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Placing Special Admit High School Students via Extended MMAP Criteria

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Executive Summary

Background

As colleges around the state have begun to apply the [Multiple Measures Assessment Project \(MMAP\)](#) placement rules more widely and as the decision rules have been adapted to the AB 705 default placement rules,¹ a question commonly arises regarding their applicability to high school students who have not yet completed the 11th grade and who wish to take English and math courses at a community college. While the MMAP rules were developed based on 11th or 12th grade cumulative high school GPA, special admit high school students—including early college, and concurrently and dually-enrolled students—may not yet have 11th or 12th grade cumulative GPAs or coursework. This paper provides an analysis of 10th and 11th grade students who enrolled in transfer-level English and/or math, evaluating the utility of using the Chancellor’s Office default placement rules (e.g., high school GPA of 2.60 or greater to place into transfer-level English) to place similar students in math and English coursework at the community college. It seeks to answer the following research questions:

- Can 11th grade students be effectively placed into community college coursework based on their 10th grade cumulative GPA and coursework?
- Can 10th grade students be effectively placed into community college coursework based on their 9th grade cumulative GPA and coursework?

Using a statewide data set for students enrolled between 2007 and 2014, three cohorts of 11th grade special admit students—one for English (n=662); one for Statistics, Liberal Arts Math (SLAM) (n=143); and one for Business-Science, Technology, Engineering Math (BSTEM) (n=694)—and three cohorts of 10th grade special admit students—one for English (n=129); one for SLAM (n=16²); and one for BSTEM (n=137)—were identified and analyzed to answer the research questions above.

Key Findings

Highlights of the data findings include the following:

English

- When classified by their 9th and 10th grade cumulative GPAs, 10th and 11th grade special admit students in the highest GPA band (i.e., those with high school GPAs of 2.60 or higher), the mid-tier band (i.e., high school GPA from 1.90 to 2.59), and the lowest GPA band (i.e., less than 1.90 high school GPA) have similar success rates in

¹ <https://assessmentplacement.squarespace.com/s/0718-AB-705-Implementation-Memorandumpdf.pdf>

² It is recognized that the sample size of 16 for SLAM is a small sample size and should be interpreted with caution until additional data are available to validate the findings.

transfer-level English as the overall group of all postsecondary students who were classified on the basis of 11th grade cumulative GPA.

- Students in the highest performance band tend to have higher success rates than observed for non-special admit postsecondary students.
- Special admit students who pursued transfer-level English at a community college tended to be above average students with over 80% in the top GPA tier (i.e., 2.60 or greater high school GPA) and with an average GPA of 3.10.

Statistics

- Students in the highest SLAM performance band (i.e., those with high school GPAs of 3.00 or higher, or those with a 2.30 GPA or higher and who had passed a high school precalculus class) tend to have higher success rates in transfer-level SLAM classes than the overall group of all postsecondary students who were classified on the basis of 11th grade cumulative GPA.
- 11th grade special admit students in the mid-tier performance band (i.e., high school GPA from 2.30 to 2.99, and had not already passed a precalculus class) had substantially higher success rates relative to their postsecondary peers (68% vs. 48%).
- Only one special admit SLAM student was in the lowest performance tier (i.e., high school GPA less than 2.30), limiting the ability to draw conclusions about this group.
- Top-tier and mid-tier special admit students have success rates in transfer-level SLAM math comparable to or higher than the success rates of students in the overall postsecondary sample.

Precalculus/STEM

- Students in the highest BSTEM performance band (i.e., those with high school GPAs of 3.40 or higher, or GPA of 2.60 or higher and who had passed a high school calculus class) had success rates that were nine to 13 points higher than the highest tier postsecondary student group.
- The mid-tier performance band (i.e., high school GPA from 2.60 to 3.39, or any GPA and passed a high school precalculus class) had success rates that were eight to 19 points higher than the mid-tier postsecondary student group.
- 11th grade special admit students in the lowest performance band (i.e., high school GPA below 2.60) had twice the success rate of the postsecondary student group.
- Special admit students have success rates in BSTEM math that are generally higher than the success rates of students in the overall postsecondary student group.

Conclusion

The analysis found that **9th grade and 10th grade cumulative GPA predicted success in transfer-level math and English for special admit high school students in 10th and 11th grade at levels comparable to those of students in the overall postsecondary sample.** It also found that special admit students tend to be higher-performing students than typical postsecondary students, as might be expected. One of the reasons GPA from 9th and 10th grade may be an effective predictor of success in community college coursework is that there is a strong correlation in cumulative high school GPA across high school grade levels. The 9th grade GPA of students who enrolled at the community college in the 10th grade has a correlation of 0.89 with 11th grade cumulative GPA. Similarly, the correlation of 10th grade cumulative GPA with 11th grade cumulative GPA is 0.96. These strong correlations indicate that both 9th grade and 10th grade cumulative GPA are good proxies for 11th grade cumulative GPA. While the evidence from this analysis indicates support for the use of 9th and 10th grade cumulative GPA and coursework for placing 10th and 11th grade students into community college math and English coursework, it is important to note that a relatively small number of students were included in this analysis, especially for the 10th grade cohort. Therefore, until additional research can be conducted that expands the size of these cohorts, the application of the default placement rules to special admit students must be approached with caution and may be at the discretion of each college.

