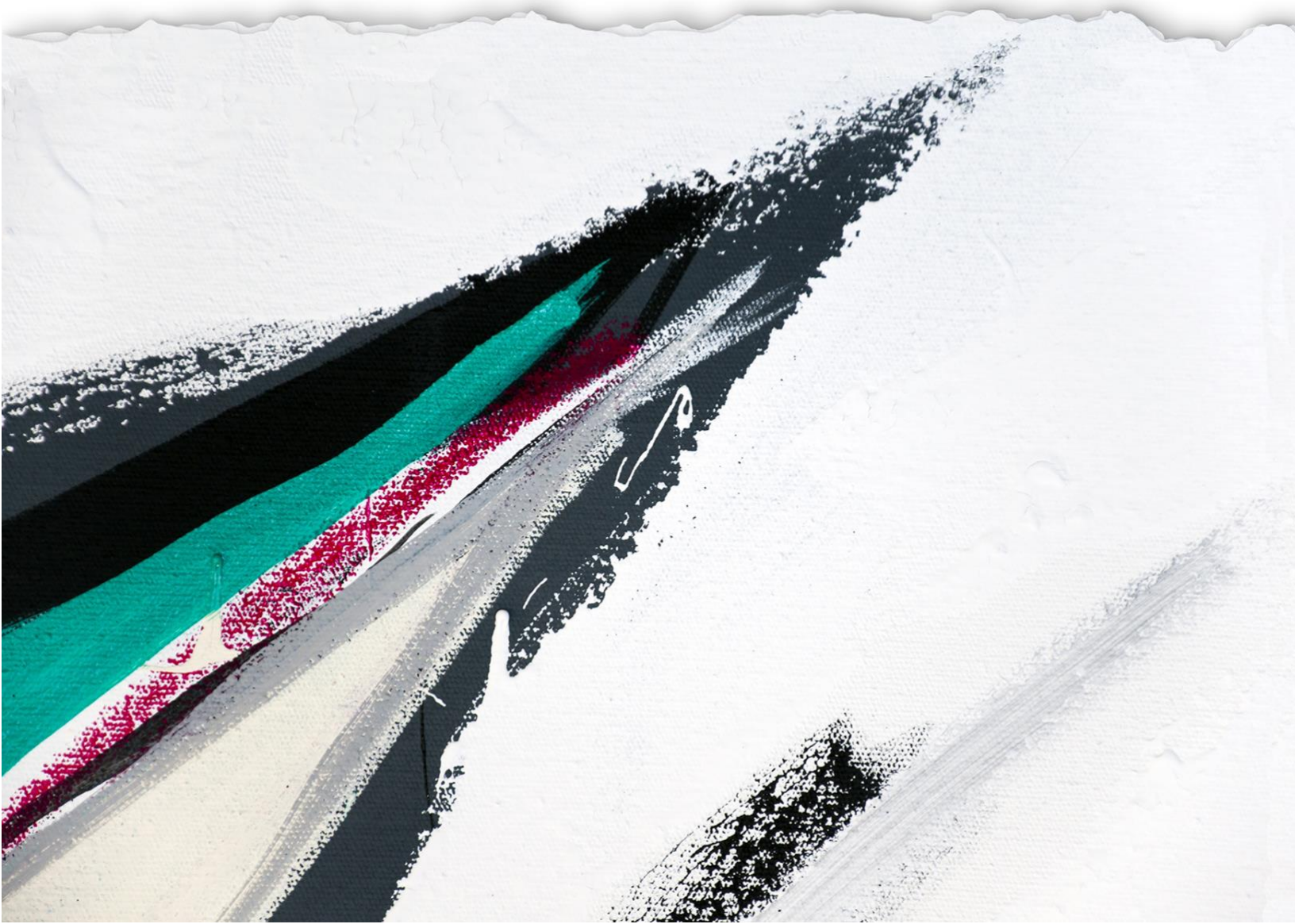


# OPTIMIZING STUDENT SUCCESS

A Report on Placement in English and Mathematics Pathways

SEPTEMBER 2020

This report was prepared by the Academic Senate  
for California Community Colleges Guided Pathways Task  
Force with consideration of feedback from  
various stakeholders throughout the California  
Community College System.



