PREPARE FOR MORE REALISTIC

The potential drop in reported state proficiency rates when the new CCSSM assessments are implemented will require adjusted expectations.

Matthew R. Larson and Steven Leinwand

Educators in forty-five states and the District of Columbia are hard at work interpreting and implementing the Common Core State Standards for Mathematics (CCSSM) (CCSSI 2010). This work typically involves teacher participation in professional development activities focused on developing an understanding of the content standards as well as the standards for mathematical practice. Across the country, educators are also analyzing the model content frameworks, item prototypes, and achievement level descriptors being released by the two national assessment consortia: The Partnership for Assessment of Readiness for College and Careers (PARCC) and Smarter Balanced Assessment Consortium (SBAC). Although mathematics teachers still have to prepare their students for current state assessments, many educators are beginning to ask—with justifiable anxiety, given the consequences attached to student performance—how their students might perform when the new assessments are first administered in the 2014–15 school year.

PREDICTING PARCC AND SBAC RESULTS

Results will ultimately depend on a variety of factors, including how PARCC and SBAC performance standards required for proficiency will be set. However, there is strong evidence that educators nationwide should expect significant reductions in the percentage of students deemed proficient when compared with the proficiency rates currently reported by states using their own assessments.

A case in point is the nagging concern that during the No Child Left Behind era nearly all states set low proficiency standards, as evidenced by the discrepancy between the proficiency percentage reported on the National Assessment of Education Progress (NAEP) and those reported by individual states. For example, in 2009 only Massachusetts had a state standard for proficient performance in grade 8 mathematics equivalent to the NAEP standard (Bandeira de Mello 2011, p. 13) (see **fig. 1**). Every other state's standard for proficient performance on its state assessment is lower than the NAEP standard and results in somewhat to significantly higher reported rates of proficiency.

A report prepared by the American Institutes for Research (AIR) (Phillips 2010) compared the mathematics proficiency standards in each state with the international benchmark used in the Trends in International Mathematics and Science Study (TIMSS). Comparing current state proficiency standards with international benchmarks is instructive because one criterion for the development of the Common Core State Standards for