Introduction

As colleges around the state have begun to apply the [Multiple Measures Assessment Project \(MMAP\) placement rules](#) more widely and as the decision rules have been adapted to the AB 705 default placement rules,³ a question commonly arises regarding their applicability to high school students who wish to take English and math courses at the community college. The MMAP rules were developed with 11th grade cumulative high school GPA, however, special admit, concurrently-enrolled, or dually-enrolled students will not have 11th grade cumulative GPAs or coursework unless they are currently seniors. This research brief provides an analysis of special admit 10th and 11th grade students, by extending the default placement rules to evaluate their likelihood of success in transfer-level coursework at the community college using cumulative GPAs from 9th and 10th grade. It seeks to answer the following research questions:

- Can 11th grade students be effectively placed into community college coursework based on their 10th grade cumulative GPA and coursework?
- Can 10th grade students be effectively placed into community college coursework based on their 9th-grade cumulative GPA and coursework?

Method

To answer the research questions above, statewide administrative data for students enrolled between 2007 and 2014 were used to identify and conduct comparative analyses for six cohorts of special admit students in three courses areas—English, statistics/liberal arts math (SLAM), and business, science, technology & engineering math (BSTEM)—for two cohorts—10th and 11th grade—per area. Success rate comparisons were made between the special admit students and similarly categorized postsecondary students in each of the default high school performance bands with the difference being that special admit students were categorized based on their 9th or 10th grade performance data rather than their 11th grade data. In cases where group sizes are less than 10, no conclusions are drawn regarding the success rates of the special admit students in that group.

Comparative Analyses by Cohort

English

Using the MMAP analytical files,⁴ 83,306 students were identified who had taken transfer-level English as their first community college English course; and 79,756 (96%) had taken that course after completing high school. Among the 3,550 special admit students in the sample, 662 had

³ <https://assessmentplacement.squarespace.com/s/0718-AB-705-Implementation-Memorandumpdf.pdf>

⁴ MMAP methodology and analytical files:
http://rpgroup.org/Portals/0/Documents/Projects/MultipleMeasures/Publications/Bahr_et_al-2017-Improving_Placement_Accuracy_in_California.pdf

taken transfer-level English as their first community college English course during their 11th grade or junior year in high school. These students were then categorized based on their 10th grade GPA into one of the three default high school performance bands.⁵

Similarly, 129 10th grade or sophomore special admit students were categorized based on their 9th grade GPA into one of the three default high school performance bands.

MATH

The math analysis was divided into two sub-analyses: one for SLAM curricular pathways and one for BSTEM curricular pathways.

SLAM

Using the MMAP analytical files, 17,516 students were identified who had taken a SLAM class as their first community college math class; 16,028 (92%) had taken that class after completing high school. Of that total, 143 students were identified who had taken statistics or liberal arts math as their first community college math class during their 11th grade or junior year in high school. These students were then categorized on the basis of their 10th grade GPA into one of the three default SLAM high school performance bands.

Similarly, 16 10th grade or sophomore special admit students were categorized on the basis of their 9th grade GPA into one of the three default SLAM high school performance bands.

BSTEM

Using the MMAP analytical files, 26,880 students were identified who had taken a B-STEM class as their first community college math class; 24,454 (91%) had taken that class after completing high school. Out of that total, 694 students were identified who had taken a BSTEM transfer-level math⁶ as their first community college math course during their 11th grade or junior year in high school. These students were then categorized on the basis of their 10th grade GPA into one of the three default BSTEM high school performance bands.⁷

Similarly, 137 10th grade or sophomore special admit students were categorized on the basis of their 9th grade GPA into one of the three default BSTEM high school performance bands.

⁵ Default high school performance bands methodology:

http://rpggroup.org/Portals/0/Documents/Projects/MultipleMeasures/Publications/MMAP_AB705_TechnicalPaper_FINAL_091518.pdf

⁶ BSTEM courses include College Algebra, Business Calculus, Trigonometry, Precalculus, Discrete Math, Calculus I, Calculus II, and Differential Linear Algebra

⁷ Technically, for BSTEM placement there is a fourth placement band for students who had not completed Algebra II/Intermediate Algebra or higher. The sample of special admit students did not include any students who had not completed Algebra II, but this result is expected given that special admit students should only be taking more advanced coursework than is available locally at the high school.

Correlational Analysis

Additionally, the 9th grade and 10th grade GPAs of the special admit students were correlated⁸ with their 11th grade GPAs, the criterion GPA for postsecondary placement used in the default placement rules. The extent of correlation among the grade levels was evaluated.

