



**2020-2021 AB 705 Implementation Update at Rio Hondo College**

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## Executive Summary

AB705 aims to have students complete transfer-level English and mathematics/quantitative reasoning (Math/QR) within their first year without requiring placement tests or pre-requisite courses. The full implementation began in Fall 2019 at Rio Hondo College (RHC). This report examines how first-year (first-time college and transfer) students did in the second year of implementation.

This report examines the progress of AB 705 implementation at RHC and focuses on five research questions:

1. Access: Did more first-year (first-time college and transfer) students take transfer-level English and Math/QR in 2020-2021 than in 2018-2019?
2. Throughput: Did more first-year (first-time college and transfer) students pass transfer-level English and Math/QR in 2020-2021 than in 2018-2019?
3. Success: How did 2020-2021 success rates compare to those for 2018-2019?
4. Equity: What were the results for different demographic groups?
5. Implementation Factors: What implementation factors could influence the results?

Findings indicated that the college continued to increase access for first-year students in transfer-level English and Math/QR courses. There were an additional 54 students (3.1% increase) taking transfer-level English and an additional 154 students (17.8% increase) taking transfer-level Math/QR courses in 2020-2021 than in 2018-2019.

The throughput results were mixed for transfer-level English and Math/QR. There was a slight decrease in first-year students passing transfer-level English (5.1% decrease) but an increase in first-year students passing transfer-level Math/QR (4.5% increase). When examining results by various student populations, a notable difference was observed among Pell recipients. Pell recipients had lower throughput for both transfer-level English and Math/QR in 2020-2021 than in 2018-2019.

Success rates for first-year students increased for transfer-level English and Math/QR. For transfer-level English, there was a 4.7 percentage point increase in the success rate from 66.2% in 2018-2019 to 70.9% in 2020-2021. For transfer-level Math/QR, there was a 7.0 percentage point increase in the Math/QR success rate from 56.4% in 2018-2019 to 63.4% in 2020-2021. An important caveat to consider while interpreting the results is that the context of the COVID-19 pandemic could influence the findings for 2020-2021. RHC experienced lower enrollments and more students taking 'EW' marks, which may explain the mixed throughput numbers yet higher success rates in 2020-2021.

When examining whether there were implementation factors that could influence the results, there continued to be a wide range of section-level success rates across transfer-level English and Math/QR courses. Most notably, ENGL101 success rates ranged between 20.0% to 100.0% while MATH130 success rates ranged between 18.2% to 100.0%.

This report concludes with implications to better address the variation in success rates with transfer-level English and Math/QR course sections and to continuously improve upon AB 705 implementation at the college.

## Introduction

AB 705 reshapes placement and basic skills policies and practices for the California community colleges in order to reduce barriers and inequities to timely completion. In line with other statewide community college initiatives aimed to narrow equity gaps and to promote student progression and completion, AB 705 focuses on students completing transfer-level English and mathematics/quantitative reasoning (Math/QR) within their first year without the need to pass placement tests or take pre-requisite courses. AB 705 also provides support courses through a co-requisite model to the transfer-level courses.

Rio Hondo College's (RHC) Office of Institutional Research and Planning (IRP) published a report in August 2020 to document the initial implementation of AB 705 in Fall 2019. This report provides an update to the previous IRP report by examining a full academic year of AB 705 implementation and using a sample of first-year (first-time college and transfer) students. Since the full implementation began in 2019-2020, this report examines how first-year students are doing in the second year of implementation.

The analysis and reporting are organized around five research questions.

1. Access: Did more first-year (first-time college and transfer) students take transfer-level English and Math/QR in 2020-2021 than in 2018-2019?
2. Throughput: Did more first-year (first-time college and transfer) students pass transfer-level English and Math/QR in 2020-2021 than in 2018-2019?
3. Success: How did 2020-2021 success rates compare to those for 2018-2019?
4. Equity: What were the results for different demographic groups?
5. Implementation Factors: What implementation factors could influence the results?

## Method

IRP's August 2020 report on the initial implementation of AB 705 was focused on comparing students in the Fall 2018 semester (pre-AB 705 implementation) to the Fall 2019 semester (first semester of full AB 705 implementation) and included a sample of students who took transfer-level English and Math/QR for the first time. This report serves as an update to the previous report by examining the progress of AB 705 implementation within a full academic year and by tracking first-year (first-time college and transfer students) at RHC.<sup>1</sup> Given that the previous report was limited to comparisons between two semesters, this report expanded the analysis to a full academic year to allow students to access and complete their transfer-level English and Math/QR courses within the year. There may be students who did not successfully complete their transfer-level English or Math/QR course in the Fall semester but did successfully complete in the Spring semester. In addition, initiatives like AB 705 and the Student Equity and Achievement Program aims to boost completion of these transfer-level courses within students' first year at the community colleges. Therefore, this report selected a sample of first-time college and first-time transfer students instead of all students taking transfer-level English and Math/QR for the first time.

There were two samples for the analysis: one for transfer-level English and the other for transfer-level Math/QR. Table 1 displays the headcount for students in the two samples. Both samples excluded students who solely took Public Safety Advanced In-Service Training or Apprenticeship courses as they did not need to fulfill general education requirements. Both samples also excluded students who had

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<sup>1</sup> Academic year included the leading Summer, Fall, and Spring terms.

previously taken any English or Math/QR course in case they have a different set of knowledge and experiences that may influence the results.<sup>2</sup>

**Table 1. Headcounts in First-Year (First-Time College and Transfer) Students Sample**

Subject	AY 2018-2019 Count	AY 2020-2021 Count
English	1,770	1,824
Math/QR	864	1,018

Note. Headcounts for AY 2020-2021 included students with ‘EW’ marks.

The transfer-level English sample included all first-year (first-time college and transfer) students who took ENGL101 (College Composition and Research) in either 2018-2019 or 2020-2021. This sample excluded students who took any English, English as a New Language, or Educational Development 030 (EDEV030) course before ENGL101.<sup>3</sup>

The transfer-level Math/QR sample included all first-year (first-time college and transfer) students who took any transfer-level Math/QR in either 2018-2019 or 2020-2021.<sup>4</sup> This sample excluded students who took any Math/QR courses before the transfer-level Math/QR courses.

