



Multiple Measures Spring Follow-up
Math Department

Considerations Moving Forward:

1. Low match rate with Cal-PASS Plus – consider collecting and using self-reported transcript data
2. Change the way we notify students of their placement level i.e. psychological implications of receiving two placement levels and one week lag between the Accuplacer score and the multiple measures score
3. Consider using the EAP score of Standard Exceeded as an additional Multiple Measure

Recap on Historical Placement and Completion Rates

Placement and Enrollment Rates

	First Time Students	Percent Placing in Basic Skills Math	Percent Enrolling in Basic Skills Math in First Year	Percent Placing in College Level Math	Percent Enrolling in College Level Math in First Year
Fall 2015	3,684	75%	83%	15%	84%
Fall 2014	3,657	76%	84%	14%	87%
Fall 2013	3,677	76%	82%	13%	84%

Students who took placement test on March 1-September 30 prior to each fall term

Includes the highest test score received in the subject area

Math placement includes Math 210, 212, 217 for basic skills; Math 10, 11, 41, 44, 45, 57 for college level

Source: IRP

Tracking Students Through Transfer Level

Fall 2012 to Spring 2015 - 3 Years		
	MATH10, 11, 41, 44, 46	
	Starting Cohort	% Complete
MATH114	555	88%
MATH212	851	48%
MATH210	297	21%

Students who started in the basic skills course listed and completed Math 10, 11, 41, 44, 46 within 3 years.
Source: CCCC Basic Skills Tracker

Background of our High School Students

Last High School Math Class

Course	Students	Average Grade
Algebra 2 (5)	5,038	D+ (1.83)
Calculus (8)	2,252	C+ (2.58)
Geometry (4)	2,582	D+ (1.84)
Math Analysis (7)	1,791	C (1.98)
Algebra 1 (3)	1,298	D+ (1.84)
Math Analysis (7)	1,791	C (1.98)
Statistics (6)	1,037	C+ (2.39)
Pre Calculus (7)	1,000	C+ (2.28)

N= 15,770; Last math high school course completed and average grade for students who enrolled at De Anza. (0-9; 0 = least rigorous; 9 = most rigorous) Includes only the top courses by enrollment. Students enrolled in HS between 1997 and 2014.

Source: CalPASS Plus

Rule Set Compared to Average GPA

Transfer Level Course	Direct Matriculant	Average High School Unweighted GPA of De Anza Students
Statistics (Non STEM)	HS 11 GPA \geq 3.0 (B) OR HS 11 GPA \geq 2.3 (C+) AND Pre-Calculus C (or better)	B- (2.7)

Unweighted GPA for students who took a course within the subject area in high school.
 Last high school GPA, 11th grade for direct matriculants, 12th for non direct, N = 15,770
 Source: The RP Group and CalPASS Plus

Spring 2016 Pilot – Early Results

CalPASS Matches

Students uploaded to CalPASS	308	
Student matches	171	
No match	137	33 were out of state, the rest were high school graduates with no transcript data
Usable matches	79	

Math Placements

Multiple Measures	Accuplacer	Students
<u>MM Matched</u>		
MATH42	MATH42	1
MATH10	MATH10	4
MATH114	MATH114	1
MATH212	MATH212	2
subtotal		8
<u>MM Higher</u>		
MATH10	MATH114	4
	MATH210	1
	MATH212	11
MATH114	MATH212	1
MATH212	MATH210	1
subtotal		18
<u>MM Lower</u>		
MATH210	MATH212	1
	MATH114	1
subtotal		2
Grand Total		28

First time students who took a math placement test for the first time between 2/8/16 and 4/19/16.

Source: IRP

Math Enrollments

Multiple Measures	Accuplacer	Course Enrolled	Students
MATH10	MATH114	MATH114	1
	MATH212	MATH212	4
MATH210	MATH212	MATH212	1
	Total		6

First time students who took a math placement test for the first time between 2/8/16 and 4/19/16.
Source: IRP

Data Matching and Self-Reported Data

High Schools Reporting to CalPass Plus

CalPass Data Available	Reporting High School	Enrolled in Fall 2014	% Enrolled in Fall
2014-15	East Side Union	984	28%
N/A	Other California/Out of State	700	20%
2014-15	Fremont Union	486	14%
2012-13	San Jose Unified	405	12%
2009-10	Campbell	279	8%
2014-15	Santa Clara Unified	194	6%
N/A	Milpitas	129	4%
N/A	Santa Clara Private HS	66	2%
N/A	Morgan Hill	59	2%
2012-13	Mountain View-Los Altos	52	1%
N/A	Los Gatos	52	1%
2014-15	San Mateo Union	51	1%
N/A	Sequoia	20	0%
N/A	Gilroy	18	0%
N/A	Palo Alto	14	0%
N/A	San Mateo Private HS	13	0%
	Total	3,522	

Self-reported HSGPA appears to be reliable alternative

- College of the Canyons Research (Gibbons, 2014)
 - Self-report of last course and grade in Fall term very accurate
 - Errors that do occur in part because of timing
- University of California admissions
 - Uses self-report HSGPA but verifies after admission
 - 2008: 9 campuses, 60000 students. No campus had more than 5 discrepancies b/w reported grades and student transcripts:
 - <http://bit.ly/UCSelfReportGPA>
- Much of the ACT research uses self-report GPA and finds it to be a more powerful predictor than students actual scores on the standardized tests
 - ACT, 2013: $r(1978) = .84$

CSU's Early Assessment Program (now part of Smarter Balanced K-12 testing system)

- Assessment of high school juniors to measure their readiness for college-level English and Math
- Includes a computer adaptive test and an essay (English)

- CSU accepts students who receive 'Standard Exceeded' into college-level English and Math coursework – do not need to take a placement test

More information: <https://www.calstate.edu/EAP/>

Next Steps

- Continue to place students using Accuplacer and Multiple Measures
 - Use EAP scores to place students as a multiple measure as well?
- Discuss different ways to notify students in the pilot
 - Provide only one placement level rather than Accuplacer and MM?
 - Automate the process so students receive their MM placement at the same time as Accuplacer (now a 1 week delay)
- Continue to track the spring cohort to multiple outcomes
- Survey students who were in the pilot to get their feedback
- Discuss the possible use of self-reported transcript data
 - Collect course, grade, and GPA on application
 - Validate 10% of self-reported data against CalPass transcripts
 - Allows greater access for students without transcript data in CalPass
 - Increase our sample size to determine if MM is working or not