Demographics

English

For special admit students pursuing any transfer-level English course (Table 1), a majority of 11th grade special admit students were female (59%), while among 10th grade special admit students females and males were equally common (50% female). The largest ethnic group in 10th grade was Latinx, while in 11th grade the largest group was White (38%). While the second largest ethnic group in 10th grade was Asian (26%), among 10th grade students, it was Latinx (20%). The most common educational goal for 10th and 11th grade students in the English special admit sample was completion of credits for the diploma or GED (28% and 35%, respectively), followed closely by undecided (22% and 22%). Approximately 14% of the special admit English sample indicated a goal of completing a bachelor's degree, with or without first completing an associate's degree. English is a second (or other) language for 35% of special admit English students in 10th grade, and 19% for 11th grade special admit English students. The average high school GPA of the special admit English students was in the B to B+ range.

⁸ A correlation analysis is a statistical method used to determine the connection between two variables, a correlation of 1.0 is the strongest relationship possible.

Table 1. Transfer-level English Special Admit Sample Demographics

	11 th Grade Special Admit Students	10 th Grade Special Admit Students
Sample Size	662	129
Female	59%	50%
English language learners (ELLs)	18%	35%
Ethnicity		
Asian	18%	26%
Black	7%	6%
Filipinx	4%	3%
Latinx	20%	36%
Native American	1%	0%
Pacific Islander	1%	1%
Multi-ethnic	1%	0%
White	38%	19%
Unknown	12%	9%
Educational Goal		
Credits for diploma	35%	28%
Undecided	22%	22%
Uncollected	12%	5%
Associate degree then BA/BS	10%	14%
Intellectual development	7%	7%
BA/BS without associate degree	5%	8%
Discover career interests	3%	7%
Improve English or math skills	3%	5%
All other	3%	5%
High School GPA		
Average (Standard deviation)	3.17 (0.65)	3.21 (0.72)

SLAM

For special admit students pursuing a transfer-level math course in statistics or liberal arts math (Table 2), females represented the majority with 56% of 10th grade special admit students, and 52% of 11th grade special admit students. Relative to their representation in the English special admit student samples, Asian students represented a much larger share of SLAM special admit students in both the 10th and 11th grade (38% and 37%, respectively). White students were the second largest group in both 10th and 11th grade (25% and 26%, respectively), followed by Latinx students (19% and 18%, respectively). Similar to the English special admit students, a large share of 11th grade special admit SLAM students were undecided as to their educational goal (22%). The largest positively identified educational goal of special admit 10th and 11th grade SLAM students was the pursuit of credits for a high school diploma (25% and 28%, respectively). English is a second (or other) language for about a quarter of special admit SLAM students in both 10th and 11th grade. Average high school GPAs between a B+ and an A- indicates that these were generally strong students who were seeking special admit enrollment opportunities in collegiate SLAM courses.

Table 2. SLAM Math Special Admit Student Sample Demographics

	11 th Grade Special Admit Students	10 th Grade Special Admit Students
Sample size	143	16
Female	52%	56%
English language learners (ELLs)	24%	27%
Ethnicity		
Asian	37%	38%
Black	1%	13%
Filipinx	3%	0%
Latinx	18%	19%
Native American	0%	0%
Pacific Islander	1%	0%
Multi-ethnic	0%	0%
White	26%	25%
Unknown	15%	6%
Educational Goal		
Credits for diploma	28%	25%
Undecided	20%	6%
Uncollected	18%	6%
Intellectual development	9%	13%
Associate degree then BA/BS	7%	6%
BA/BS without associate degree	6%	19%
Discover career interests	6%	19%
Improve English or math skills	4%	0%
All other	3%	6%
High School GPA		
Average (Standard deviation)	3.49 (0.50)	3.65 (0.47)

BSTEM

For special admit students specifically pursuing BSTEM coursework at the community college (Table 3), females represented nearly half (49%) of the 10th grade special admit students. In the 11th grade sample, which was larger, the representation of female students fell to 40%. Asian students were the largest ethnic group by far among 10th grade BSTEM special admit students (72%) and 11th grade special admit students (44%). White students were the second most common identified ethnicity among 10th and 11th grade special admit BSTEM students (10% and 25%, respectively), although students with an unknown ethnicity were also fairly common (11% and 13%, respectively). Latinx students represented 4% of the 10th grade sample and 13% of the 11th grade sample. English language learners were common among special admit BSTEM students, representing 50% of the 10th grade sample, and 34% of the 11th grade sample. Among 10th grade special admit students, the most common educational goal was undecided (34%), followed by earning credits for high school diploma (21%). This pattern is reversed among 11th grade special admit students with the most common educational goal being earning credits for high school diploma (36%) followed by undecided (23%). The average high school GPA of special admit students who pursued BSTEM coursework was between a B+

and an A-, indicating that these were strong students who sought out special admit enrollment opportunities in BSTEM courses.