The sampling criteria selected all first-time college and first-time transfer students enrolled in ENGL101 or transfer-level Math/QR who began in the Fall semester of 2018-2019 and 2020-2021, so that students had the full year to fulfill the transfer-level English or Math/QR courses. Next, students with prior RHC enrollments in either English or Math/QR or had transferred in a relevant course at any time were excluded from the sample.

For the first four research questions (access, throughput, success, and equity), the student counts refer to the first-year students in transfer-level English and Math/QR samples. Students with “Excused Withdrawal” (EW) marks were counted in the enrollment and access numbers but excluded in the throughput and success rate calculations. There were cases in which students retook a transfer-level English or Math/QR course in the Spring semester because they did not successfully complete the course in the Fall semester. Given several transfer-level Math/QR course options, there were also cases in which students took more than one transfer-level Math/QR course within the academic year. In all of these cases, students were counted once in the access numbers if they took any ENGL101 or transfer-level Math/QR course and students’ highest level of completion was used for the throughput and success rate numbers. For the last research question (implementation factors), the success rates included all students in each ENGL101 or Math/QR course section.

An important caveat to consider when interpreting the results is that the context of the COVID-19 pandemic could influence the findings for 2020-2021. RHC experienced lower enrollments and more

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<sup>2</sup> There is a possibility that a small number of students in the sample could have taken an English or Math/QR course at another college without transferring the course to RHC.

<sup>3</sup> EDEV030 (English Skills) is a basic writing skills course designed for students with learning disabilities.

<sup>4</sup> Transfer-level Math/QR included 14 courses from the Mathematics department (MATH130, MATH130H, MATH140, MATH150, MATH160, MATH170, MATH175, MATH180, MATH190, MATH190H, MATH191, MATH250, MATH260, and MATH270), one course from the Finance department (FIN101), and one course from the Psychology department (PSY190).

students taking 'EW' marks in 2020-2021.<sup>5</sup> The number of all first-year students who began in the Fall semester decreased from 3,948 in 2018-2019 to 3,114 in 2020-2021. The numeric decrease of 834 first-year students represents a 21.1% decline from 2018-2019 to 2020-2021. Given that there were substantially more students who took 'EW' marks in 2020-2021 than in 2018-2019, success rates were likely higher in 2020-2021 because these marks were not included in the calculation.

## Results

### Transfer-Level English

#### **AB 705 Implementation at RHC**

RHC's primary transfer-level English course is ENGL101 (College Composition and Research), which is designed for students to fulfill the general education requirement for Written Communication.

As part of AB 705 implementation, students can enroll directly in ENGL101 without taking a placement test or prerequisite course. Students with a high school grade point average (GPA) at or above 2.6 could enroll in ENGL101 without taking a co-requisite course. Students with a high school GPA between 1.9 and 2.5 could enroll in ENGL101 along with a one-unit co-requisite course (ENGL010S). Students with a high school GPA at or below 1.8 could enroll in ENGL101 along with a two-unit co-requisite course (ENGL010SP) (See Appendix A for a full list of the corequisite placement guidelines for English, Math/QR, and other subjects). In 2020-2021, there were 171 sections of ENGL101 with 29 sections of ENGL010S and 11 sections of ENGL010SP.

#### **Access**

The first research question addressed access: *Did more first-year (first-time college and transfer) students take transfer-level English in 2020-2021 than in 2018-2019?* The number of first-year students taking ENGL101 slightly increased from 1,770 in 2018-2019 to 1,824 in 2020-2021. There was a total increase of 54 students, representing a 3.1% growth of students accessing the course compared to 2018-2019 (see Table 1).

#### **Throughput and Success Rates**

The second research question focused on "throughput" or number of successful completers: *Did more first-year (first-time college and transfer) students pass transfer-level English in 2020-2021 than in 2018-2019?*<sup>6</sup> As shown in Table 2, the number of first-year students passing ENGL101 slightly decreased from 1,171 in 2018-2019 to 1,111 in 2020-2021. There was a numeric decrease of 60 students in which 5.1% fewer students passed the course in 2020-2021 than in 2018-2019.

**Table 2. Successful Completions by First-Time College and Transfer Students in ENGL101**

AY 2018-2019 Count	AY 2020-2021 Count	Difference in Count	Difference in Percentage
1,171	1,111	-60	-5.1%

The third research question addressed the rate of successful completions: *How did 2020-2021 success rates compare to those for 2018-2019?* The success rate is the percentage of students who complete the

<sup>5</sup> 'EW' marks do not negatively impact academic progress requirements or success calculations. Many students took 'EW' marks and did not finish courses due to the COVID-19 pandemic. These students could have received a 'D', 'F', or 'W' mark under usual conditions but were instead not counted in the success calculations in 2020-2021.

<sup>6</sup> All references in this report to "passing" or "success" mean a student received a 'C' grade or better.

course with a 'C' grade or better. Although the throughput of first-year students in ENGL101 decreased, there was a 4.7 percentage point increase in the success rate from 66.2% in 2018-2019 to 70.9% in 2020-2021 (see Table 3).

**Table 3. Success for First-Time College and Transfer Students in ENG101**

		Academic Year		
		AY 2018-2019 (N=1,770)	AY 2020-2021 (N=1,567)	Total
Success	No	599	456	1,055
	Yes	1,171	1,111	2,282
	Rate	66.2%	70.9%	68.4%

Note. Success rates excluded students with 'EW' marks.

To test whether there was a statistically significant relationship between course success and the academic year, a chi-square statistic ( $\chi^2$ ) test was conducted. This test compares the actual counts to the expected counts between two categorical variables. The chi-square analysis revealed that there was a statistically significant difference ( $\chi^2= 8.64, p=.003$ ) in ENGL101 success rates between 2018-2019 and 2020-2021. The ENGL101 success rate for first-year students was higher in 2020-2021 than in 2018-2019.

