at the University of Nottingham in England and U-C, Berkeley. Many of the people there are former engineers and experts in math. The goal was to develop tools that would give students ongoing feedback through formative assessment tasks that zero in on students' understanding of key concepts and their ability to apply math skills to unfamiliar problems. In literacy, we invested in a team called the Literacy Design Collaborative, which included former teachers, principals, and literacy specialists.

By December 2010, the foundation's partners were working in 17 school districts to codevelop and pilot the tools, along with a rigorous evaluation process to ensure they work. We are now working with five states and over 30 districts/networks.

### **Literacy Collaborative**

"I was a little surprised too, because I thought the students would be better writers than they are. When you give students a topic and let them research it, a lot of teachers take it for granted that they're able to pull out the important pieces of information, that they can organize that information, that they can write a well-structured paper. But I found that a lot of kids—even some of my higher-level kids—were weak in those areas. They really needed to be guided every step of the way." — Sean Houseknecht, 7th-grade science teacher

The goal for the Literacy Design Collaborative (LDC) was to develop ongoing quality assignments and tools that can be embedded across all instructional areas so ELA, science, and social studies teachers can all help their students meet the literacy standards.

The standards emphasize nonfiction reading as well as writing across disciplines and clear analysis based on evidence from demanding texts—skills students need to succeed in college and the workplace.

At the heart of the LDC materials are broadly applicable "template tasks." These templates allow teachers to create classroom assignments that incorporate the literacy standards, regardless of the specific subject area they teach, the curriculum being used, or the teacher's instructional style.

Getting from standards on paper to the deep changes required in practice will be a significant challenge.

These assignments require students to read, analyze, and comprehend the kinds of texts specified by the Common Core State Standards and then write cogent arguments, explanations, or narratives. Each template (there are currently 29) includes a prompt that allows teachers to

### **Learning From the Work**

In the course of this work, we've learned some critical lessons that we hope will be instructive to approaching the development of teacher tools and supports more broadly.

#### **Lesson #1: Engage teachers early.**

The tools and supports will only be useful if they're codeveloped, tested, and refined by teachers themselves. Teachers cocreated the materials, tested tools in their classrooms, and offered real-time feedback to designers about what worked and what didn't. And teachers could get the necessary support to use the tools in a meaningful and useful way.

#### **Lesson #2: Teachers need to talk to each other.**

We saw this firsthand at a June 2011 meeting in New Orleans called Unleashing Group Genius. It was a gathering of teachers, district and state administrators, design and implementation partners, and

fill in the blanks with their choice of texts to be read, content to be addressed, and writing to be produced.

The templates allow for common scoring based on a common scoring rubric aligned to the Common Core State Standards. Template tasks may also include additions (Level 2 and Level 3 modifications) that can be used or omitted to vary the task demands. Using the templates, teachers can create assignments that typically take students two to four weeks to complete.

Here, for example, is the template for a task requiring students to defend an argument based on evidence from informational texts. It addresses the standards for reading (argumentation) and for writing (argumentation):

- Task 1. After researching \_\_\_\_ (informational texts) on \_\_\_\_ (content), write \_\_\_\_ (essay or substitute) that argues your position on \_\_\_\_ (content). Support your position with evidence from your research.
  - Level 2. Be sure to acknowledge competing views.
  - Level 3. Give examples from past or current events or issues to illustrate and clarify your position.
- (Argumentation/Analysis)

You can see how a science, social studies, or ELA teacher could use this template to produce a quality piece of writing. For example, Jenny Beasley, a 7th-grade ELA teacher at Meece Middle School in Somerset, Ky., had previously struggled with her state's standards that require students to "evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims," and to "follow rules for collegial discussions."

Using the template, Beasley assigned her middle school students the following task: "After researching articles on mountaintop removal mining. Support your position with evidence from your research."

Each student chose whether to argue in support of or opposition to this form of mining, a major issue in their community, and each wrote an argument replete with research to make their cases. Then, a Kentucky state representative who owns a coal mine was invited into the class to make a case for mountaintop removal mining. The next day, the class was joined by a member of Kentuckians for The Commonwealth, a group that has been fighting mountaintop removal mining at the state

researchers who had worked on developing some of these curriculum tools.