Table 3. BSTEM Math Special Admit Student Sample Demographics

	11 th Grade Special Admit Students	10 th Grade Special Admit Students
Sample size	694	137
Female	40%	49%
English language learners (ELLs)	34%	50%
Ethnicity		
Asian	44%	72%
Black	2%	0%
Filipinx	2%	3%
Latinx	13%	4%
Native American	0%	0%
Pacific Islander	0%	1%
Multi-ethnic	1%	0%
White	25%	10%
Unknown	13%	11%
Educational Goal		
Credits for diploma	36%	21%
Undecided	23%	34%
Uncollected	9%	9%
BA/BS without associate degree	9%	10%
Intellectual development	8%	15%
Associate degree then BA/BS	6%	4%
Improve English or math skills	5%	4%
Discover career interests	2%	2%
All other	3%	3%
High School GPA		
Average (Standard deviation)	3.45 (0.51)	3.64 (0.47)

Results

English

Tables 4 and 5 provide the success rates of special admit 10th and 11th grade students who enrolled in transfer-level English as their first English course in the community college system. When classified by their 9th and 10th grade cumulative GPAs, 10th and 11th grade special admit students in the mid-tier band (i.e., high school GPA from 1.90 to 2.59) and the lowest GPA band (i.e., less than 1.90 high school GPA) have similar success rates in transfer-level English as the overall group of all postsecondary students who were classified on the basis of 11th grade cumulative GPA. There is an outlier of 100% success rate for the mid-tier 10th grade special admit students, though due to the small sample size of that cell (n=13), the results would most likely not be replicated in future samples. The majority of students were classified in the highest

GPA band (i.e., those with high school GPAs of 2.60 or higher) and those students in the highest performance band tend to have higher success rates than observed for non-special admit postsecondary students.

Table 4. 10th Grade Special Admit Students’ Success in First Transfer-level Community College English Course, Disaggregated by 9th Grade GPA

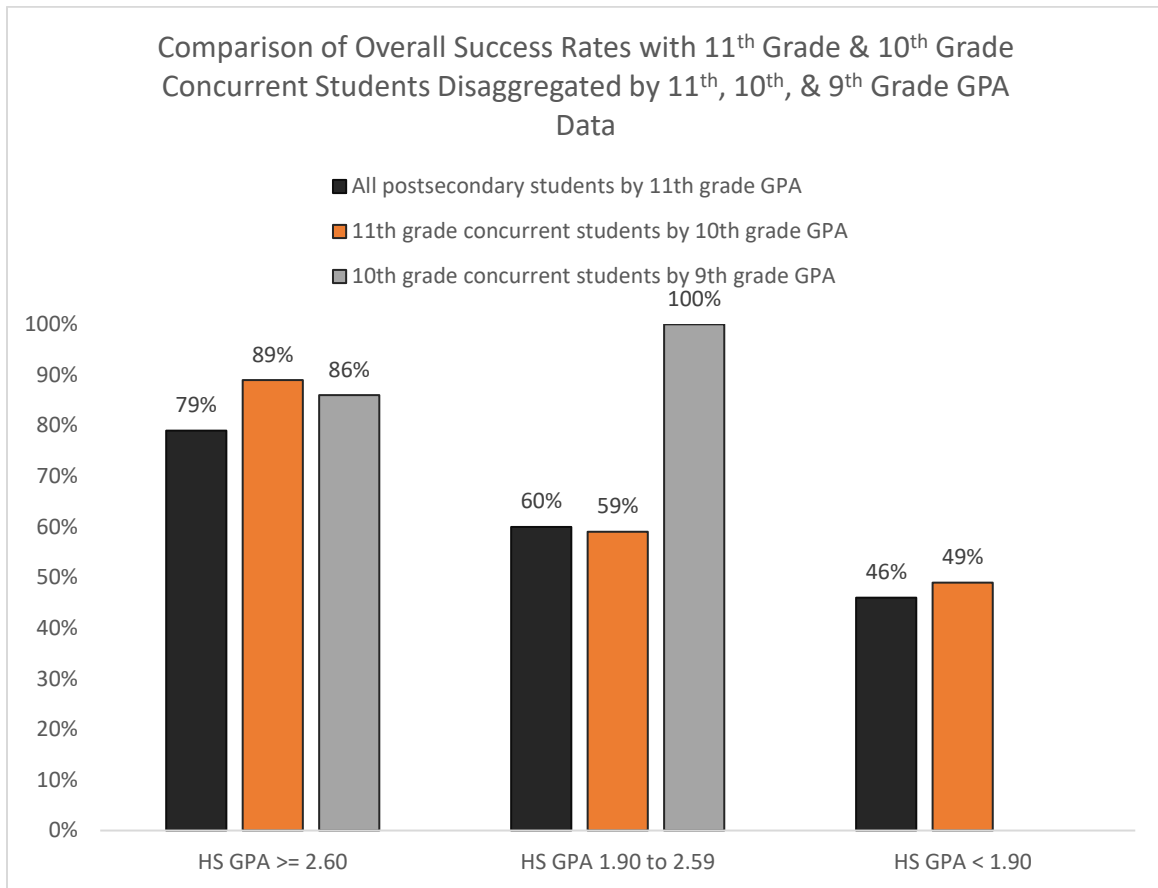
HS Performance Band	Count & %	Non-success	Success	Total
HS GPA < 1.90	Count	4	4	8
	%	50%	50%	100%
HS GPA 1.90 to 2.59	Count	0	13	13
	%	0%	100%	100%
HS GPA >= 2.60	Count	15	93	108
	%	14%	86%	100%
Total	Count	19	110	129
	%	15%	85%	100%