### Equity

The fourth research question focused on equity: *What were the results for different demographic groups?* The analysis examined ENGL101 throughput and success rates for first-year students from various sociodemographic groups including race/ethnicity, gender, ethnicity-gender, age group, and Pell status.<sup>7</sup> Noteworthy changes in throughput are highlighted in this section (see Table 4). There were decreases in ENGL101 throughput among Asian or Pacific Islander students, Latino males, those ages 20 to 24, and Pell recipients from 2018-2019 to 2020-2021.<sup>8</sup>

**Table 4. Numbers of Successful Completions in ENGL101 by Demographic Groups**

Group	AY 2018-2019 Count	AY 2020-2021 Count	Difference in Count	Difference in Percentage
Asian or Pacific Islander	75	55	-20	-26.7%
Latino Male	489	426	-63	-12.9%
Age 20 to 24	83	62	-21	-25.3%
Age 25 to 39	58	71	13	22.4%
Pell Recipient-No	375	523	148	39.5%
Pell Recipient-Yes	796	588	-208	-26.1%

Further examination revealed no statistically significant differences by sociodemographic groups between the two years except for Pell recipients. The chi-square analysis revealed that there was a statistically significant difference ( $\chi^2= 9.62, p=.002$ ) in ENGL101 success rates among Pell recipients between 2018-2019 and 2020-2021. While the ENGL101 throughput of Pell recipients decreased by

<sup>7</sup> RHC combined students into three ethnicity-gender groups: Latino Female, Latino Male, and All Other as the California Community College Chancellor's Office encourages colleges to disaggregate results by ethnicity and gender to analyze equity gaps.

<sup>8</sup> Pell recipient was used as an indicator for low socioeconomic status.

26.1% from 2018-2019 to 2020-2021, the success rate increased from 65.8% in 2018-2019 to 72.3% in 2020-2021. Some important considerations to note were that there was a lower share of overall first-year students who were Pell recipients in 2020-2021 (43.1%) than in 2018-2019 (60.4%) and 'EW' marks were not counted in the success calculation.

The report also examined whether there were differences between student populations within a group for each academic year. Within race/ethnicity, there were no statistical differences in ENGL101 success between Latinx students and White students or between students of color and White students in 2018-2019 or in 2020-2021.<sup>9</sup> Similarly, within Pell status, there were also no statistical differences in success between non-Pell and Pell recipients in 2018-2019 or in 2020-2021.

**Implementation Factors**

The fifth research question addressed implementation factors: *What implementation factors could influence the results?* The report examined the range of success rates across ENGL101 sections for 2020-2021. The analysis included the success rates of all students (not only first-year students) across 171 sections of ENGL101 in 2020-2021.

The average success rate for ENGL101 was 68.0%. The expected range of success rates was between 64.8% to 71.2% (see Table 5). The expected range of success rates was calculated using a 95% confidence interval. The confidence interval generates a range of values that is estimated to contain the population mean. In this case, there was 95% certainty that the range of values contained the population mean.

The ENGL101 sections had a wide range of success rates, with the lowest success rate for one section being 20.0% to the highest success rate for another section being 100.0% (see Table B1 in Appendix B for distribution of success rates and enrollments by section).

**Table 5. Section Success Rates for ENGL101 in AY 2020-2021**

<b>Mean</b>	68.0%
<b>Standard Deviation</b>	21.1%
<b>Median</b>	68.8%
<b>Minimum</b>	20.0%
<b>Maximum</b>	100.0%
<b>Range</b>	80.0%
<b>Number of Sections</b>	171
<b>95% Confidence Interval</b>	[64.8%, 71.2%]

Given the wide range of success rates within ENGL101, it was important to examine whether there were any patterns of observations for the group of instructors with success rates below and above the average that could help explain the variation across sections. As shown in Table 6, there were 54 instructors teaching 171 ENGL101 sections in 2020-2021. For the purposes of this report, the group of instructors with the lowest, average, and highest success rates are highlighted in this section. For the lowest success rate group, it included three instructors teaching 13 sections in 2020-2021. Their average success rates ranged from 36.5% to 45.3%. The group with average success rates within the expected

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<sup>9</sup> The students of color category included American Indian or Alaskan Native, Asian or Pacific Islander, Black or African American, Latinx, and Other/More than one race.

range of the mean included eight instructors teaching 24 sections. Their average success rates ranged from 65.5% to 71.1%. For the highest success rate group, it included six instructors teaching nine sections. Their average success rates ranged from 92.5% to 100.0%. The findings revealed that different ENGL101 instructors had very different success rates.

**Table 6. Dispersion of Success Rates for ENGL101 by Group of Instructors**

Group	Number of Instructors	Number of Sections	Total Enrollment	Range of Average Success Rates	Average Success Rates
Lowest Success Rates (between 1 SD & 2 SD below the mean)	3	13	314	36.5%-45.3%	41.6%
Second Lowest Success Rates (between the lower point of the expected range of the mean and & 1 SD below the mean)	13	48	1,134	47.7%-64.6%	55.5%
Average Success Rates (within expected range of the mean)	8	24	569	65.5%-71.1%	68.5%
Second Highest Success Rates (between the higher point of the expected range of the mean & 1 SD above the mean)	24	77	1,911	71.4%-88.9%	78.0%
Highest Success Rates (between 1 SD & 2 SD above the mean)	6	9	238	92.5%-100.0%	97.1%
Total	54	171	4,166	--	--

Note. Enrollment included students with 'EW' marks but the success rate excluded students with 'EW' marks.

### **Summary**

The results indicated that first-year (first-time college and transfer) student access to ENGL101 increased by 3.1% from 2018-2019 to 2020-2021. Although the throughput decreased by 5.1%, there was a significant 4.7 percentage point increase in the success rate for ENGL101 in 2020-2021. This pattern of decreased throughput and increased success rate was especially apparent among Pell recipients. When examining whether there were implementation factors that could influence the results, there was a wide range of success rates across sections of ENGL101. One section had a low of 20.0% while another section had a high of 100.0%.

