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Modernizing College Course Placement by Using Multiple Measures

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Community colleges and open-access, four-year colleges admit nearly everyone who applies and enroll students with a wide range of skills. Many of these colleges run developmental education programs for students who they determine are underprepared for college-level courses. More than two-thirds of community college students are assigned to developmental courses — sometimes for several semesters.[1]

Colleges have traditionally placed students into developmental or college-level courses based on their performance on standardized math and English tests. Research, however, shows that these placement tests are poor predictors of student grades in college-level math and English courses, resulting in inappropriate placements for as many as a third of test-takers. Most of the misplaced students are assigned to developmental courses that are below their ability level and whose credits do not count toward a degree, creating an unnecessary hurdle on their path to graduation and potentially blocking their progress altogether.[2]

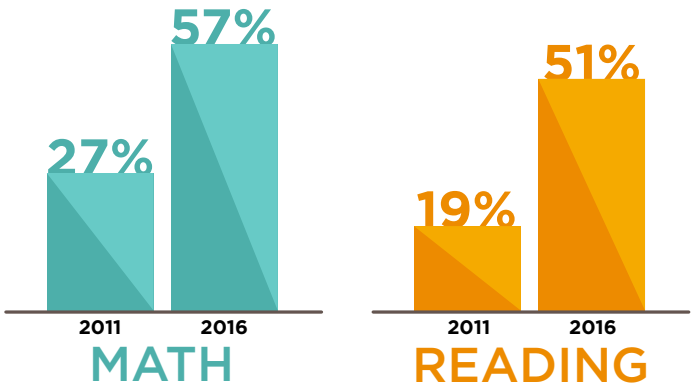
Studies have found that alternative measures — particularly high school GPA, which captures both academic strengths and relevant nonacademic characteristics like motivation — offer substantially better predictions of which students will succeed in college-level courses.[3] Combining high school GPA with other measures — including state graduation tests, SAT or ACT scores, writing assessments, high school transcript information, years since high school graduation and noncognitive assessments — yields more predictive power, according to the studies. This approach, often called **multiple measures placement**, is gaining traction at colleges across the country: More than half of community colleges now use measures besides tests to place students into developmental or college-level courses.[4]

More than half of public, two-year colleges now use measures other than standardized placement tests — often high school GPA — to determine whether students need developmental math and English courses.

Research shows that students assessed using multiple measures are more likely to be assigned to and pass college-level courses than students assessed using standardized tests alone.

A growing number of states — including **California**, **Minnesota** and **North Carolina** — are establishing policies mandating the use of multiple measures for course placement.

Use of Placement Measures Other Than Standardized Tests at Public, Two-Year Colleges



Source: Center for the Analysis of Postsecondary Readiness.

Preliminary research on multiple measures placement systems suggests they enable colleges to make more accurate decisions about which students need developmental education. As a result, more students are being assigned to college-level math and English, passing those courses and moving ahead with their programs of study more quickly — saving time and tuition money in the process.

Types of Multiple Measures Placement Systems

Multiple measures placement systems can be used to decide if a student belongs in developmental or college-level courses, what level of developmental course is appropriate and what types of additional supports students might need. Colleges that want to implement multiple measures placement systems have various types to choose from, starting with simple waiver systems and progressing in complexity to placement algorithms that weight each measure by its predictive power.[5]

In **waiver systems**, students are exempt from placement tests if they demonstrate college readiness through their high school GPA or SAT, ACT or other test scores.

Colleges using **decision rules** define a series of steps for evaluating information on students to decide where to place them. The rules may differ depending on how many years a student has been out of high school, the student's intended major or other factors. Decision rules that apply only to students testing within a particular score range on traditional placement tests are called **decision bands**.

With **placement formulas or algorithms**, colleges weight a set of data points, combine them in a formula that produces a prediction of a student's likelihood of success in a course and set a cutoff score for college readiness.