Table 5. 11th Grade Special Admit Students’ Success in First Transfer-level Community College English Course, Disaggregated by 10th Grade GPA

HS Performance Band	Count & %	Non-success	Success	Total
HS GPA < 1.90	Count	20	19	49
	%	51%	49%	100%
HS GPA 1.90 to 2.59	Count	31	44	75
	%	41%	59%	100%
HS GPA >= 2.60	Count	63	485	548
	%	12%	89%	100%
Total	Count	114	548	662
	%	17%	83%	100%

In general, 10th and 11th grade special admit students perform similarly to postsecondary community college students when their 9th and 10th grade high school GPAs are used to sort them into the default placement categories. For comparison purposes, the success rates of all students are shown in Figure 1, disaggregated by 11th grade cumulative GPA.

Figure 1. English: Comparison of Overall Success Rates with 11th grade & 10th Grade Special Admit Students' Success Rates, Disaggregated by 11th, 10th, & 9th Grade GPA Data



SLAM

Tables 6 and 7 provide the success rates of special admit 10th and 11th grade students who enrolled in transfer-level statistics or liberal arts math (SLAM) as their first math course in the community college system. There are relatively few 10th grade students ($n=16$) in the sample who pursued transfer-level statistics at the community college and those who did tended to be in the highest performance tier (i.e., those with high school GPAs of 3.00 or higher or those with a 2.30 or higher and had passed a high school precalculus class). Given that there was only one 10th grade student in the lowest performance band and no 10th grade students in the mid-tier band, those two groups are omitted from the performance comparison in Figure 2. Among 11th grade special admit students who took a SLAM course, there were only four in the lowest performance band, so that group is omitted from the performance comparison in Figure 2, as well.

Table 6. 10th Grade Special Admit Students' Success in First Transfer-level Math Course, Disaggregated by SLAM GPA and Coursework Rules Using 9th Grade High School Data

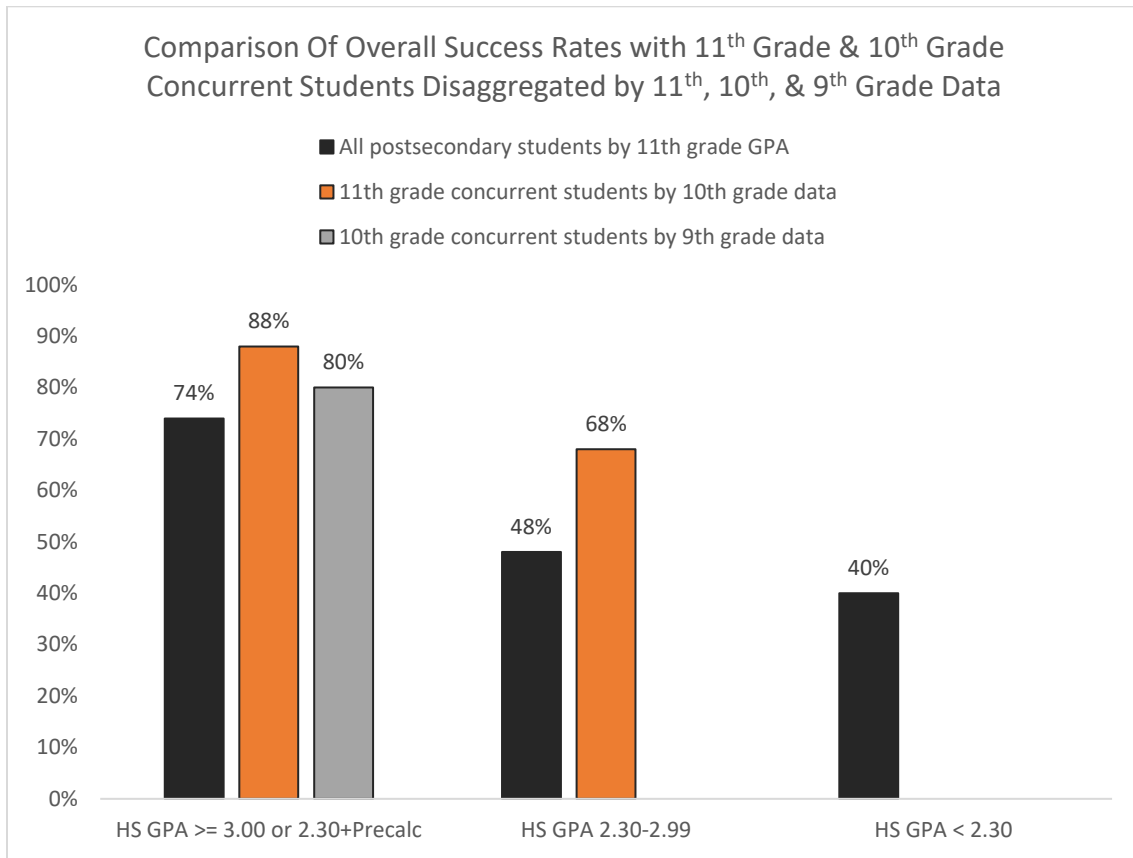
HS Performance Band	Count or %	Non-success	Success	Total
HS GPA < 2.30	Count	1	0	1
	%	100%	0%	100%
HS GPA 2.30-2.99	Count	0	0	0
	%	--	--	--
HS GPA >= 3.00 or 2.30 + Precalculus	Count	3	12	15
	%	20%	80%	80%
Total	Count	4	12	16
	%	25%	75%	100%

