

What to Look for in Your Institution's Data

Placement tests and other standardized tests, high school GPA and coursetaking records, and other assessments or background questions may be used in a multiple measures system. The purpose of this document is to provide institutional researchers with advice and potential benchmarks to inform placement system design using such measures, as well as to track placement and related outcomes, including enrollment in college, enrollment in math and English courses, and completion of those courses—the best indicator of success. These benchmarks can be used for placement feasibility, auditing, accountability, monitoring, continuous improvement, and evaluation. The checks described below should be performed each semester in the academic year before and after implementation of MMA.

Data checks before implementing MMA

Data availability

- What test scores and high school transcript measures are available in recent historical data? These are the measures on which your institution can conduct its own predictive analysis.

Missingness

- What proportion of students do not have any record of each measure? Why? Looking ahead, could this number be lowered—either by timely data entry or student self-report—for those measures most likely to be used in MMA? Are certain subgroups of students, defined by race, gender, or socioeconomic status, less likely to have certain measures?

Timing

- When is each measure entered into the management information system? Is it prior to course placement? If not, what would be the data entry requirements to make the measure available for automated placement going forward?

Distribution

- What are the maximum and minimum values of each potential measure in historical data? What are the mean, median, and mode scores? Generate a histogram or box plot. This is a good starting point for conversations about MMA cut scores because it provides information on the likely number of students affected.

Correlations with outcomes

- Even simple correlations can be revealing. How strongly do historical test scores correlate with completion of college-level math and English courses? How strongly does high school GPA? Variables with little outcome correlation may not be worth the effort to include as placement measures.

Data checks before and after implementing MMA

Placement

Measuring placement rates will provide a baseline estimate of how many students are allowed to take college-level courses upon entry and how that changes with changes in placement criteria.

To measure placements, track the number and percent of students placed into college-level courses

- overall (status quo and MMA)
- in each subject (math and English)
- by MMA (placement override)

Denominator = all students going through placement, by subject (math and English)

Mediators

The number of placed students that enroll in college can be affected by placement criteria; students who are not allowed to take college-level courses may be less likely to enroll in college at all.

To measure mediators, track the number and percent of students enrolling:

- in any course
- in a gatekeeper course in each subject (math and English)

Possible denominators:

- all testing students by subject (math and English)
- students placed in college-level courses by subject
- students placed in developmental-level courses by subject
- MMA bumped-up students (students who would have taken dev ed if not for MMA) by subject

Outcomes

Looking at the proportion of students passing courses is just as important among all students going through placement as among enrolled students. Looking at all placed students gives valuable through-put information about the likelihood of a new student completing their gatekeeper courses. Allow a few semesters of follow-up to see if students get through gatekeeper courses in later semesters.

To measure outcomes, track the number and percent of students passing a gatekeeper course (C or higher)

- in either subject (math or English)
- in each subject separately

Possible denominators

- all of the mediator denominators listed above

Note on Denominators

In the following sections, denominators are suggested for each variable of interest. The denominator defines the population of interest for a given analysis. For many of these variables, it is important to look at them among different populations (using more than one denominator) to get the full picture of how placement affects students throughout their testing, enrollment, and persistence trajectory.

- enrolled students by subject (math and English)
- MMA bumped-up enrolled students (students who would have taken dev ed if not for MMA) by subject

Compare

Compare rates of placement, enrollment, and gatekeeper completion by relevant groups.