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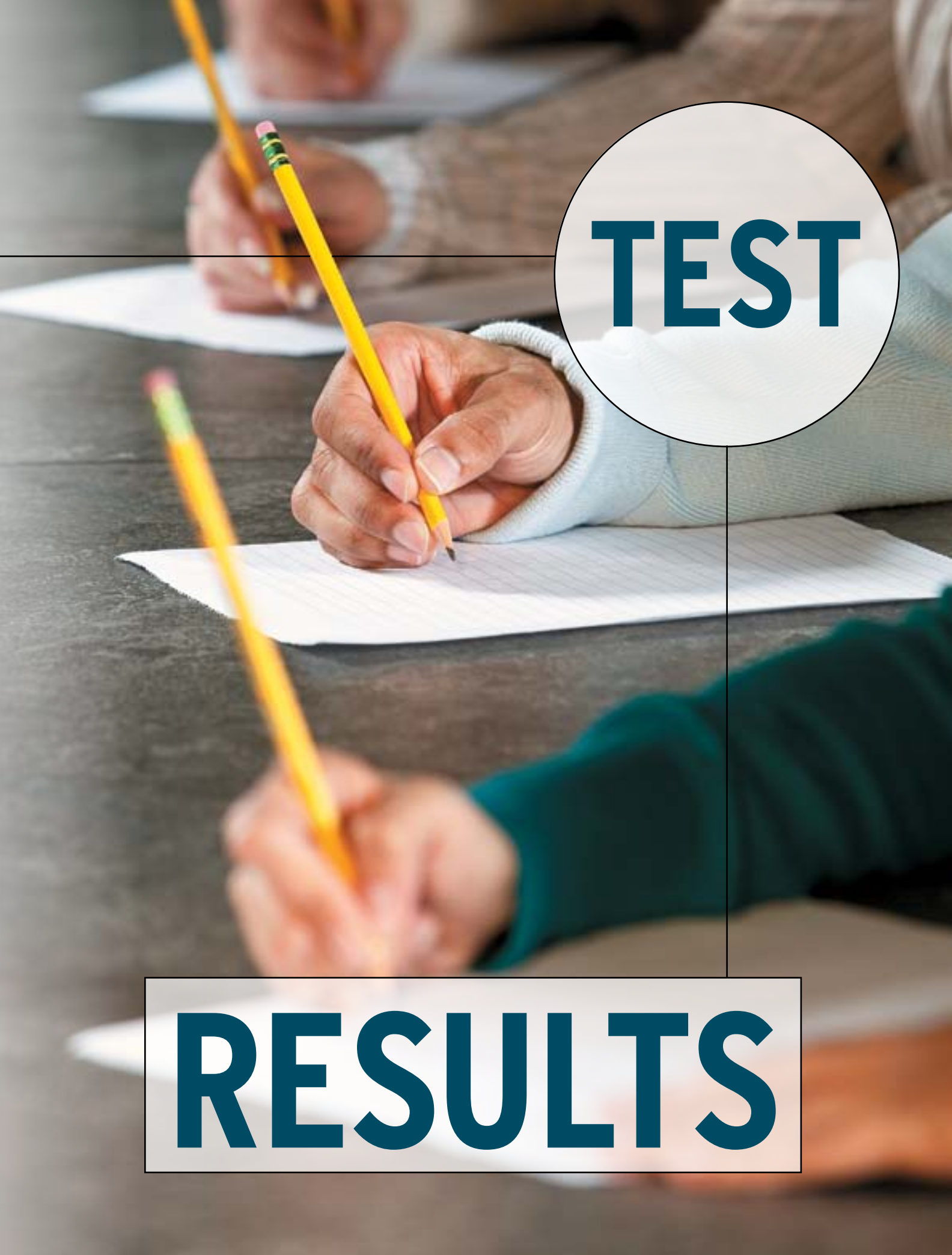
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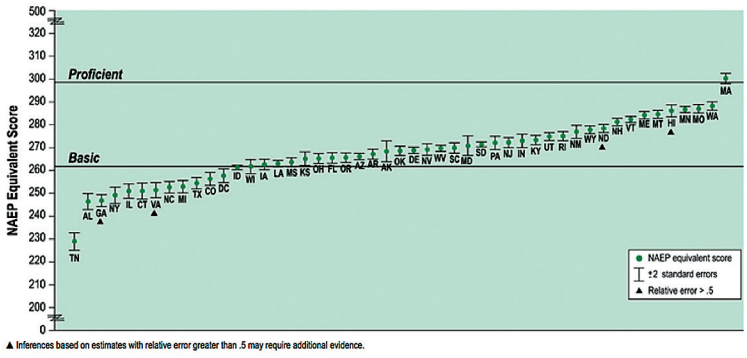

Source: Bandeira de Mello (2011)

Fig. 1 This graph shows NAEP scale equivalents of state grade 8 mathematics standards for proficient performance by state in 2009.

Mathematics was that the standards be internationally benchmarked.

Eighth-grade mathematics proficiency as reported by states under the requirements of No Child Left Behind in 2007 can be compared with an estimate of percentage proficient if the states had used a high but not advanced internationally benchmarked common standard. This comparison showed that the mean eighth-grade state mathematics proficiency rate would drop from 62 percent to 29 percent and would drop in each of the forty-eight states included in the study with the exception of Massachusetts and South Carolina (Phillips 2010).

During the 2011–12 school year, Kentucky administered its new K-PREP statewide assessment, which was designed to be representative of the Common Core State Standards. At the middle school level in 2010–11, Kentucky reported 65 percent of students proficient in mathematics, but that figure dropped to 40.6 percent proficient under the new assessment in 2011–12 (Ujifusa 2012). This drop is similar to the mean estimated drop in the AIR report and, taken together with the other statistics, may indicate that most states will experience a significant drop in their mathematics proficiency rates when the new assessments are implemented.

PREPARING FOR THE LIKELIHOOD OF LOWER PROFICIENCY RATES

Given these expected and, in some cases, significant drops in the percentage of students deemed proficient, educators at the state, district, and building levels must begin the process of preparing stakeholders for this likelihood to mitigate the panic and overreaction that might occur when results of the new assessments are released for the first time in 2015. Many school and district leaders have neither the time nor the subject-matter expertise to anticipate and appreciate the nuances of these new results. Thus, classroom mathematics teachers need to be aware of and clearly understand the reasons behind the potential drop in proficiency rates and begin to educate their school leaders about this likelihood.