Table 7. 11th Grade Special Admit Students' Success in First Transfer-Level Math Course, Disaggregated By SLAM GPA and Coursework Rules Using 10th Grade High School Data

HS Performance Band	Count or %	Non-success	Success	Total
HS GPA < 2.30	Count	0	4	4
	%	0%	100%	100%
HS GPA 2.30-2.99	Count	7	15	22
	%	32%	68%	100%
HS GPA >= 3.00 or 2.30 + Precalculus	Count	14	103	117
	%	12%	88%	100%
Total	Count	21	122	143
	%	15%	85%	100%

As shown in Figure 2 (and Tables 6 and 7), when classified by their 9th and 10th grade cumulative GPAs, respectively, both 10th and 11th grade special admit students in the top performance band (i.e., those with high school GPAs of 3.00 or higher or those with a 2.30 GPA or higher and who had passed a high school precalculus class) tend to have higher success rates in transfer-level statistics than postsecondary students in the same performance tier who are classified by their 11th grade high school grades. Additionally, success rates for mid-tier 11th grade special admit students were also substantially higher than those for all mid-tier postsecondary students (68% vs. 48%).

Figure 2. SLAM: Comparison of Overall Success Rates with 11th Grade & 10th Grade Special Admit Students' Success Rates, Disaggregated By 11th, 10th, & 9th Grade GPA Data⁹



BSTEM

Tables 8 and 9 provide the success rates of special admit 10th and 11th grade students who enrolled in transfer-level BSTEM as their first math course in the community college system. There are relatively few 10th grade BSTEM students (n=4) in the lowest performance tier (i.e., high school GPA less than 2.60) in the sample, limiting our ability to draw conclusions about the performance of lower GPA 10th grade special admit students in community college coursework. Due to the small sample size, the low-tier 10th grade special admit group is omitted from Figure 3. All other groups of 10th and 11th grade special admit students were considerably larger and they also tended to have substantially higher success rates in BSTEM coursework than comparable postsecondary students in the same performance bands. In no case do the special admit students enrolled in BSTEM have lower success rates than comparable postsecondary students disaggregated by the 11th grade data.

⁹ Cells with fewer than 10 cases not shown.

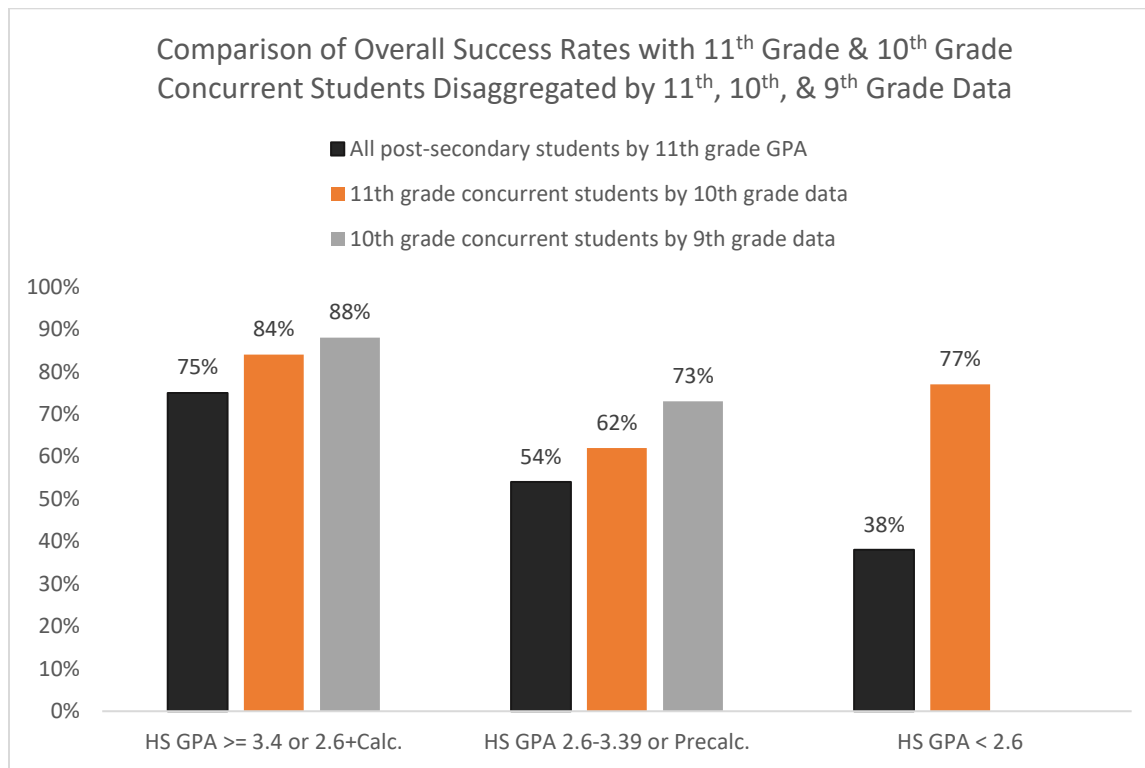
Table 8. 10th Grade Special Admit Students' Success in First Transfer-Level Math Course, Disaggregated By BSTEM GPA and Coursework Rules Using 9th Grade High School Data

