

DATE: January 3, 2018

TO: Kennedy Bui

FROM: Doreen Finkelstein, Research Analyst

RE: Assessment analyses for 2017 program review

Introduction:

This report serves two purposes:

1. Identify the demographic trends of students who received an Accuplacer placement in math, English, or ESL between 2014-15 and 2016-17.
2. Explore findings from the Fall 2016 multiple measures placement pilot, which ran from June 14 – July 21, 2016. A multiple measures placement is made via a combination of high school GPA and high school coursework. Demographics of students who received a multiple measures placement during the pilot are reported, along with the percent who received a higher placement with multiple measures, and the rate of placement into college-level math or English compared to previous years.

Results Overview:

- The number of math placements has steadily declined over the past three academic years, decreasing by 7% between 2014-15 and 2015-16, and again by 13% between 2015-16 and 2016-17. Overall, there were 865 fewer math placements in 2016-17 than in 2014-15. No demographic groups dropped in their relative placement rate compared to other groups.
- The number of English and ESL placements fluctuated over the past three academic years, increasing by 10% for English and by 7% for ESL between 2014-15 and 2015-16, then decreasing by 4% for English and by 5% for ESL in 2016-17. Overall, there were 162 more English placements in 2016-17 than in 2014-15, and 15 more ESL placements. The percent of Asian students placing in English has steadily increased, as has the percent of female students placing in ESL.

- In 2016-17, the percent of placements that were retests were:
 - 10% for math
 - 6% for English
 - 12% for ESL
- During the Fall 2016 multiple measures pilot, 43% of multiple measures math placements were higher than the Accuplacer placement, and 60% of multiple measures English placements were higher than the Accuplacer placement. The student groups who showed the biggest gains with multiple measures were:
 - African American students: 67% placed higher in math, and 75% placed higher in English.
 - Latinx students: 64% placed higher in math, and 71% placed higher in English.
 - Filipinx students: 68% placed higher in English.
 - Pacific Islander students: 83% placed higher in English.
 - Students age 26 or older: 64% placed higher in math, and 75% placed higher in English.
- During the Fall 2016 multiple measures pilot, there was a large increase in the rate of placement into college-level courses:
 - 63% of math placements were into college-level courses compared to 40-45% in previous years. The student groups who showed the biggest gains in rate of placement into college-level math were African American students and Filipinx students.
 - 66% of English placements were into college-level courses compared to 32-40% in previous years. The student groups who showed the biggest gains in rate of placement into college-level English were African American students, Filipinx students, Latinx students, and Pacific Islander students.

Results Detail:

1. *Who received a Math, English, or ESL placement via Accuplacer? Who received placements via retests?*

Tables 1-3 below show the breakdown – by ethnicity, gender, and age – of students who received a placement in math, English, or ESL in 2014-15, 2015-16, or 2016-17. Data is by placement rather than by student, so a student who received more than one placement is counted multiple times. The tables contain: 1) the count of Accuplacer placements for each student group; 2) the percent of placements for a student group out of all placements; 3) the count of placements received via an Accuplacer retest; 4) the percent of retest placements for a student group out of all retests; and 5) the retest rate for the year for each student group (i.e., the percent of their Accuplacer placements that were retests).

Retest data coding began partway through the 2015-16 academic year. Hence, the retest data only reflects 2016-17 and part of 2015-16. Retests were defined as regular retests

only, and did not include “challenge placement” retests, where a Dean authorized an additional retest after regular retest opportunities were exhausted.

Math:

Table 1 shows math and math retest placements for the different demographic groups over the past three academic years.

All Accuplacer placements

The total number of math placements has decreased over time, from 4483 in 2014-15 to 4182 in 2015-16, to 3618 in 2016-17. Asian and Latinx students made up the largest number of math placements (31% each in 2016-17), followed by White students (25% in 2016-17). There was an approximately equal number of placements for male vs. female students. The majority of placements were for students age 25 or younger (85% in 2016-17).

The percent of placements by student group has remained relatively stable over time, indicating that no groups have dropped in their placement rate compared to other groups. The percentage for Asian students appeared to increase from 2015-16 to 2016-17 (25% to 31%), and the percentage for students with missing ethnicity data appeared to decrease (8% to 1%), but as these were the only two ethnicity groups to show changes, the most likely explanation is that the percentage for Asian students has remained relatively stable as well, and most of the students with missing ethnicity data prior to 2016-17 were Asian students. This is suggestive of a recent effort to ensure that the ethnicity of F1 international students is recorded.