What should the key messages be? The critical message, no matter how difficult it is for many people to accept, is this: Most states have set relatively low performance standards, and current proficiency rates reported under No Child Left Behind do not adequately reflect what students need to know and be able to do in mathematics to compete internationally (Phillips 2010). Exacerbating the problem is the fact that most state assessments under No Child Left Behind have a propensity to assess mathematical skills in isolation at a low-level depth of knowledge (Herman and Linn 2013) and have not assessed mathematical processes in addition to content as outlined in the CCSSM. In other words, current state proficiency rates under No Child Left Behind in many states inflate students' true level of mathematical understanding when measured against an international performance standard that defines mathematical proficiency in terms of connected mathematical understandings and processes in addition to procedural skills. We need to confront this fact and move forward from a new but more realistic baseline of student achievement.

Additional actions and important messages that need to be developed, communicated, and taken include the following:

- Comparisons to past scores on state assessments will have little value. Results of PARCC and SBAC will reflect the performance of a new assessment, with new standards, set to a higher performance standard.
- States and school districts that have adopted teacher evaluation systems tied to student performance on assessments will need to consider that any decrease in the percentage of proficient students as measured by PARCC or SBAC is likely due to a change in the performance standard under the new assessments and not to a decrease in instructional effectiveness.
- Because many states still use paper-and-pencil assessments and the new assessments will be administered through a digital platform, mathematics teachers will need to provide students with experience taking mathematics assessments online to prevent any potential drop in performance due to the change in the assessment platform.
- School boards and the public need to understand that improvement in proficiency rates under the new assessments will take time. Meaningful improvement in teaching and learning is a complex endeavor that will take time and support to achieve.
- Because it will take time to implement the CCSSM and for students to develop the habits

of mind outlined therein, mathematics teachers cannot wait until 2014–15 to begin the process. It can begin immediately, and if teachers work collaboratively to interpret and implement the CCSSM (Kanold and Larson 2012), mathematics teachers can successfully begin the process even before schools or districts begin formal implementation efforts.

- Adopting higher content standards and setting a higher performance standard are essential if we are to give our students the opportunity to learn the mathematics that they need to become productive members of society and to compete in a marketplace that is increasingly global in nature.
- Parents will need to hold their students "to the highest standards that push them out of their comfort zones" (Friedman and Mandelbaum 2011, p. 124). Unless students engage in meaningful mathematical work, both inside and outside school, the goals of higher achievement under the CCSSM will be impossible to achieve. Mathematics teachers can immediately begin to share this message with parents through curriculum nights, parent-teacher conferences, and newsletters.

PERSEVERANCE ISN'T JUST FOR STUDENTS

If the results of the new assessments of the CCSSM result in lower proficiency rates, many knee-jerk reactions may occur. It will be easy for teachers to become discouraged. It will be easy for school administrators to overreact and implement counterproductive practices in an effort to find quick fixes. It will be easy for school board members to remove school leaders to demonstrate that they are taking action. It will be easy for parents to believe that their child's school is failing. It will be easy for business leaders to use lower scores to point to the "failure" of the educational system. And it will be easy for policymakers to declare the CCSSM a failure. None of these reactions is likely to be helpful or to improve the teaching and learning of mathematics.

Standard for Mathematical Practice 1 states that students will "make sense of problems and persevere in solving them" (CCSSI 2010, p. 6). The standards for mathematical practice are processes that students are expected to engage in as they learn the content standards. However, we need to recognize that to achieve the vision of higher mathematics achievement for all students, perseverance will be a critical attribute not only for students but also for the entire system. All those involved in educating students and with an interest in their success will need the perseverance and courage to accept that previous scores were artificially high and work from a new baseline to support better teaching and learning for all students.

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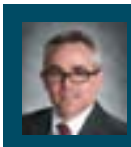

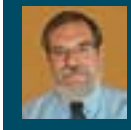

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