HS Performance band	Count or %	Non-success	Success	Total
HS GPA < 2.60	Count	1	3	4
	%	25%	75%	100%
HS GPA 2.60-3.39 or Precalculus	Count	7	19	26
	%	27%	73%	100%
HS GPA >= 3.40 or 2.60 + Calculus	Count	13	94	107
	%	12%	88%	100%
Total	Count	21	116	137
	%	15%	85%	100%

Table 9. 11th Grade Special Admit Students' Success in First Transfer-Level Math Course, Disaggregated by BSTEM GPA and Coursework Rules Using 10th Grade High School Data

HS Performance band	Count or %	Non-success	Success	Total
HS GPA < 2.60	Count	4	13	17
	%	24%	77%	100%
HS GPA 2.60-3.39 or Precalculus	Count	37	61	98
	%	38%	62%	100%
HS GPA >= 3.4 or 2.60 + Calculus	Count	95	484	579
	%	16%	84%	100%
Total	Count	136	558	694
	%	20%	80%	100%

Figure 3. BSTEM: Comparison of Overall Success Rates with 11th Grade & 10th Grade Special Admit Students' Success Rates, Disaggregated by 11th, 10th, & 9th Grade GPA Data¹⁰



As shown in Figure 2, special admit students in the highest BSTEM performance band (i.e., those with high school GPAs of 3.40 or higher, or 2.60 GPA or higher and who had passed a high school calculus class) had success rates from nine to 13 points higher than the highest tier post-secondary student group. Special admit students in the mid-tier performance band (i.e., high school GPA from 2.60 to 3.39, or any GPA and had passed a high school precalculus class) had success rates from eight to 19 points higher than the mid-tier postsecondary student group. Finally, 11th grade special admit students in the lowest performance band had twice the success rate of their postsecondary peers, though the sample size of special admit students in the lowest performance group was small (n=17), potentially limiting the generalizability of this finding.

GPA Correlations across High School Grades

As shown in Table 10 below, there is a strong correlation in cumulative high school GPA across grades. The 9th grade GPA of students who enrolled at the community college in the 10th grade has a correlation of 0.89 with 11th grade cumulative GPA. The correlation of 10th grade cumulative GPA with 11th grade cumulative GPA is 0.96. These **strong correlations indicate that**

¹⁰ Cells with fewer than ten cases not shown.

both 9th grade and 10th grade cumulative GPA can be considered as good proxies for 11th grade cumulative GPA.

Table 10. GPA Correlations across High School Grades

	11 th Grade Cumulative GPA
9th grade cumulative GPA for 10th grade special admit students	0.894*
10th grade cumulative GPA for 11th grade special admit students	0.962*

* $p < .001$

Discussion

In this research brief, we examined the utility of 9th and 10th grade cumulative unweighted high school GPAs for placing special admit students into community college math and English transfer-level coursework. In general, the patterns observed among high school graduates who enroll at the community college were found to hold for the special admit students in the domains of English composition and mathematics (both statistics and liberal arts math, as well as business and STEM math). When special admit student success rates deviated from those of high school graduates, the deviations tended to be positive (i.e., special admit students outperformed high school graduates with similar high school performance backgrounds).

As indicated by the relatively high average GPAs of students in the special admit math and English samples, it is likely that special admit students represent a population of high school students that is biased toward high achievers who may be more motivated to seek out challenging college-level coursework. In addition to having high GPAs, all students in the math sample had completed Algebra II before pursuing special admit math coursework opportunities, indicating that these students were indeed a more prepared subgroup of students than is found in a typical graduating high school class. This bias toward stronger students, however, does not undermine confidence in the findings because students with a range of GPAs were present in the samples. Where the sample size was large enough to support a conclusion, students in the lower GPA bands tended to outperform the overall postsecondary reference group considerably. Thus, even if in future samples the performance of special admit students in the lower GPA groups were to weaken, it could lessen considerably and still be within the expected performance parameters. Moreover, given that the nature of special admit enrollment is intentionally targeting students who are in need of an additional challenge, the bias toward students with higher GPAs would appear to be durable and likely to continue in the future.