They shared their successes and challenges, debated ways to improve upon the already strong tools that are being piloted, and discussed the kinds of collaborative platforms and killer apps they will need in the future. They also talked about the practical supports they need, such as identifying the right texts for the literacy tasks. And they gave examples of how they're drawing on each other's capacity to scale the work. One thing was clear—the enthusiasm was contagious.

"Teachers crave the chance to work together. As one high school English teacher said of the peer collaboration, I get so many ideas from my classroom just sitting around talking about our modules. We steal and take from each other. I wish there was a way we could do that as teachers all the time."

To give more teachers this kind of opportunity, the Gates Foundation has launched a web site called My Group Genius ([www.mygroupgenius.org](http://www.mygroupgenius.org)) where teachers can find tools from the literacy and math design collaboratives and have conversations with each other about their experiences. Over time, we hope that the conversation will sustain itself without much foundation involvement.

### **Lesson #3: These tools and supports must go viral.**

At some point, we'll have to let these tools and supports leave our hands, and see how far they go. We're exploring ways to facilitate the spread and scaling of what works through partnerships with other organizations and through technology.

We've also invested in an online "module creator" in the literacy collaborative to make sure the main design elements from the Literacy Design Collaborative (LDC) are called out for teachers as they create their modules. The module creator software walks users step by step through the LDC

and national level for years. After each speaker, the students asked informed, pointed questions about the presentations. They engaged in complex, provocative, informed discussions. They had learned about the importance of differentiating fact and unbiased analysis from analysis based on ideology. They were thinking, analyzing, struggling, and making tough decisions.

As Beasley later wrote to a district administrator, "This is real teaching and learning. I am so tired and so energized at the same time."

### **Math Collaborative**

"I like the idea of the students being pushed to be learners and not just sitting there and given answers and information to regurgitate ... we can change the way students learn. That was the most exciting thing." —  
Math teacher

The math collaborative works a little differently because the challenges of math instruction are different. One of our partners, math education expert Ann Shannon, tells a story that serves as a great analogy to how we've been teaching math for too long.

As she prepared to drive from Owensboro to Louisville, Ky., she punched the address into her GPS, and, a few hours later, she arrived in Louisville.

But later, as she was thinking about her journey, she realized that she had no idea exactly how she got from one place to the other. She didn't know what roads she had taken, what towns she had passed through, or even whether she had gone north, south, east, or west. She had just dutifully followed the procedure spit out by the GPS.

We didn't want to tell teachers what to do lock, stock, and barrel nor did we want something so open that the resulting lessons would be more likely to lack rigor or fidelity to the standards.

As one of the teachers she worked with later said, too often, we just GPS our students through math. That's why the new math standards are designed to ensure that students go beyond formulas to really gain a conceptual understanding of the subject and how to apply the concepts with precision.

But, as with the literacy standards, even the excellent new math standards aren't enough to help teachers succeed. So, the foundation worked with the Shell Centre to produce a series of classroom challenges, or formative assessment lessons, for grades 6 through 10, on conceptual understanding and problem solving.

These lessons can be used with any curriculum a teacher already uses and are built around a set of rich tasks connected to the standards. The point of these lessons is to engage students in a productive struggle with the mathematics essential for college readiness.

Most of the tools being developed follow the same basic structure that essentially reverses the traditional, "I do, we do, you do" model that many teachers use. Instead of the teacher opening the lesson with direct instruction, teachers give students an initial assessment task, a problem to work out individually. This task gives teachers a sense of how much students grasp certain math

framework to ensure teachers don't get off course by forcing them to focus on key questions: Is the template task robust enough for two to three weeks of work? Will students be developing the necessary skills to succeed on the task? Does the instructional plan pass muster, so students can succeed on a series of mini-tasks culminating in the larger student assignment? And, finally, would the student work be of high enough quality to meet Common Core standards, and is the scoring solid in relation to benchmark work?

As we explore how to take these tools more digital, however, there are still many outstanding questions.

— Vicki Phillips and Carina Wong

concepts.

Then, students talk about their answers and engage in collaborative activities to go deeper into the mathematics of the initial assignment. They might work in small groups, engage in discussion, or examine each other's work. In this way, they take responsibility for their own learning. Teachers provide feedback to move their students' learning forward.

Next, students engage in a whole-class discussion designed to pull the lesson together. The teacher can learn more about how students are doing and have an opportunity to provide more feedback. Finally, students return to the initial assessment and see if they can improve their work with the new insights they've gained from the lesson.