Retest placements

Of the 3618 math Accuplacer placements in 2016-17, 364, or 10%, were retests. Asian students made up the largest number of math retests in 2016-17 (37%), followed by Latinx (28%) and White (23%) students. Asian students were the group most likely to retest in math, with a 12% retest rate in 2016-17.

The percentage of retesters age 25 or younger increased between 2015-16 and 2016-17 from 80% to 87%. Asian retesters also appeared to show an increase, but it is likely there was no actual difference in their percentage, and the apparent increase is due to fewer students with missing ethnicity data in 2016-17.

Table 1 Math Placements						
	All Accuplacer Placements			Placements via Retests		Retest Rate
Student Group	2014-15	2015-16	2016-17	2015-16	2016-17	2016-17
By Ethnicity						
African American	225 5%	207 5%	161 4%	11 4%	14 4%	9%
Asian	1091 24%	1051 25%	1118 31%	82 31%	135 37%	12%
Filipinx	234 5%	218 5%	188 5%	13 5%	15 4%	8%
Latinx	1375 31%	1266 30%	1137 31%	72 28%	102 28%	9%
Native American	29 1%	16 0%	22 1%	1 0%	2 1%	9%
Pacific Islander	75 2%	66 2%	53 1%	2 1%	2 1%	4%
White	1090 24%	1029 25%	892 25%	59 23%	84 23%	9%
Ethnicity Not Stated	364 8%	329 8%	47 1%	21 8%	10 3%	21%
By Gender						
Female	2244 50%	2131 51%	1800 50%	136 52%	185 51%	10%
Male	2204 49%	2016 48%	1792 50%	124 48%	176 48%	10%
Gender Not Stated	35 1%	35 1%	26 1%	1 0%	3 1%	12%
By Age						
25 or Younger	3798 85%	3463 83%	3082 85%	208 80%	316 87%	10%
26 or Older	685 15%	717 17%	536 15%	53 20%	48 13%	9%
Age Not Stated	0 0%	2 0%	0 0%	0 0%	0 0%	n/a
Total	4483 100%	4182 100%	3618 100%	261 100%	364 100%	10%

Note: Retest data for 2015-16 reflect only part of the year. Percents may not appear to sum due to rounding.

English:

Table 2 shows English and English retest placements for the different demographic groups over the past three academic years.

All Accuplacer placements

The total number of English placements increased from 2681 to 2960 between 2014-15 and 2015-16, then decreased to 2843 in 2016-17. Latinx students made up the largest number of English placements (36% in 2016-17), followed by White students (26% in 2016-17) and Asian students (24% in 2016-17). Female students consistently had slightly more placements than male students (51% vs. 48% in 2016-17). The majority of placements were for students age 25 or younger (85% in 2016-17).

The percent of placements by student group has remained relatively stable over time with a few exceptions: African American students slightly declined in their percentage in 2016-17 compared to the previous two years (4% vs. 6%); and Asian students steadily increased in their percentage every year (19% in 2014-15, 22% in 2015-16, and 24% in 2016-17). Also, the percentage of students age 25 or younger increased slightly every year (83% of placements in 2014-15, 84% in 2015-16, and 85% in 2016-17).

Retest placements

Of the 2843 English Accuplacer placements in 2016-17, 164, or 6%, were retests. Asian students made up the largest number of English retests (30%), followed by Latinx (29%) and White (26%) students. African American and Asian students were slightly more likely to retest in English compared to other student groups, with 2016-17 retest rates of 8% and 7% respectively. Students age 25 or younger were more likely to retest than older students (6% retest rate vs. 4%).

The percentage of English retest placements increased for White students and decreased for Latinx and male students between 2015-16 and 2016-17. White students made up 26% of retest placements in 2016-17 compared to 13% of retest placements in 2015-16; Latinx students made up 29% of retest placements in 2016-17 compared to 34% of retest placements in 2015-16; and male students made up 43% of retest placements in 2016-17 compared to 48% in 2015-16.