The Evidence for Multiple Measures Placement

Changing assessment and placement systems is a major undertaking for colleges, not least because the traditional standardized tests are relatively inexpensive and easy to use. But for colleges, college systems and states looking to maximize their students' chances of graduation, multiple measures placement systems offer a promising way to ensure that students who are ready to succeed in college-level courses are permitted to take them.

A growing body of research — including a large-scale, random assignment study — shows that multiple measures placement systems can improve placement accuracy and help more students pass entry-level math and English courses.

From a Large, Urban Community College System

One of the earliest studies to question the reliability of placement tests used statistical modeling to compare the effects of placement via standardized tests with placement via high school GPA and other measures in a large, urban community college system. The results suggest that a third of test-takers were misplaced in English and a quarter misplaced in math. The majority of misplaced students were underplaced and referred to developmental education when they were predicted to earn a B or better in the college-level course (a high standard referred to in the study as "severely underplaced"). A smaller number were overplaced and assigned to a college-level course they were predicted to fail ("severely overplaced"). Using multiple measures could have reduced these placement errors, increased the proportion of students assigned to college-level courses and increased pass rates for those students.[6]

Predicted Improvements in Outcomes With Multiple Measures Placement

	MATH		ENGLISH	
	Placement Test Only	Multiple Measures	Placement Test Only	Multiple Measures
Severe error rate	24%	22%	33%	28%
Overplacement	6%	7%	5%	6%
Underplacement	18%	14%	29%	22%
Placed into college-level course	25%	33%	20%	31%
Passed college-level course with a C or better	67%	68%	72%	76%

Source: Do High-Stakes Placement Exams Predict College Success?

From a Pioneer Multiple Measures College

Long Beach City College in **California** implemented a placement algorithm that incorporates both high school information and placement test scores. In fall 2011, only 9 percent of first-time students were assigned to college-level math. Among students placed using multiple measures in 2012, the figure was 30 percent. The share of students assigned to college-level English went from 13 percent to 60 percent. Pass rates in the courses stayed virtually the same, suggesting that students who were moved into the courses were as capable of passing them as their peers. Overall, a larger percentage of students passed college-level math (from 5 percent to 15 percent) and English (from 12 percent to 41 percent) in their first year.[7]

From a Large-Scale, Random Assignment Study

Seven community colleges in the State University of **New York** (SUNY) system are participating in a random assignment study in which 13,000 students were placed using multiple measures or placement tests alone. The study is designed to ensure any differences in student outcomes can be attributed to the placement systems by testing them on two groups of students with similar education backgrounds and other characteristics.

Researchers helped each college develop an algorithm for multiple measures placement based on its data on former students. Then faculty set cut scores based on predicted placement and pass rates in their courses. The colleges plugged students' GPA and other data into the algorithm to determine their placement. Students placed using multiple measures were 5 percentage points more likely to be placed into college-level math and more than 30 percentage points more likely to be placed into college-level English than their peers evaluated using placement tests alone. Students in the multiple measures group were also more likely to pass college-level English and math in their first term.[8]

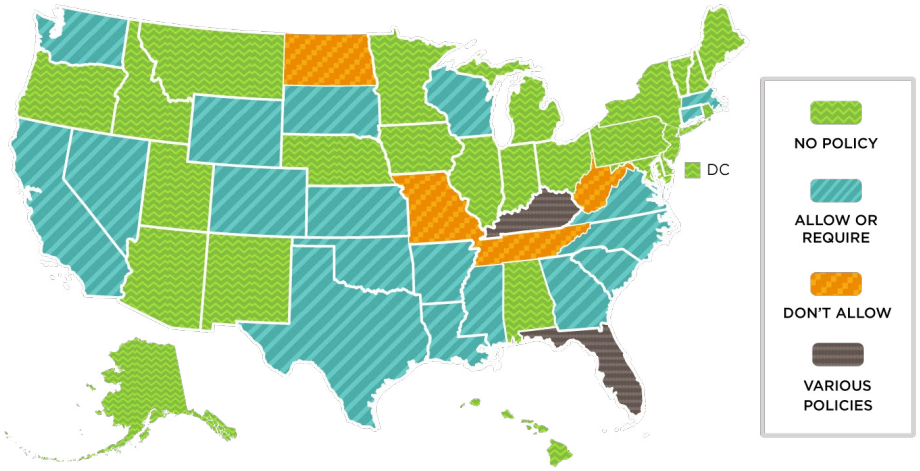
Effects of Multiple Measures Placement at Seven SUNY Community Colleges