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## INTRODUCTION

Guided pathways increases attention to individual student journeys through California's community colleges, intentionally addressing innovations to optimize student success in completing the students' educational goals. This report primarily concerns placement and success in English pathways, including reading, and mathematics<sup>1</sup> pathways, including all quantitative reasoning, as it directly relates to implementation of AB 705 (Irwin, 2017, codified in California Education Code section 78213) and evaluation of that implementation. While English as a second language is very important to the success of California's student population, data regarding implementation of AB 705 in ESL is not readily available because full implementation will not begin until fall 2021 and ESL implementation guidelines are being updated as of the writing of this report (Assembly Bill 705 and 1805 Spring 2019 Guidance, 2019).

AB 705 implementation was mandatory beginning in fall 2019, but many colleges had been in various stages of using multiple measures to place students since 2017. Due to the COVID-19 pandemic, all English and mathematics courses transitioned to online instruction during Spring 2020. This situation created many issues regarding data analyses, particularly in assessing the first full year of implementation and student completion. Therefore, this report only compares trend data from fall term student course-taking and outcomes data, comparing Fall 2019, the first term of system-wide implementation, with trends from fall terms 2016, 2017, 2018.

As stated in the California Community Colleges Chancellor's Office (CCCCO) Vision for Success, "With low tuition and a longstanding policy of full and open access, the CCCs are designed around a remarkable idea: that higher education should be available to everyone. The CCCs are equally remarkable for their versatility. They are the state's primary entry point into collegiate degree programs, the primary system for delivering career technical education and workforce training, a major provider of adult education, apprenticeship, and English as a Second Language courses, and a source of lifelong learning opportunities for California's diverse communities" (California Community Colleges, 2016).

In order to achieve this vision, the CCCCCO established six goals to be met by 2022, including increasing degree completion, transfer, decreasing accumulated units, and reducing equity gaps among under-represented student groups. With any innovative project, especially one that implements system-wide change, both successes and challenges should be analyzed thoroughly. Unintended consequences should be addressed sooner rather than later so as not to lose momentum of the positive outcomes.

Using a variety of placement methods including the Chancellor's Office default placement rules (AB 705 Default Placement Rules, 2018), colleges have reported an increase in the number of students placed into and enrolling in transfer-level English and mathematics. The overall number of students succeeding in transfer-level English and mathematics has also increased. However, early evidence indicates at least two areas of concern: first, far fewer students are enrolled in any credit math or English course statewide; second, the numbers of students who are not successful have increased, particularly in historically disproportionately impacted student populations, such as some ethnic groups, foster youth, EOPS and CalWORKs<sup>2</sup>. Equity or achievement gaps are showing a trend of increasing for most ethnic groups compared to the white non-Hispanic and Asian ethnic groups.

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1 In this report, the term "mathematics" will include all quantitative reasoning in every reference. In California, not all quantitative reasoning courses are coded under the mathematics TOP code, and other courses may represent significant numbers of students, such as behavioral science statistics, biostats, and numerous others. Without appropriate coding, these courses cannot be counted in statewide data but require individual college analysis.

2 Numbers of Special Populations and other student demographics are in Appendix A. Definitions for Special populations are found in Appendix B.

Data from transfer-level English shows increased throughput<sup>3</sup> and yet also suggests opportunities to improve strategies to optimize success for all students. Data on transfer-level mathematics shows increased enrollment and success, particularly in contextualized pathways for areas such as behavioral science statistics and liberal studies math, but shows decreased enrollment in STEM (Science, Technology, Engineering and Mathematics) and decreased success in STEM related coursework.

### Guided Pathways Optimizing Success Beyond Placement



Early CCC outcomes are clear. Individual colleges report that many more students have been placed into transfer-level English and mathematics courses and that more students have enrolled in those transfer-level courses. Data also indicates that overall enrollment in the combined total of credit English or mathematics course has declined and that while more students have completed transfer, more students have also been unsuccessful<sup>4</sup>. The goal of this report is to examine student success, intended and unintended outcomes of the new English and mathematics pathways placement protocols, and variables to continue to optimize student success and the student experience.