### **Transfer-Level Math/QR**

#### **AB 705 Implementation at RHC**

RHC's transfer-level Math/QR courses mainly involve eight courses across three academic departments (see Table 7). Although the AB 705 implementation focused on these eight courses, there were some first-year students who took higher-level Math/QR courses. There were 125 first-year students in 2018-2019 and 84 first-year students in 2020-2021 who took at least one of the following higher-level Math/QR courses: MATH170 (Elements of Calculus), MATH190 (Calculus I), MATH190H (Calculus I Honors), MATH191 (Calculus II), MATH250 (Calculus III), MATH260 (Linear Algebra), and MATH270 (Differential Equations).

As part of AB 705 implementation, students can enroll directly in transfer-level Math/QR courses without taking a placement test or prerequisite course. Depending on students' high school GPA and Math/QR courses (i.e., MATH130, MATH150, MATH160, MATH175, and MATH180), their math course is paired with an Essential Topics course (i.e., MATH013E, MATH015E, MATH016E, MATH017E, and



MATH018E) (See Appendix A for a full list of the corequisite placement guidelines for English, Math/QR, and other subjects). In 2020-2021, there were 80 sections of MATH130 with 20 sections of MATH013E, 14 sections of MATH150 with eight sections of MATH015E, 19 sections of MATH160 with five sections of MATH016E, 19 sections of MATH175 with seven sections of MATH017E, and 15 sections of MATH180 with two sections of MATH018E.

**Table 7. Math/QR Courses in AB 705 Implementation**

Department	Course Number	Course Name	Essential Topics	CSU Transfer	UC Transfer	Level
Finance	FIN101	Introduction to Financial Planning	None	Yes	No	1
Mathematics	MATH130	Statistics	MATH013E	Yes	Yes	1
Mathematics	MATH140	Mathematics for Elementary Teachers	None	Yes	Yes	1
Mathematics	MATH150	Survey of Mathematics	MATH015E	Yes	Yes	1
Mathematics	MATH160	College Algebra	MATH016E	Yes	Yes	1
Mathematics	MATH175	Plane Trigonometry	MATH017E	Yes	No	1
Mathematics	MATH180	Pre-Calculus	MATH018E	Yes	Yes	2
Psychology	PSY190	Statistics for Behavioral Sciences	None	Yes	Yes	1

Note. FIN101 transfers as elective credit for the UCs but does not meet the Math/QR requirement for the UCs.

### **Access**

The first research question addressed access: *Did more first-year (first-time college and transfer) students take transfer-level Math/QR in 2020-2021 than in 2018-2019?* The number of first-year students taking Math/QR courses increased from 864 in 2018-2019 to 1,018 in 2020-2021 (see Table 1). There was a total increase of 154 students, representing a 17.8% growth of students accessing these courses compared to 2018-2019.

This analysis was organized into four types of Math/QR courses: 1. Statistics and Liberal Arts Math (SLAM) included MATH130, MATH130H, and MATH150; 2. Business, Science, Technology, and Math (B-STEM) included MATH160 and MATH175; 3. Calculus included MATH170, MATH180 and all higher-level MATH courses; and 4. Other Transfer-Level Math/QR included FIN101, MATH140, and PSY190.<sup>10</sup> Table 8 shows the number of students taking transfer-level Math/QR courses by course type. There were increases in access across almost all Math/QR course types, but Calculus had a slight decrease from 2018-2019 to 2020-2021.

<sup>10</sup> MATH140 was not included with the other MATH course types even though the course is part of the Mathematics department. MATH140 is geared towards preparing students for teaching elementary school mathematics and involves several different types of mathematics.

**Table 8. Access of First-Time College and Transfer Students in Math/QR by Course Type**

Course Type	AY 2018-2019 Count	AY 2020-2021 Count
SLAM	508	580
B-STEM	219	307
Calculus	180	155
Other Transfer-Level	36	68
Total	864	1,018

Note. There is duplication in these counts as students can take more than one course in any course type within the academic year, therefore the numbers do not sum up to the unduplicated total.

**Throughput and Success Rates**

The second research question focused on “throughput” or number of successful completers: *Did more first-year (first-time college and transfer) students pass transfer-level Math/QR in 2020-2021 than in 2018-2019?* As shown in Table 9, the number of first-year students passing Math/QR slightly increased from 487 in 2018-2019 to 509 in 2020-2021. There was a numeric increase of 22 students in which 4.5% more students passed a Math/QR course in 2020-2021 than in 2018-2019.

**Table 9. Successful Completions by First-Time College and Transfer Students in Math/QR**

AY 2018-2019 Count	AY 2020-2021 Count	Difference in Count	Difference in Percentage
487	509	22	4.5%

The third research question addressed the rate of successful completions: *How did 2020-2021 success rates compare to those for 2018-2019?* The success rate is the percentage of students who complete the course with a ‘C’ grade or better. As shown in Table 10, there was a 7.0 percentage point increase in the Math/QR success rate from 56.4% in 2018-2019 to 63.4% in 2020-2021.

**Table 10. Success for First-Time College and Transfer Students in Math/QR**

		Academic Year		
		AY 2018-2019 (N=864)	AY 2020-2021 (N=803)	Total
Success	No	377	294	671
	Yes	487	509	996
	Rate	56.4%	63.4%	59.7%

Note. Success rate excluded students with ‘EW’ marks.

To test whether there was a statistically significant relationship between course success and the academic year, a chi-square statistic ( $\chi^2$ ) test was conducted. This test compares the actual counts to the expected counts between two categorical variables. The chi-square analysis revealed that there was a statistically significant difference ( $\chi^2= 8.53, p=.003$ ) in Math/QR success rates between 2018-2019 and 2020-2021. The Math/QR success rate for first-year students was higher in 2020-2021 than in 2018-2019.

The overall percentage-point increase in Math/QR success rates was not consistent across different types of Math/QR courses. As shown in Table 11, there was a slight increase in success rates for SLAM, a larger increase in success rates for B-STEM and Calculus, and a slight decrease in success rates for Other

Transfer-Level Math/QR. The only statistically significant difference was for B-STEM courses ( $X^2=11.44$ ,  $p=.001$ ), which may be attributed to the high number of 'EW' marks being excluded from the calculation.