	MATH		ENGLISH	
	Placement Test Only	**Multiple Measures**	**Placement Test Only**	**Multiple Measures**
Placed into college-level course	44%	49%	52%	83%
Passed college-level course with a C or better	14%	17%	27%	40%

Note: Table shows first-term outcomes for 4,729 students who took a placement test at five of the seven SUNY colleges in fall 2016, including students who did not enroll in any courses.

Source: Multiple Measures Placement Using Data Analytics: An Implementation and Early Impacts Report.

Which States Allow Multiple Measures Placement?



Source: 50-State Comparison on Developmental Education Policies.

State Examples

California

The **California** Legislature passed A.B. 705 in 2017 with the goal of placing many more students into college-level courses. The legislation requires community colleges to maximize the probability that new students will complete transfer-level English and math courses within one year — necessitating significant changes to colleges' developmental education programs. Colleges can only assign students to developmental courses if they are highly unlikely to succeed in college-level courses and will be helped by the developmental coursework. The bill also requires that colleges use high school coursework, course grades and/or high school GPA in course placement decisions, including for placement into English-as-a-second-language courses. The **California** Community Colleges Chancellor's Office created a set of default placement rules that allow students with low high school GPAs into college-level courses with extra academic support. The new systems must be implemented by fall 2019.[9]

The **Minnesota** Legislature passed legislation in 2017 that required the state board of trustees to develop a plan to minimize the number of students assigned to developmental education. In response, the trustees set a goal to develop a statewide system for multiple measures placement by the 2020–21 academic year. In the interim, the state is allowing waivers based on ACT, SAT and high school assessment scores. Several **Minnesota** colleges are piloting multiple measures placement systems, and researchers are conducting a random assignment study to document the effects.[10]

Before 2013, **North Carolina**'s 58 community colleges generally based their placement decisions on standardized test scores. Now, under a statewide policy introduced in fall 2013 and fully implemented in fall 2016, colleges exempt students from developmental courses if they graduated from a **North Carolina** high school within five years with a GPA of 2.6 or higher and completed four math courses. Students who do not meet those criteria can be exempt based on their ACT or SAT scores. With the policy change, the share of students assigned to developmental education declined from 65 percent in 2012 to 52 percent in 2014.[11]

Policy Considerations

Implementing a multiple measures placement system requires planning and participation from departments across a college. It can also require policy changes to allow new placement rules, along with preparation for shifts in the courses students take. College leaders and state and system policymakers should consider several issues before implementing a multiple measures placement system at their colleges.

There can be a tradeoff between the placement accuracy of a multiple measures system and the level of effort required to implement and use it. For instance, placement algorithms may be more precise than decision rules; but to create them, a college's historical data must be gathered, analyzed, and interpreted. Implementing complex multiple measures placement systems is more feasible if colleges and states already have strong institutional research capacity.

Colleges need systems to gather and process the data used in multiple measures placement. High school transcripts are often the core of multiple measures placement systems, but few community colleges collect transcripts automatically. Colleges and local school systems need to establish methods to collect transcripts and integrate the data into college information systems so they are available for use in placement decisions. Some colleges allow students to self-report their high school GPA.

