# Foreword

The initiative to establish Common Core standards in language arts and mathematics is the most comprehensive and coordinated effort to utilize curriculum to impact student achievement that has ever been undertaken in the United States. Forty-six states and the District of Columbia have endorsed the Common Core standards as a key strategy for helping students learn at higher levels.

The impetus for the Common Core came from the growing recognition that the current system of allowing each state to establish its own standards, assessments, and benchmarks for proficiency resulted in enormous disparity in the educational experiences of students across the United States. The rigor of curriculum those students pursue, the quality and degree of difficulty of the assessments they take, and the standards for defining their success have varied dramatically from state to state.

The Common Core seems to offer the perfect remedy to the huge discrepancies that exist in the current system. It will replace the myriad state standards with one well-defined set of rigorous standards designed to provide all students with access to a high-quality curriculum. The assessments that will ultimately accompany the Common Core will be more challenging and will establish higher expectations for student achievement than existing state assessments. The economy of scale that results from this coordinated national initiative will eliminate the inevitable redundancies, duplication of effort, and waste that occur when each state is creating its own standards and assessment. The resulting savings can be used to support student learning rather than merely measure it.

I am among those who believe that creating the Common Core is an important step in the right direction for U.S. education. I am concerned, however, that not enough attention is being paid to an important fact—merely adopting a new curriculum, even a challenging curriculum, will not improve student learning.

There is a long history of failed attempts to raise student achievement in mathematics through curriculum reform—from the National Defense Act of 1958 passed in response to the Russian launching of *Sputnik*, to the reforms spurred by the *Nation at Risk* report of 1983 (U.S. Department of Education), to the *Curriculum and Evaluation Standards for School Mathematics* the National Council of Teachers of Mathematics (NCTM) adopted in 1989, to the mandate for each state to establish mathematics standards with the passage of the No Child Left Behind Act in 2002, to NCTM's K–8 *Curriculum Focal Points* and *Focus in High School Mathematics Reasoning and Sense Making* articulated in 2006 and 2009, respectively. What has become increasingly apparent is that even a well-articulated rigorous curriculum will have little impact on student achievement unless attention is paid to the implementation of the curriculum and the quality of instruction with which it is taught. As Dylan Wiliam (2011) puts it succinctly, "Pedagogy trumps curriculum" (p. 13).

A 2012 study of the Brooking Institute found that there was no correlation between the quality of the mathematics standards adopted by the various states and actual student achievement in mathematics. The benchmark established for proficiency in mathematics by the various states was also unrelated to student achievement. Students in states with a well-articulated, rigorous curriculum and high benchmarks for proficiency fared no better than students from states with inferior curriculum standards and easier assessments on the National Assessment of Educational Progress. In fact, the study found that the differences in student achievement in mathematics were four to five times higher between schools *within* the same state than it was *between* the states. As the study concluded, "The empirical evidence suggests that the Common Core will have little effect on American students' achievement. The nation will have to look elsewhere for ways to improve its schools" (Loveless, 2012, p. 14).

The reason that *Common Core Mathematics in a PLC at Work™*, *High School* is so powerful is precisely because it looks beyond the adoption of curriculum to improve student learning. To their great credit, the authors recognize several critical elements that have historically been overlooked in curriculum reform efforts.

1. There is a difference between the *intended* curriculum an external authority establishes (whether it is a national commission, a state department of education, or the central office) and the *implemented* curriculum that individual teachers teach in the classroom each day.
2. Students cannot learn what they are not taught. Therefore, to ensure all students have the opportunity to acquire the knowledge, skills, and understanding essential to their success in mathematics, a school must take steps to ensure all students have access to a guaranteed *implemented* mathematics curriculum. Teachers must acquire a shared, deep understanding of the curriculum and its intended goals. Even more importantly, they must be committed to teaching that curriculum.
3. The quality of the instruction students receive each day is the most important factor in their learning of mathematics. No curriculum will compensate for weak and ineffective teaching. Therefore, the school must address the challenge of providing more good teaching in more classrooms more of the time.
4. Providing more good teaching in more classrooms more of the time requires high-quality professional development for those who deliver mathematics instruction. This professional development must be ongoing rather than sporadic. It must be embedded in the routine practices of the school, occurring in the workplace rather than relying on workshops. It must be collective and team based rather than individualistic. It must focus directly and relentlessly on student achievement rather than adult activities.

Very importantly, the authors recognize that helping all students learn at high levels in mathematics requires educators to build their collective capacity to transform their

schools into high-performing professional learning communities. This book offers so much more than a review of the Common Core standards in mathematics. It articulates the specific steps a school must take to move from a culture focused on covering mathematics curriculum to a culture fixated on each student's learning, from a culture of teacher isolation to a culture of purposeful collaboration and collective responsibility, from a culture where assessment is used as a tool to prove what students have learned to a culture where assessment is used to *improve* student learning, and from a culture where evidence of student learning is used primarily to assign grades to a culture where evidence of student learning is used to inform and improve professional practice.

One of the great strengths of this book is its specificity. The authors do more than present the questions that drive the work of teams in a PLC; they go into considerable detail about how the teams should address those questions. They provide practical strategies to help teams work their way through questions such as:

1. How will we determine the knowledge, skills, and understanding each student must acquire as a result of this unit?
2. How will we know if our students are learning?
3. How will we respond when at the end of the unit some students have not yet demonstrated proficiency?
4. How can we enrich and extend the learning for those students who are proficient?
5. How can we use the evidence of student learning to inform and improve our own professional practice?

Each chapter's Extending My Understanding section is another valuable aspect of this book. The questions for reflection and the recommended activities will help educators begin to think like members of a true professional learning community.

In short, this book is exactly what mathematics educators need as they face the challenge of implementing the Common Core curriculum. It merges the potential of the Common Core to be a positive force for student learning with the power of the Professional Learning Community at Work process to provide an invaluable framework for school improvement. It offers much more than a book about curriculum. The authors draw on their expertise in mathematics content, good instruction, and the complexity of school change to present the comprehensive support educators will need as they face the challenge of bringing the Common Core to life in their schools and classrooms.

There will undoubtedly be many books written about implementing the Common Core, but I am certain that none of them will offer more constructive, practical, and insightful recommendations for creating the conditions that lead to higher levels of learning for both students and educators. It warrants the careful consideration and collective dialogue of all mathematics educators in the United States.

—Richard DuFour, Educational Author and Consultant