Table 2						
English Placements						
	All Accuplacer Placements			Placements via Retests		Retest Rate
Student Group	2014-15	2015-16	2016-17	2015-16	2016-17	2016-17
By Ethnicity						
African American	152 6%	168 6%	120 4%	6 7%	10 6%	8%
Asian	513 19%	663 22%	684 24%	27 31%	49 30%	7%
Filipinx	177 7%	165 6%	182 6%	4 5%	9 5%	5%
Latinx	994 37%	1043 35%	1019 36%	30 34%	48 29%	5%
Native American	24 1%	11 0%	17 1%	0 0%	0 0%	0%
Pacific Islander	53 2%	61 2%	53 2%	4 5%	2 1%	4%
White	705 26%	726 25%	733 26%	11 13%	42 26%	6%
Ethnicity Not Stated	63 2%	123 4%	35 1%	5 6%	4 2%	11%
By Gender						
Female	1396 52%	1520 51%	1463 51%	45 52%	91 55%	6%
Male	1263 47%	1417 48%	1358 48%	42 48%	71 43%	5%
Gender Not Stated	22 1%	23 1%	22 1%	0 0%	2 1%	9%
By Age						
25 or Younger	2226 83%	2480 84%	2422 85%	78 90%	146 89%	6%
26 or Older	454 17%	480 16%	421 15%	9 10%	18 11%	4%
Age Not Stated	1 0%	0 0%	0 0%	0 0%	0 0%	n/a
Total	2681 100%	2960 100%	2843 100%	87 100%	164 100%	6%

Note: Retest data for 2015-16 reflects only part of the year. Percents may not appear to sum due to rounding.

ESL:

Table 3 shows ESL and ESL retest placements for the different demographic groups over the past three academic years.

All Accuplacer placements

The total number of ESL placements increased from 958 to 1027 between 2014-15 and 2015-16, then decreased to 973 in 2016-17. Asian students made up the largest number of ESL placements (60% in 2016-17), followed by White students (21% in 2016-17). Female students had more placements than male students (62% vs. 38% in 2016-17). The majority of placements were for students age 25 or younger (63% in 2016-17).

The percent of placements for female students vs. male students has increased every year (53% female in 2014-15, 56% in 2015-16, and 62% in 2016-17), as has the percent of older students vs. younger students (33% age 26 or older in 2014-15, 35% in 2015-16, and 37% in 2016-17). The percentages for Asian and Latinx students have also increased in 2016-17 compared to previous years, but it is impossible to know how much of this reflects a true increase as opposed to an artificial increase caused by a decrease in missing ethnicity data in 2016-17.

Retest placements

Of the 973 ESL Accuplacer placements in 2016-17, 114, or 12%, were retests. Asian students made up the great majority of retest placements (77%). African American and Asian students were more likely to retest in ESL compared to other student ethnic groups, with retest rates of 23% and 15% respectively in 2016-17. Also, male students were more likely to retest than female students (retest rates of 15% vs. 10%), and students age 25 or younger were far more likely to retest than older students (retest rates of 16% vs. 5%).

The percentage of ESL retest placements increased between 2015-16 and 2016-17 for Asian students (58% vs. 77%), male students (44% vs. 49%), and students age 25 or younger (64% vs. 84%), while decreasing for White students (17% vs. 11%).

Table 3
ESL Placements

Student Group	All Accuplacer Placements			Placements via Retests		Retest Rate
	2014-15	2015-16	2016-17	2015-16	2016-17	2016-17
By Ethnicity						
African American	9 1%	11 1%	22 2%	1 3%	5 4%	23%
Asian	359 37%	465 45%	579 60%	21 58%	88 77%	15%
Filipinx	11 1%	7 1%	3 0%	0 0%	0 0%	0%
Latinx	108 11%	119 12%	142 15%	3 8%	7 6%	5%
Native American	0 0%	0 0%	1 0%	0 0%	0 0%	0%
Pacific Islander	5 1%	2 0%	3 0%	0 0%	0 0%	0%
White	201 21%	188 18%	208 21%	6 17%	13 11%	6%
Ethnicity Not Stated	265 28%	235 23%	15 2%	5 14%	1 1%	7%
By Gender						
Female	512 53%	580 56%	600 62%	20 56%	58 51%	10%
Male	437 46%	441 43%	372 38%	16 44%	56 49%	15%
Gender Not Stated	9 1%	6 1%	1 0%	0 0%	0 0%	0%
By Age						
25 or Younger	643 67%	666 65%	609 63%	23 64%	96 84%	16%
26 or Older	314 33%	361 35%	364 37%	13 36%	18 16%	5%
Age Not Stated	1 0%	0 0%	0 0%	0 0%	0 0%	n/a
Total	958 100%	1027 100%	973 100%	36 100%	114 100%	12%

Note: Retest data for 2015-16 reflects only part of the year. Percents may not appear to sum due to rounding.

2. Who received placements during the Fall 2016 multiple measures pilot? How often were placements higher with multiple measures?