**Table 11. Success Rates by Math/QR Course Type**

Course Type	AY 2018-2019 Rate	AY 2020-2021 Rate	Difference in Rate
SLAM	52.2%	56.4%	4.2% points
B-STEM	58.0%	73.1%	15.1% points
Calculus	57.2%	65.1%	7.9% points
Other Transfer-Level	80.6%	75.4%	-5.2% points
Total	56.4%	63.4%	7.0% points

Note. Success rate excluded students with 'EW' marks.

### **Equity**

The fourth research question focused on equity: *What were the results for different demographic groups?* The analysis examined Math/QR throughput and success rates for first-year students from various sociodemographic groups including race/ethnicity, gender, ethnicity-gender, age group, and Pell status. Noteworthy changes in throughput are highlighted in this section (see Table 12).

**Table 12. Numbers of Successful Completions in Math/QR by Demographic Groups**

Group	AY 2018-2019 Count	AY 2020-2021 Count	Difference in Count	Difference in Percentage
All Other (ethnicity-gender)	71	86	15	21.1%
Pell Recipient-No	175	258	83	47.4%
Pell Recipient-Yes	312	251	-61	-19.6%

Further examination revealed no statistically significant differences by sociodemographic groups between the two years except for Pell recipients. The chi-square analysis revealed that there was a statistically significant difference ( $X^2= 8.12$ ,  $p=.004$ ) in Math/QR success rates among Pell recipients between 2018-2019 and 2020-2021. While transfer-level Math/QR throughput of Pell recipients decreased by 19.6% from 2018-2019 to 2020-2021, the success rate increased from 54.4% in 2018-2019 to 63.5% in 2020-2021. Some important considerations to note were that there was a lower share of overall first-year students who were Pell recipients in 2020-2021 (43.1%) than in 2018-2019 (60.4%) and 'EW' marks were not counted in the success calculation.

The report also examined whether there were differences between student populations within a group for each academic year. Within race/ethnicity, there were no statistical differences in transfer-level Math/QR success between Latinx students and White students or between students of color and White students in 2018-2019 or in 2020-2021. Similarly, within Pell status, there were also no statistical differences in success between non-Pell and Pell recipients in 2018-2019 or in 2020-2021.

### **Implementation Factors**

The fifth research question addressed implementation factors: *What implementation factors could influence the results?* The report examined the range of success rates across Math/QR sections for 2020-2021. The analysis included the success rates of all students (not only first-year students) across all sections of Math/QR courses in 2020-2021. Table 13 displays the range of success rates for all students in each of the Math/QR courses with three or more sections in 2020-2021.

**Table 13. Section-Level Success Rates for All Math/QR Students in AY 2020-2021**

Course	Course Name	Number of Sections	Average Section Success Rate	Minimum Section Success Rate	Maximum Section Success Rate
FIN101	Introduction to Financial Planning	6	90.6%	77.1%	100.0%
MATH130	Statistics	80	68.0%	18.2%	100.0%
MATH150	Survey of Mathematics	14	66.3%	23.1%	100.0%
MATH160	College Algebra	19	74.3%	40.0%	100.0%
MATH170	Elements of Calculus	6	82.9%	68.8%	96.0%
MATH175	Plane Geometry	19	65.6%	35.6%	96.0%
MATH180	Pre-Calculus	15	64.9%	26.1%	95.2%
MATH190	Calculus I	14	73.3%	34.8%	100.0%
MATH191	Calculus II	9	82.4%	47.1%	100.0%
MATH250	Calculus III	6	78.7%	54.8%	95.7%
MATH260	Linear Algebra	3	58.8%	57.1%	62.2%
MATH270	Differential Equations	3	78.3%	60.7%	90.9%
PSY190	Statistics for Behavioral Sciences	6	78.7%	60.0%	85.3%

In particular, this report focused on MATH130 because it plays a pivotal role in the successful implementation of AB 705. MATH130 is a common transfer-level Math/QR course with a high number of sections and enrollment yet has a wide range of section-level success rates. In 2020-2021, there were 80 sections of MATH130.

The average success rate for MATH130 was 68.0%. The expected range of success rates was between 63.0% and 73.0% (see Table 14). The expected range of success rates was calculated using a 95% confidence interval. The confidence interval generates a range of values that is estimated to contain the population mean. In this case, there was 95% certainty that the range of values contained the population mean.

When examining the variation in success rates across MATH130 sections, the lowest success rate for one section was 18.2% while the highest success rate for another section was 100.0% (see Table B2 in Appendix B for distribution of success rates and enrollments by section).

**Table 14. Section Success Rates for MATH130 in AY 2020-2021**

<b>Mean</b>	68.0%
<b>Standard Deviation</b>	22.4%
<b>Median</b>	70.3%
<b>Minimum</b>	18.2%
<b>Maximum</b>	100.0%
<b>Range</b>	81.8%
<b>Number of Sections</b>	80
<b>95% Confidence Interval</b>	[63.0%, 73.0%]

Given the wide range of success rates within MATH130, it was important to examine whether there were any patterns of observations for the group of instructors with success rates below and above the

average that could help explain the variation in success rates across sections. As shown in Table 15, there were 30 instructors teaching 80 MATH130 sections in 2020-2021. For the purposes of this report, the group of instructors with the lowest, average, and highest success rates are highlighted in this section. For the lowest success rate group, it included two instructors teaching four sections in 2020-2021. Their average success rates ranged from 38.4% to 45.5%. The group with average success rates within the expected range of the mean included five instructors teaching six sections. Their average success rates ranged from 65.5% to 72.9%. For the highest success rate group, it included two instructors teaching two sections. Their average success rates ranged from 91.7% to 93.8%. The findings revealed that different MATH130 instructors had very different success rates.