The function of multiple measures placement may depend on what other developmental and college completion reforms colleges are already engaging in, such as corequisite remediation and math pathways. In colleges where corequisite reforms have already enabled the majority of students to take college-level courses by coupling them with extra supports, the role of multiple measures may be to determine which students need those supports. In colleges that offer different math pathways for students depending on their major, placement systems may also need to gauge students' readiness for several possible math options.

A new placement system will be most successful when buy-in is secured from faculty, staff and administrators. Changing placement systems often raises concerns about whether underprepared students will be allowed into college-level courses or whether new placement measures are valid. To

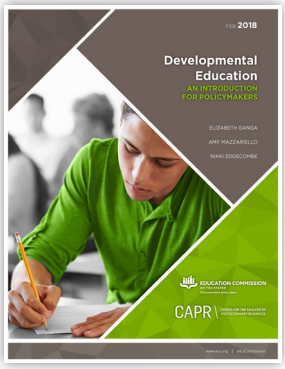
alleviate concerns, faculty should be informed about the research on multiple measures placement and included in decisions about placement measures and cut scores. Nonacademic departments — including admissions, advising, testing, information technology and the registrar — will also be affected by changes to the placement system and should be included in planning.

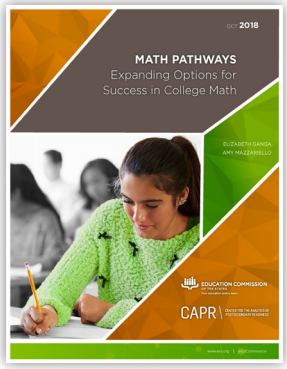
To ensure a new placement system is working as intended, states and colleges will need to monitor its effects by comparing developmental and college-level placement, enrollment and pass rates under the old and new systems. In addition to looking at the reform's overall effects, it is also important to examine its effects on different student groups to make sure all are benefiting — and if they are not, to look into the data to find out why.

For More Information

For more on implementing multiple measures placement systems, see *Toward Better College Course Placement: A Guide to Launching a Multiple Measures Assessment System* from MDRC and the Community College Research Center.

States and systems need to allocate resources to collect and analyze data, update information systems, prepare for enrollment shifts, prepare new individual placement reports and train advisors to explain results to students. The average one-year cost to a college to introduce decision rules in **Minnesota** was nearly $49,000; in **Wisconsin**, it was about $64,000. Ongoing costs are expected to be lower.[12] Implementing multiple measures placement algorithms in **New York** cost about $121,000 per college on average in the first semester and less than half that in subsequent fall semesters. The main costs were for information technology staff time to create the data infrastructure, program staff to implement the new system and senior and administrative staff to manage the transition. There were also overhead and materials costs. [13]





This resource is the third in a series about developmental education. The first installment is *Developmental Education: An Introduction for Policymakers,* and the second is *Math Pathways: Expanding Options for Success in College Math.*

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2. Judith Scott-Clayton, *Do High-Stakes Placement Exams Predict College Success?* (New York: Community College Research Center, February 2012), https://ccrc.tc.columbia.edu/publications/high-stakes-placement-exams-predict.html; and Olga Rodriguez, Marisol Cuellar Mejia, and Hans Johnson, *Remedial Education Reforms at California's Community Colleges: Early Evidence on Placement and Curricular Reforms* (San Francisco: Public Policy Institute of California, August 2018), https://www.ppic.org/publication/remedial-education-reforms-at-californias-community-colleges-early-evidence-on-placement-and-curricular-reforms/.

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6. Scott-Clayton, *Do High-Stakes Placement Exams Predict College Success?*

7. See "LBCC Promise Pathways," Long Beach City College, accessed March 4, 2019, https://www.lbcc.edu/post/lbcc-promise-pathways; and *Promising Pathways to Success: Using Evidence to Dramatically Increase Student Achievement*, Long Beach City College, accessed March 4, 2019, https://www.accca.org/files/Awards/Mertes%20Award%20-%20LBCC%20Ex%20Summary.pdf. The 2012 cohort was also required to take math and English immediately as part of Long Beach Promise Pathways.

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