The number of special admit students in the various samples varied considerably, with the SLAM sample being considerably smaller than the BSTEM and English samples, and the 10th grade special admit samples being smaller than the 11th grade special admit student samples. Limitations in the number of students in the lower performance tier prevented any strong conclusions regarding this group among both 10th grade and 11th grade special admit SLAM students as well as 10th grade mid-tier special admit SLAM students and lowest-tier 10th grade

special admit BSTEM students. These sample sizes are indicative of the number of students who have historically taken advantage of these pathways. For student groups with fewer than 10 cases, no conclusions are drawn and they are not included in the comparative figures (i.e., Figures 1, 2, and 3).

Where the sample size was sufficient, special admit BSTEM students tended to outperform the postsecondary students by a fairly wide margin, which may be due in part to the higher levels of high school GPA observed among this group. However, the mid-tier and lowest-tier GPA groups were particularly over-performing. It may be that these students had high math aptitude despite lower GPAs. The high percentages of English language learners (ELLs) in the BSTEM samples may also contribute to this pattern in that it may be that the overall GPA of ELL students is somewhat depressed by classes that require higher levels of English fluency, while the students nonetheless have strong math aptitude and can perform well in advanced math classes (where lower levels of English fluency are presumably less of a hindrance). In any event, the overall pattern indicates that the default performance rules do a good job of identifying students who are highly likely to succeed in transfer-level BSTEM, SLAM, and English coursework.

English and math special admit students in low-tier and mid-tier high school performance bands had success rates comparable to those of postsecondary students when 9th and 10th grade GPA and coursework were used to disaggregate students into performance bands. These students experienced success rates in transfer-level work comparable to or better than the success rates of postsecondary students.

While we were able to use the MMAP analytical file to examine the applicability of the MMAP decision rules to special admit 10th and 11th grade students, future research will need to obtain 7th and 8th grade GPA data to evaluate the potential for placing 9th grade students who wish to concurrently enroll in math and English coursework at the community college.

The strong degree of correlation of cumulative high school GPA across 9th, 10th, and 11th grades in high school may in part explain why the results for special admit students so closely mirror the results for all students in the MMAP analytical file.

Conclusion

Success rates of special admit students in transfer-level math and English coursework were generally comparable to the success rates of the overall postsecondary population of community college students. When disaggregated by high school performance level, the performance of the students in the highest GPA band was very comparable to postsecondary students. However, BSTEM special admit students had a tendency to over-perform relative to postsecondary BSTEM students, with more variability in the mid-tier and low-tier performance GPA bands where special admit students tended to out-perform students in the overall postsecondary population with 11th grade data. While the evidence from this analysis indicates support for the use of 9th and 10th grade cumulative GPA and coursework for placing 10th and 11th grade students into community college math and English coursework, it is important to

note that a relatively small number of students were included in this analysis, especially for the 10th grade cohort. Therefore, until additional research can be conducted that expands the size of these cohorts, the application of the default placement rules to special admit students must be approached with caution and may be at the discretion of each college. There has been large growth in the size of the special admit population in the last five years, which could provide the opportunity to conduct these analyses in the future.

The analysis confirmed that 10th grade GPA coursework performs as expected for placing 11th grade special admit students into transfer-level English and BSTEM coursework across all high school performance bands. For 10th grade students wishing to enroll in transfer-level BSTEM classes at a community college, the top and mid-performance tiers were confirmed, though the sample size was insufficient to make a determination for the lowest performance tier. Finally, 9th grade high school GPA and coursework was observed to perform as expected for placing 10th grade special admit students in the top high school performance tier into transfer-level statistics, though there was an insufficient sample size to make a determination for special admit students in the mid-tier and the lowest performance tier.

It should be noted that in those cases where there were not enough cases to observe the performance of special admit students from particular performance tiers, there was no evidence that the default rules would not perform as expected. There simply was not enough information to indicate clearly if they would perform as expected. Therefore, those cases, which will most likely be quite rare, will require individual judgement. In these cases, the strong correlations observed across 9th, 10th, and 11th grades could be considered as part of the overall evidence for placement, providing an indication that the default placement rules are likely to perform as expected even for special admit students in the lower high school performance bands. When used this way, placement of younger and lower GPA special admit students into transfer-level math should be monitored and evaluated in an ongoing fashion, particularly if the number of special admit students in the lower performance bands increases.

Limitations in the number of students in the lower performance tier prevented any strong conclusions regarding the lowest tier group for both 10th and 11th grade special admit SLAM students as well as 10th grade mid-tier special admit SLAM students and lowest-tier 10th grade special admit BSTEM students. These sample sizes are indicative of the number of students who have historically taken advantage of these pathways.

In conclusion, the extension of the rule sets that are currently based on 11th grade cumulative GPA and coursework to 9th and 10th grade performance information is supported by the data, though taking into consideration the caveats and limitations discussed above, the research can provide one mechanism for colleges to explore when placing incoming special admit students.