**Table 15. Dispersion of Success Rates for MATH130 by Group of Instructors**

Group	Number of Instructors	Number of Sections	Total Enrollment	Range of Average Success Rates	Average Success Rates
Lowest Success Rates (between 1 SD & 2 SD below the mean)	2	4	110	38.4%-45.5%	41.9%
Second Lowest Success Rates (between the lower point of the expected range of the mean and & 1 SD below the mean)	9	33	880	45.8%-62.8%	54.2%
Average Success Rates (within expected range of the mean)	5	6	198	65.5%-72.9%	68.3%
Second Highest Success Rates (between the higher point of the expected range of the mean & 1 SD above the mean)	12	35	1,099	75.8%-89.6%	83.7%
Highest Success Rates (between 1 SD & 2 SD above the mean)	2	2	69	91.7%-93.8%	92.7%
Total	30	80	2,356	--	--

Note. Enrollment included students with 'EW' marks but the success rate excluded students with 'EW' marks.

### Summary

The results indicated that first-year (first-time college and transfer) student access to transfer-level Math/QR increased by 17.8% while the throughput increased by 4.5% from 2018-2019 to 2020-2021. In addition, there was a significant 7.0 percentage point increase in the success rate for transfer-level Math/QR in 2020-2021. When examining whether there were differences by student population, Pell recipients had lower throughput but higher success rates in transfer-level Math/QR courses in 2020-2021 compared to 2018-2019. When examining whether there were implementation factors that could influence the results, there was a wide range of success rates across sections of Math/QR (particularly MATH130). For MATH130, one section had a low of 18.2% while another section had a high of 100.0%.

### Conclusion

In the second year of RHC's full implementation of AB705, access to transfer-level English and Math/QR increased for first-year (first-time college and transfer) students. The throughput (the number of students passing these courses) results were mixed. For ENGL101, there were 60 fewer first-year students passing the course in 2020-2021 than in 2018-2019, which was a 5.1% decrease. For transfer-

level Math/QR, there was an additional 22 first-year students passing these courses in 2020-2021 than in 2018-2019, which was a 4.5% increase.

The decreases in first-year students completing ENGL101 were observed across several student populations, especially among Pell recipients. Compared to 2018-2019, there was a substantial decrease of 208 (26.1%) Pell recipients completing ENGL101 in 2020-2021. For transfer-level Math/QR, there was a general trend of increases in throughput across almost all student populations, except for Pell recipients. Compared to 2018-2019, there was a decrease of 61 (19.6%) Pell recipients completing transfer-level Math/QR in 2020-2021. It is important to keep in mind that there was a lower share of Pell recipients among all first-year students in 2020-2021 than in 2018-2019 that could influence the findings.

Although the throughput results were mixed, the success rates for first-year students in transfer-level English and Math/QR increased. For ENGL101, there was a 4.7 percentage point increase in the success rate from 66.2% in 2018-2019 to 70.9% in 2020-2021. For Math/QR, there was a 7.0 percentage point increase in the success rate from 56.4% in 2018-2019 to 63.4% in 2020-2021. Both differences were statistically significant. The higher success rates in 2020-2021 could be a reflection of the large number of students taking 'EW' marks and these marks were excluded in the success rate calculation. The positive trends in success rates were consistent across various student populations.

One of the factors that could influence AB 705 implementation was the variation in section-level success rates for ENGL101 and Math/QR (particularly MATH130). There continued to be a wide range of success rates across sections in ENGL101 and MATH130 in 2020-2021. For ENGL101, the success rates ranged from 20.0% to 100.0%. For MATH130, the success rates ranged from 18.2% to 100.0%.

## **Implications**

This report examines AB 705 implementation in the context of students taking transfer-level English and Math/QR within their first full academic year at RHC and the findings provide important implications for implementation and future research of AB 705. In order to continue successful implementation of AB 705, it is important for the college to tend to throughput and success rates of transfer-level English and Math/QR.

The throughput results were mixed for transfer-level English and Math/QR among first-year students, where ENGL101 throughput slightly decreased but Math/QR throughput slightly increased. There were overall enrollment declines of first-year students from 2018-2019 to 2020-2021. There were also 257 first-year students in the ENGL101 sample and 215 first-year students in the Math/QR sample who received 'EW' marks in 2020-2021 while there were no 'EW' marks in either sample in 2018-2019. These factors may have contributed to the decrease in ENGL101 throughput. The college should address how to increase the number of successful completions in ENGL101 while continuing the positive trend of successful completions in Math/QR for future years.

Although the results did not reveal statistically significant differences among most student populations, findings among Pell recipients warrant attention. While transfer-level English and Math/QR success rates increased among Pell recipients from 2018-2019 to 2020-2021, their throughput decreased during this timeframe. There was a lower share of first-year Pell recipients at RHC, decreases in the number of first-year Pell recipients taking transfer-level English and Math/QR, and more students receiving 'EW' marks in 2020-2021 compared to 2018-2019. Due to the COVID-19 pandemic, some students from low-

income backgrounds may have been in more vulnerable financial situations that could have impacted their likelihood of enrolling (or not) and taking 'EW' marks. The college could consider strategies that can better support students from low socioeconomic backgrounds and promote successful completion in their courses. In addition, the college should continue monitoring equity gaps in the AB 705 implementation among various student populations for future years. Though decreases in ENGL101 throughput from 2018-2019 to 2020-2021 among Asian or Pacific Islander students, Latino males, and those ages 20 to 24 were not statistically significant, the college should discuss reasons for the changes in the number of successful completions and track the progress of these groups to ensure equity gaps are not persistent. This also lends to future research to examine RHC students' experiences in the transfer-level English and Math/QR courses in order to understand their needs, challenges, and suggestions for improvement.

The findings revealed increases in success rates for transfer-level English and Math/QR from 2018-2019 to 2020-2021, yet there continued to be a wide variation in section-level success rates of the same course. The college could engage in conversations to determine acceptable success rates and the acceptable range of success rates for the transfer-level English and Math/QR courses. To inform these conversations, additional research could be conducted to examine the consistency of course policies across sections, learnings from the sections with high success rates compared to the sections with low success rates, and predictors (e.g., academic behavior, instructional characteristics) of student success in these courses.