This feedback process is the equivalent of the template system we created in literacy. The Shell Centre is producing 20 tasks per year for grades 6-10. As New York City high school math teacher Michael Stevens said, "The process is very powerful. It gets the curriculum monkey off my back and gives me the courage and confidence to take the time for students to explore deeper mathematical concepts."

The math collaborative is developing the kinds of supports that help teachers identify student stumbling blocks and then change their instruction to address those challenges. The work starts with an important premise: Evidence shows that good formative assessment increases the effectiveness of teaching. The formative assessment is almost like a biopsy that can help diagnose a problem. When teachers can continually gather student data in real time, diagnose problems, and then adjust their instruction to meet student needs, student performance improves. Learning improves.

### **Early Findings**

Research for Action (RFA) conducted an interim report on the development and piloting of these collaborative teacher tools. RFA surveyed and interviewed teachers, principals, and district administrators, observed classrooms, and observed professional development. Their preliminary findings are extremely promising.

First, teachers love the tools. More than 90% of surveyed teachers in the pilot sites believed the literacy tools were a good fit for their curriculum, and most said the tools gave them new information about where students were in their learning. Teachers said that the tools were effective and that they saw increased student engagement with them.

Science and social studies teachers in particular appreciated the opportunity to integrate writing into their classes. "As a science teacher, I've had no formal training in how to teach the research process," said Alex Schubert, a 7th-grade science teacher at Elizabethtown (Pa.) Area Middle School. "I mean, I can spot grammar mistakes and spelling errors, no problem, but as far as the structure of a paper, I don't have what I feel would be a solid enough background for teaching those strategies. But the way the tasks are written, the idea is that you can just plug and play with different topics."

All the math teachers surveyed said the tools were accessible to all students, regardless of their math skill level, whether struggling or advanced. As one geometry teacher said, "I think there is just an entry level in these activities for everyone. Everyone is able to get started and do something and then build on that to do something else. Then, they build at their own rate, and I think that shows." They also reported that the formative assessment lessons gave them a strong and engaging model for teaching math to high school students.

Second, teachers using both sets of tools like the professional development—and they want more.

They were particularly interested in getting more assistance to differentiate their instruction for different types of students like English language learners, or those who are gifted or who have special needs. They also placed great value on the time to collaborate with peers.

Third, principals and district leaders are also seeing positive change. As one principal said, "Teachers are more excited, because students are more excited."

The tools also give leaders a concrete way to help teachers improve their instruction for the benefit of students. One district leader said that during the first year, many teachers were "really struggling with the way they taught and the things they were asked to do and it was painful, for lack of the better term. But you could almost see them switching over ... it took days ... for them to start thinking differently."

Michelle Buroker, a chemistry teacher at Scott High School in Kenton County, Ky., agrees. "I was incredibly skeptical about how the modules would fit into my instruction. I wanted something authentic, not another afterthought," she said. "And I found out that these modules are rigorous, but not in a ridiculously hard way, rather, in a way that asks students to apply what they have learned."

### **Will the Tools Work?**

So far, we have strong anecdotal evidence that the tools and supports are working well. But over time, we will need evidence that is more empirical than anecdotal. We'll need data, and we'll need evidence that student outcomes in test scores are improving.

It's been exciting to learn that teachers feel as though their students are rising to these higher expectations. "I think that this approach has allowed me to raise expectations of students—and I've seen them meet those expectations," said Holly Particelli, 8th-grade science teacher at the Elizabethtown middle school. "For example, did I think that they could write good five-paragraph science essays? Probably not. I shortchanged them in my thinking. So it was good for me to see that. It's enabled me to push the students, and it's shown me that they can do it."

We expect to have quality data when we get results from new assessments based on the Common Core. In the meantime, however, teachers should not wait to align their instruction to the Common Core. Our experience with the Literacy Design Collaborative and the Math Collaborative has convinced us that carefully designed supports incorporating teacher expertise can prepare both students and teachers for the exciting teaching and learning ahead.

---

**VICKI PHILLIPS** is director of education and **CARINA WONG** is deputy director, College-Ready Work for the Bill & Melinda Gates Foundation.

All articles published in *Phi Delta Kappan* are protected by copyright. For permission to use or reproduce Kappan articles, please e-mail [kappan@pdkintl.org](mailto:kappan@pdkintl.org).

**Education Week Editor's Note:** A grant from the Bill & Melinda Gates Foundation helps support Education Week's coverage of K-12 business and innovation.