Table 4 shows, by ethnicity, gender, and age, the number of Accuplacer and multiple measures placements students received during the Fall 2016 multiple measures pilot (which ran from June 14 – July 21, 2016). The students who received an Accuplacer placement in math or English during the pilot but did not receive a multiple measures placement were either 1) international students, who were not eligible to receive placement via multiple measures; 2) students who chose not to answer the multiple measures question; or 3) students whose responses were not recorded due to administration issues (missing data). For the subset of students who received a multiple measures placement, the table shows the percent of the placements that were higher than the corresponding Accuplacer placements, overall and by student group.

Math:

There were 513 students who received an Accuplacer placement in math during the pilot, and 253 students who received a multiple measures placement. In total, 249 (49%) of the 513 students who received an Accuplacer placement also received a multiple measures placement. (There were an additional 4 students who received multiple measures placements in math without a corresponding Accuplacer placement made on the same date.) Almost half of these multiple measures placements – 108, or 43% – were higher than the corresponding Accuplacer placement. The largest gains were for African American students (67% placed higher), Latinx students (64% placed higher), and students age 26 or older (64% placed higher). It is important to note that the highest possible placement for math via multiple measures was Math 10 / Math 44 (code 2600); there were five higher placements possible via Accuplacer: Math 11 (code 2610), Math 48A (code 2710), Math 48B / Math 12 (code 2720), Math 48C (code 2730), and Math 1A (code 2900).

English:

There were 448 students who received an Accuplacer placement in English during the pilot, and of these students, 261, or 58%, also received a multiple measures placement. (No students received a multiple measures placement in English without a corresponding Accuplacer placement.) More than half of these multiple measures placements – 156, or 60% – were higher than the corresponding Accuplacer placement. The largest gains were for African American students (75% placed higher), Filipinx students (68% placed higher), Latinx students (71% placed higher), Pacific Islander students (83% placed higher), and students age 26 or older (75% placed higher). It is important to note that the highest possible placement for English via multiple measures was English 1A (code 1600); there was one higher Accuplacer placement possible, English 1A Honors (code 1700).

Table 4
Accuplacer vs. MM placements
Fall 2016 Pilot: June 14 – July 21, 2016

Student Group	Math			English		
	Accuplacer placements	MM placements	% MM higher	Accuplacer placements	MM placements	% MM higher
By Ethnicity						
African American	21	6	67%	18	12	75%
Asian	123	75	23%	91	45	49%
Filipinx	36	22	45%	39	22	68%
Latinx	175	61	64%	163	97	71%
Native American	3	1	100%	4	2	0%
Pacific Islander	10	4	25%	9	6	83%
White	140	83	43%	122	77	47%
Ethnicity Not Stated	5	1	0%	2	0	0%
By Gender						
Female	260	128	48%	226	138	62%
Male	249	122	37%	219	121	59%
Gender Not Stated	4	3	33%	3	2	0%
By Age						
25 or Younger	463	231	41%	414	245	59%
26 or Older	49	22	64%	34	16	75%
Age Not Stated	1	0	n/a	0	0	n/a
Total	513	253	43%	448	261	60%

Note: Accuplacer placements = all placements made via Accuplacer, MM placements = all placements made via multiple measures, and % MM higher = the percent of multiple measures placements that were higher than the placement via Accuplacer. Around half of students who received an Accuplacer placement also received a multiple measures placement (49% for math, 58% for English).

**3. Who placed into college-level courses during the Fall 2016 multiple measures pilot?
How does this compare to usual placement rates for student groups?**

Tables 5 and 6 show, by ethnicity, gender, and age, how many students placed into college-level math and English during the Fall 2016 multiple measures pilot, which ran from June 14 – July 21, 2016, and how many placed into college-level math and English during the equivalent periods in Fall 2015 and Fall 2014, calculated as the number of days before instruction. Also shown for comparison are the percentages of each student group that placed into college-level courses via Accuplacer during the full 2014-15, 2015-16, and 2016-17 academic years. The Methodology section contains more information on these counts and percents.

Math:

As illustrated in Table 5, all student groups showed a gain in placing into college-level math when the possibility of placing with multiple measures was offered. Outside of the Fall 2016 multiple measures pilot, the overall placement rate into college-level math ranged between 40-45% from Fall 2014 through Spring 2017, including during the pilot-equivalent time periods in 2014 and 2015. However, during the pilot, the overall placement rate into college-level math went up to 63%. The groups with the largest gain in college placement rate over the equivalent time period in the previous year were African American students (48% vs. 15%) and Filipinx students (81% vs. 33%).