The college could begin its focus on improving success rates for MATH130 as it has high enrollment and has implications for the successful implementation of AB 705. When MATH130 was compared to contextualized Math/QR courses (i.e., FIN101 and PSY190), the average success rate for MATH130 appeared lower than the average success rates for FIN101 and PSY190. These contextualized Math/QR courses had relatively high success rates and the ranges of success rates were much narrower than MATH130. There may be principles from the contextualized MATH/QR courses that could be applied to MATH130. In addition, there may be an opportunity for conversations about expanding and/or creating new contextualized Math/QR courses as additional options for students.

An important caveat to consider when interpreting the results is that the context of the COVID-19 pandemic could influence the findings for 2020-2021. RHC experienced lower enrollments and more students taking 'EW' marks in 2020-2021. Given that there were substantially more students who took 'EW' marks in 2020-2021 than in 2018-2019, success rates were likely higher in 2020-2021 as 'EW' marks were not included in the calculation. Findings from this report can inform college reflections and conversations about how to continuously improve on the AB 705 implementation process and the opportunities and barriers that contribute to student completion in transfer-level English and Math/QR. It will be important to continue tracking the progress of AB 705 implementation especially in a post-pandemic environment.

## Appendix A

### Rio Hondo College Corequisite and Placement Guidelines (Beginning Fall 2019)

## RIO HONDO COLLEGE • PLACEMENT BEGINNING FALL 2019

NOTE: ASK STUDENT IF AP EXAMS WERE TAKEN

### ENGLISH

High School Performance Metric	English	Required Co-Requisite	SOATEST CODE	Units
≥ 2.6	English 101 (3.5)	None	HS01	3.5
2.5 – 1.9	English 101 (3.5)	Required: English 10S (1)	E10S	4.5
≤ 1.8	English 101 (3.5)	Required: English 10SP (2)	E10SP	5.5

### OTHER ENGLISH

Any Course with ENGL 101 Pre-Requisite	CC03
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### READING (REQUIRED ONLY FOR STUDENTS FOLLOWING THE LOCAL RHC GE PATTERN)

High School Performance Metric	Reading	Required Co-Requisite	SOATEST CODE	Units
≥ 2.5	READ 101 (3.0)	None	HS02	3.0
2.49 – 2.0	READ 043 (3.0)	None	HS23	3.0
≤ 1.9	READ 022 (3.0)	Required: READ 022L (1)	HS22	3.0

### ENLA

High School Performance Metric	ENLA	Required Co-Requisite	SOATEST CODE	Units
≥ 2.4	ENLA 100 (3.0)	None	HS00	3.0
2.3 – 2.0	ENLA 034 (3.0)	None	HS34	3.0
≤ 1.9	ENLA 024 (3.0)	None	HS24	3.0



## RIO HONDO COLLEGE • PLACEMENT BEGINNING FALL 2019

NOTE: ASK STUDENT IF AP EXAMS WERE TAKEN

### MATH • STATISTICS/LIBERAL ARTS MATHEMATICS

High School Performance Metric	Math	Recommended or Required Co-Requisite	SOATEST CODE	Units
≥ 3.0	Math 130: Statistics (4)	None	M45	4
	Math 140: Math for Elem. Ed. (4)			4
	Math 150: QR in Today's World (3)			3
2.9 - 2.3	Math 130: Statistics (4)	<b>Recommended: Math 13E (1) or Supplemental Instruction [w/ coreq of Math 130]</b> None <b>Recommended: Math 15E (2) or Supplemental Instruction [w/ coreq of Math 150]</b>	M45	4/5
	Math 140: Math for Elem. Ed. (4)			4
	Math 150: QR in Today's World (3)			3/5
≤ 2.2	Math 130: Statistics (4)	<b>Required: Math 13E (1)</b> None <b>Required: Math 15E (2)</b>	M13E	5
	Math 140: Math for Elem. Ed. (4)			4
	Math 150: QR in Today's World (3)			5

High School Performance Metric	Math	Required Co-Requisite	SOATEST CODE	Units
n/a	PSY 190 (4)	none	n/a	4
TBD	FIN 101	TBD	TBD	

## RIO HONDO COLLEGE • PLACEMENT BEGINNING FALL 2019

NOTE: ASK STUDENT IF AP EXAMS WERE TAKEN

### MATH • BSTEM MATHEMATICS

High School Performance Metric	Math	Recommended or Required Co-Requisite	SOATEST CODE	Units
≥ 3.4 OR ≥ 2.6 and enrolled in HS Calculus	Math 160: College Algebra (4) Math 175: Plane Trig (3)	None	M-STEM	4 3
3.3-2.6 OR Enrolled in HS Calculus	Math 160: College Algebra (4) Math 175: Plane Trig (3)	Recommended: Math 16E (1) or Supplemental Instruction Recommended: Math 17E (1) or Supplemental Instruction	M-STEM	4/5 3/4
≤ 2.5	Math 160: College Algebra (4) Math 175: Plane Trig (3)	Required: Math 16E (1) Required: Math 17E (1)	M16E M17E	5 4

### HIGHER LEVEL MATH COURSES

High School Performance Metrics	Math	Recommended or Required Co-Requisite	SOATEST CODE	Units
≥ 3.3 & Plane Trig or Math Analysis -OR- ≥ 3.3 & Calculus	Math 170: Elements of Calculus (4)	None	M170	4
≥ 3.3 & Plane Trig or Math Analysis -OR- ≥ 3.3 & HS Calculus	Math 180: Pre-Calculus (4)	None	HS18	4
3.2 - 2.6 & Plane Trig or Math Analysis or HS Calculus		Recommended: M18E (1)	HS18	
≤ 2.5 & Plane Trig or Math Analysis or HS Calculus		Required: Math 18E (1)	M18E	
≥ 3.1 & enrolled in HS Calculus -OR- ≥ 3.5 & Pre-Calculus or Plane Trig	Math 190: Calculus I (4)	None	HS19	4