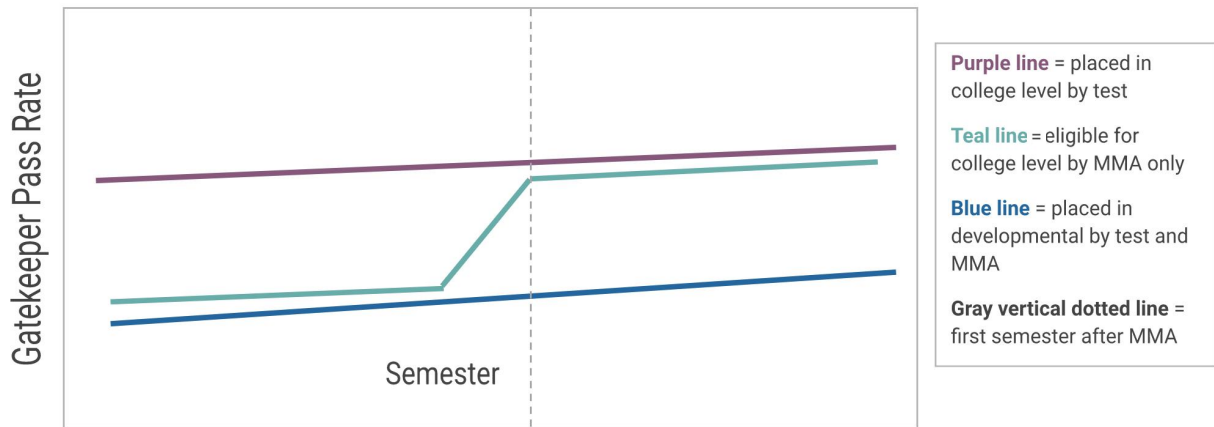
- Do those who were bumped up by MMA perform better or worse than those placed in college-level by the test?
- Do those who were bumped up by MMA perform better or worse than those placed in developmental courses (especially after a few semesters)?

SUNY colleges have developed a template for capturing many of the above-mentioned mediators and outcomes. This [spreadsheet](#) can be adapted to suit the needs of your college.

Ideas for evaluating MMA after it has been implemented

Students performing better than in their counterfactual condition (what would have happened to them without MMA) are successful. So, if bumped-up students pass gatekeeper courses at a higher rate than similar developmental students, that suggests bumping up was successful for them, even if they pass at a lower rate than students who placed into college-level under the old system. However, it is still good to compare bump-up pass rates with status quo college-level pass rates to make sure the classroom experience isn't being changed dramatically by new students who are not performing well.

- Compare rates of placement, enrollment, and gatekeeper completion by relevant groups:
 - Do those who were bumped up by MMA perform better or worse than those placed in college-level by the test?
 - Do those who were bumped up by MMA perform better or worse than those placed in developmental courses (especially after a few semesters)?
- Equity considerations are key. Are the chosen measures working for all students? Are they closing gaps in completion of college-level courses? Look at these numbers by:
 - subject (math or English)
 - race/ethnicity
 - Pell status
 - gender
 - first-generation status
- Perform a comparative interrupted time series analysis. Plot average outcomes over several semesters before and after launch of MMA by the placement categories as in the following illustrative example:



In the example, there is no discontinuity in the trends for those placed by the old test rules into college-level or those placed by the old test rules into developmental (and not eligible for bump up). However, those eligible for bump up under MMA see a jump in outcomes as compared with equivalent students prior to MMA. If this pattern were observed in real data, it would suggest a positive impact from MMA. If, on the other hand, the trends were all flat or the trends all showed discontinuities in the same place, there would not be good evidence of an effect.

What to do with this information

Monitoring MMA requires looking at student placement and success from several perspectives. Monitoring college course pass rates is important but doesn't tell the whole story. For example, what about those students who were not placed into the college-level class? A student placed into a developmental prerequisite must enroll in that prerequisite, successfully complete it, and return to college in a subsequent semester, all before enrolling in the college-level course. These steps can discourage even very enthusiastic students. An important way to monitor success in college-level courses is to look at the proportion passing them among all those who go through the placement process, allowing at least two semesters of follow-up after course placement.

It's also important to monitor MMA's impact on equity by disaggregating the data by race/ethnicity, income, and age to determine if students are benefitting equally or if gaps are opening or closing between groups. If gaps continue or worsen, investigate who has access to MMA and who is excluded, the influence of advising practices, and other potential reasons for gaps and ways to narrow them. Read [The Next Phase of Placement Reform: Moving Toward Equity-Centered Practice](#) for more ideas for improving equity in placement.

[Back to the Toolkit](#)