English:

As illustrated in Table 6, all student groups showed a gain in placing into college-level English when the possibility of placing with multiple measures was offered. Outside of the Fall 2016 multiple measures pilot, the overall placement rate into college-level English ranged between 32-40% from Fall 2014 through Spring 2017, including during the pilot-equivalent time periods in 2014 and 2015. However, during the pilot, the overall placement rate into college-level English went up to 66%. The groups with the largest gain in college placement rate over the equivalent time period in the previous year were African American students (83% vs. 14%), Filipinx students (67% vs. 19%), Latinx students (55% vs. 23%), and Pacific Islander students (67% vs. 0%).

**Table 5
Who Placed into College-Level Math**

Student Group	Full Academic Year			Equivalent Period (Days Before Instruction) to Fall 2016 Multiple Measures Pilot		Fall 2016 Multiple Measures Pilot
	Accuplacer 2014-15	Accuplacer 2015-16	Accuplacer 2016-17	Fall 2014 June 10 – July 17	Fall 2015 June 9 – July 16	Fall 2016 June 14 – July 21
By Ethnicity						
African American	18%	15%	20%	5 17%	5 15%	10 48%
Asian	76%	71%	77%	92 69%	109 78%	103 84%
Filipinx	34%	33%	32%	12 41%	15 33%	30 81%
Latinx	20%	18%	16%	38 22%	40 18%	75 43%
Native American	28%	31%	23%	2 100%	0 0%	1 33%
Pacific Islander	19%	15%	11%	1 20%	2 15%	4 40%
White	43%	40%	42%	55 38%	75 48%	97 68%
Ethnicity Not Stated	79%	63%	55%	9 90%	6 60%	4 80%
By Gender						
Female	42%	36%	37%	98 35%	122 38%	163 63%
Male	48%	45%	48%	116 49%	129 43%	157 62%
Gender Not Stated	34%	60%	38%	0 0%	1 25%	4 80%
By Age						
25 or Younger	46%	43%	44%	202 42%	233 41%	296 63%
26 or Older	35%	32%	34%	12 29%	19 35%	28 57%
Total	45%	41%	43%	214 41%	252 40%	324 63%

Note: College-level = Math 10, Math 11, Math 12, Math 44, Math 48A, Math 48B, Math 48C, Math 1A; placement code = 2600, 2610, 2710, 2720, 2730, or 2900. The highest placement possible with multiple measures during the MM pilot was 2600.

**Table 6
Who Placed into College-Level English**

Student Group	Full Academic Year			Equivalent Period (Days Before Instruction) to Fall 2016 Multiple Measures Pilot		Fall 2016 Multiple Measures Pilot
	Accuplacer 2014-15	Accuplacer 2015-16	Accuplacer 2016-17	Fall 2014 June 10 – July 17	Fall 2015 June 9 – July 16	Fall 2016 June 14 – July 21
By Ethnicity						
African American	26%	23%	18%	6 29%	4 14%	15 83%
Asian	55%	40%	41%	30 48%	57 55%	59 65%
Filipinx	37%	27%	31%	5 26%	8 19%	26 67%
Latinx	24%	22%	18%	28 25%	43 23%	90 55%
Native American	46%	36%	53%	2 100%	0 0%	3 75%
Pacific Islander	19%	11%	17%	0 0%	0 0%	6 67%
White	56%	51%	45%	52 50%	61 58%	97 80%
Ethnicity Not Stated	44%	35%	34%	3 60%	3 75%	1 50%
By Gender						
Female	39%	31%	29%	72 39%	96 37%	148 65%
Male	40%	36%	34%	54 39%	78 35%	147 67%
Gender Not Stated	59%	39%	55%	(none) n/a	2 67%	2 67%
By Age						
25 or Younger	40%	34%	31%	119 39%	155 36%	274 66%
26 or Older	39%	34%	35%	7 29%	21 41%	23 68%
Total	40%	34%	32%	126 39%	176 36%	297 66%

Note: College-level = English 1A or English 1A Honors; placement code = 1600 or 1700. The highest placement possible with multiple measures during the MM pilot was 1600.

Methodology:

The numbers shown for the Fall 2016 multiple measures pilot in Tables 5 and 6 are the count and percent of students who placed into college-level courses through either Accuplacer or multiple measures, or through both placement methods. The percent is calculated as the fraction of ***all students in that group who received any placement***, including students who did not receive a multiple measures placement (for example, because they chose not to answer, because they weren't eligible for the pilot, or for missing data reasons). The numbers are highly influenced by who received a multiple measures placement; 100% of students who received a multiple measures placement in math placed into college level, and 90% of students who received a multiple measures placement in English placed into college level.

Placement data was retrieved from the Banner ODS table Test. Demographics were retrieved by joining this table to the Banner ODS tables MST_Person for gender data, and Ethnicity_Detail for ethnicity data.