**Appendix B**

**Tables of Distribution of Success Rates and Enrollments by ENGL101 and MATH130 Sections**

**Table B1. Distribution of Success Rates and Enrollment by ENGL101 Sections in AY 2020-2021**

<b>ENGL101 Section</b>	<b>Average Success Rate</b>	<b>Total Enrollment</b>
1	20.0%	15
2	21.1%	24
3	22.2%	27
4	22.7%	22
5	25.0%	24
6	26.1%	23
7	26.1%	23
8	28.0%	25
9	28.6%	28
10	28.6%	21
11	31.6%	19
12	31.8%	22
13	33.3%	15
14	33.3%	21
15	37.5%	16
16	38.5%	26
17	38.5%	13
18	38.5%	25
19	38.5%	28
20	38.9%	23
21	38.9%	24
22	39.1%	23
23	40.0%	20
24	42.1%	19
25	42.1%	26
26	42.9%	28
27	45.0%	26
28	45.5%	22
29	45.8%	24
30	46.2%	26
31	47.6%	21
32	47.8%	23
33	47.8%	23
34	50.0%	22
35	50.0%	10
36	50.0%	24
37	50.0%	28

38	50.0%	16
39	50.0%	23
40	50.0%	26
41	52.2%	28
42	52.9%	25
43	53.3%	15
44	53.3%	24
45	53.6%	28
46	53.8%	26
47	56.3%	25
48	56.5%	23
49	56.5%	27
50	57.1%	25
51	57.1%	25
52	57.7%	26
53	57.7%	26
54	57.7%	27
55	57.9%	19
56	58.8%	25
57	58.8%	23
58	59.3%	27
59	60.0%	25
60	60.0%	25
61	60.0%	26
62	60.0%	26
63	60.9%	23
64	62.5%	25
65	63.2%	21
66	63.2%	27
67	63.6%	23
68	64.0%	25
69	64.3%	28
70	64.3%	14
71	64.3%	28
72	65.0%	26
73	66.7%	24
74	66.7%	15
75	66.7%	21
76	66.7%	18
77	66.7%	21
78	66.7%	27
79	66.7%	26

80	66.7%	27
81	66.7%	28
82	66.7%	26
83	68.2%	28
84	68.2%	27
85	68.4%	27
86	68.8%	25
87	70.4%	27
88	70.6%	17
89	70.6%	28
90	71.4%	21
91	71.4%	28
92	72.0%	25
93	72.0%	30
94	72.2%	22
95	72.7%	26
96	73.1%	26
97	75.0%	27
98	75.0%	26
99	75.0%	26
100	76.2%	21
101	76.2%	28
102	76.2%	25
103	76.2%	27
104	76.5%	26
105	76.5%	25
106	76.5%	23
107	76.5%	24
108	76.9%	30
109	79.2%	29
110	80.0%	20
111	80.0%	24
112	80.0%	27
113	80.8%	26
114	81.0%	23
115	81.0%	25
116	81.3%	27
117	81.8%	27
118	81.8%	26
119	82.4%	26
120	82.8%	31
121	83.3%	22

122	83.3%	26
123	83.3%	24
124	83.3%	27
125	83.3%	23
126	83.3%	27
127	84.0%	30
128	84.6%	19
129	84.6%	24
130	84.6%	18
131	84.6%	27
132	85.7%	28
133	85.7%	27
134	86.4%	28
135	86.7%	23
136	87.0%	23
137	87.0%	31
138	87.5%	29
139	87.5%	26
140	88.2%	27
141	88.9%	16
142	89.5%	29
143	90.0%	27
144	90.0%	25
145	90.0%	32
146	90.5%	21
147	90.9%	20
148	90.9%	28
149	92.3%	25
150	93.3%	27
151	93.8%	28
152	93.8%	28
153	94.7%	22
154	95.0%	27
155	95.0%	26
156	95.0%	26
157	96.3%	27
158	100.0%	25
159	100.0%	27
160	100.0%	27
161	100.0%	23
162	100.0%	24
163	100.0%	21

164	100.0%	20
165	100.0%	19
166	100.0%	23
167	100.0%	28
168	100.0%	26
169	100.0%	23
170	100.0%	23
171	100.0%	25

Note. Enrollment included students with 'EW' marks but the success rate excluded students with 'EW' marks.

**Table B2. Distribution of Success Rates and Enrollment by MATH130 Sections in AY 2020-2021**

<b>MATH130 Section</b>	<b>Average Success Rate</b>	<b>Total Enrollment</b>
1	18.2%	11
2	18.2%	29
3	23.8%	21
4	27.3%	22
5	28.0%	25
6	28.6%	27
7	31.8%	22
8	33.3%	21
9	37.0%	27
10	38.5%	27
11	41.7%	36
12	43.8%	28
13	45.5%	26
14	45.8%	24
15	46.2%	26
16	46.4%	28
17	47.8%	23
18	50.0%	32
19	50.0%	32
20	52.9%	27
21	53.6%	28
22	53.8%	27
23	54.5%	26
24	55.2%	29
25	57.1%	35
26	57.1%	24
27	58.3%	33
28	58.8%	33
29	60.0%	30
30	60.0%	25

31	60.9%	23
32	62.5%	32
33	65.5%	30
34	65.6%	33
35	66.7%	33
36	66.7%	29
37	67.6%	37
38	67.6%	34
39	67.6%	34
40	70.0%	30
41	70.6%	34
42	71.1%	38
43	71.4%	37
44	71.4%	30
45	72.7%	28
46	73.7%	38
47	73.7%	38
48	75.0%	24
49	77.3%	35
50	78.3%	35
51	78.3%	38
52	78.6%	25
53	78.9%	38
54	78.9%	28
55	80.0%	20
56	81.8%	33
57	81.8%	23
58	82.8%	35
59	85.7%	39
60	85.7%	34
61	85.7%	35
62	86.7%	35
63	88.0%	29
64	89.5%	20
65	91.7%	42
66	91.7%	32
67	93.8%	27
68	94.1%	30
69	94.4%	31
70	94.4%	34
71	97.0%	39
72	100.0%	20



73	100.0%	23
74	100.0%	19
75	100.0%	23
76	100.0%	35
77	100.0%	22
78	100.0%	28
79	100.0%	30
80	100.0%	33

Note. Enrollment included students with 'EW' marks but the success rate excluded students with 'EW' marks.