

InFOCUS

Ira Nichols-Barrer, Kate Place, Erin Dillon, and Brian Gill

For Massachusetts Students, PARCC and MCAS Exams Comparable in Predicting College Outcomes

As Massachusetts considers whether to reform its statewide educational assessments, a new study from Mathematica Policy Research shows that students' scores on the state's existing high school assessment predict college performance as well as scores on a new test that is under review. This new test is already in use in several states and is being considered for statewide adoption in Massachusetts. However, the study also showed that the new test sets a higher performance standard in mathematics than the state's current test.

BACKGROUND

The newly developed assessments of the Partnership for Assessment of Readiness for College and Careers (PARCC), designed to align with Common Core standards, were administered in 11 states and the District of Columbia in spring 2015. Mathematica's study is the first to examine the extent to which PARCC assessments succeed in one of their major goals: identifying students who are ready for college. We compared how high school PARCC exams and the existing Massachusetts Comprehensive Assessment System (MCAS) predict college grades and placement in remedial courses. Mathematica's study was commissioned by the state to inform its decision about whether to continue using MCAS exams or to switch to the PARCC's set of tests.

For each test, we examined whether high-scoring students perform better in college than low-scoring students. We also reviewed whether students who met designated standards on each test—"college ready" for PARCC and "proficient" for MCAS—needed remedial coursework and assessed their ability to earn "B" grades in college. Results show that, overall, scores on both exams predict college performance equally well. However, in math, PARCC's "college-ready"

standard is higher than MCAS's "proficient" standard, making it a better predictor of college students' ability to earn "B" grades.

KEY FINDINGS

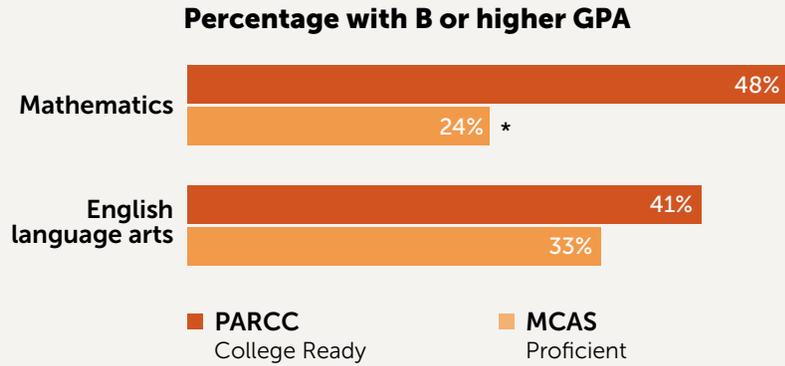
- **PARCC and MCAS scores have a similar ability to predict college grades, comparable to the predictive ability of SAT scores.**
- **Scores on PARCC and MCAS are also equally predictive of enrollment in remedial courses during the first year of college.**

Although the scores are equally predictive, the two assessments differ in the degree to which their designated mathematics standards predict college performance and the need for remedial math, with PARCC outperforming MCAS. Forty-eight percent of students meeting PARCC's "college-ready" standard in math have an average GPA equal to a "B" or higher in their first year of college. However, only 24 percent of students who meet the MCAS "proficient" standard perform at this level in college. In the PARCC college-ready group, the average GPA is 2.81, compared with an average GPA of 2.39 in

the MCAS “proficient” group. PARCC’s college-ready students were also 11 percentage points less likely to have been assigned to remedial classes

than the MCAS’s “proficient” students. In English language arts, the two standards are not statistically distinguishable.

GPA, by MCAS “proficient” and PARCC “college-ready” performance designations



* Indicates that the difference between tests is statistically significant

Adopt PARCC **Refine MCAS “proficient” designation in math**

Massachusetts could align test-performance standards with college readiness in one of two ways

CONSIDERATIONS FOR POLICYMAKERS

Given that scores on both tests predict college performance equally well, but PARCC’s “college-ready” designation is a better predictor of college outcomes in math, policymakers in Massachusetts have two options for ensuring that their high school test-performance standards can accurately predict college success. They could adopt the PARCC exam outright, or they could refine the MCAS designation by setting a higher score threshold for students to be considered “college ready” in math. In making this decision, the state should consider factors that fall outside the scope of this study, including differences in the content and structure of the exams, which may affect instructional practices as teachers and students prepare for the tests. They should also consider any differences in the level of resources required to administer and score the tests.

By using Mathematica’s rigorous empirical study to help make this decision, Massachusetts provides a model for other states weighing difficult choices about whether to keep or reform statewide educational assessments. Prior to the creation of PARCC, Massachusetts had some of

the highest standards in the country. In most states, the older standards are likely to fall far short of PARCC standards.

ABOUT THE STUDY

This study is the first to provide rigorous evidence, through a random assignment design, demonstrating whether new Common Core-aligned assessments can accurately predict which students are prepared for college. The Massachusetts Executive Office of Education commissioned the study to provide timely, reliable data to inform decisions about whether to change the state’s assessment system. To explore this issue, at the end of the 2014–2015 academic year, state education agencies coordinated the administration of 10th-grade MCAS assessments and corresponding PARCC assessments, for a sample of 866 first-year college students at 11 public institutions of higher education in Massachusetts. By testing first-year students who are already in college, the study provides immediate evidence regarding the college outcomes of students relative to their performance on the MCAS or PARCC exams.