With the intent of optimizing student success, this report focuses on data and information about the reform of student assessment and placement practices in the California community colleges in areas including the following:

- legislation, regulations, and guidance;
- early results, including both state-wide and local college analyses;
- successes, challenges; and
- considerations for evaluating local placement protocols.

This report is not intended to be a position paper on current legislation or on individual college placement and curricular processes. The goal of this report is to share information on student outcomes and encourage broad and robust dialog about how best to focus on serving local student populations, especially the historically disproportionately impacted populations. The CCCC default placement rules, which have been applied by many colleges, use only junior year high school GPA as placement criteria and place every student directly into transfer-level courses with varying degrees of support. This paper expands considerations and asks whether multiple measures placement, customized to individual students using guided pathways, could enhance and optimize student success with a more customized attention to equity and achievement gaps.

#### **Discussion questions this report and the data reviewed may stimulate:**

- Should certain placement considerations, particularly within disproportionately impacted populations, be more carefully examined to optimize student success?

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3 Throughput is cited in Title 5 §55522 and discussed on the CCCC AB 705 Implementation Memo AA 18-40 July 11, 2018, which can be found at <https://static1.squarespace.com/static/5a565796692ebefb3ec5526e/t/5b6ccfc46d2a73e48620d759/1533857732982/07.18+AB+705+Implementation+Memorandum.pdf.pdf>

4 See chart of overall credit enrollment on page 18 (number charts)

- How should decreasing success rates—whether in basic skills<sup>5</sup>, college-level, or transfer-level course work—be analyzed, and how are they being addressed?
- How do colleges balance considerations for throughput with other student outcome variables such as success rates, unsuccessful attempt consequences, retention, and persistence?
- What are the specific factors that influence transfer or basic skills success that can be identified within special population strategies such as Puente, EOPS, Umoja, and DSPS to better optimize success and reduce equity and achievement gaps?
- What has occurred regarding Statistics and Liberals Arts Mathematics (SLAM) and STEM mathematics enrollment and success, and are any implications apparent for specific student populations?
- Do opportunities exist to innovate and serve students—particularly those traditionally underserved—with tailored guidance and support to optimize success from an individual student perspective?
- How are full-time and part-time students served with newly designed pathways and placement protocols?

## LEGISLATION, REGULATIONS, GUIDELINES, AND IDEAS

Assembly Bill 705 (Irwin, 2017) was enacted with a legislative intent for colleges to work collaboratively to gain access to high school data and implement processes that integrated high school performance data into placement processes. The goal of the act was to ensure that prepared students are not placed into remedial education unless they are highly unlikely to succeed in transfer-level courses, thus providing access to courses for which students are prepared without undue barriers.<sup>6</sup>

Title 5 Regulations for AB 705 implementation were written to ensure that students are not placed into remedial courses that might delay or deter their educational progress unless evidence suggests they are highly unlikely to succeed in college-level coursework. The California Community Colleges System had been working on basic skills or remedial education reform, including a more comprehensive use of multiple measures placement, for more than a decade. Within the two years prior to the bill's passage, publications from the Public Policy Institute of California, the Campaign for College Opportunity, the Community College Research Center, and other policy or advocacy groups suggested that community colleges were still placing too many students into remediation and that significantly more students would complete transfer requirements in English and mathematics if enrolled directly into transfer-level courses. Much of the research cited by these publications and incorporated into the legislation suggests that when used as the primary criterion for placement, assessment tests tend to under-place students and that a student's high school performance is a stronger predictor of success in transfer-level courses than standardized placement tests alone. Two specific research items indicate that the more variables considered in the placement process, the more likely a student is to be placed appropriately.

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<sup>5</sup> The term basic skills generally refers to coursework prior to transfer-level and is also commonly referred to as remedial coursework in other states. ESL in California is not considered basic skills. "Instruction in English as a second language (ESL) is distinct from remediation in English. Students enrolled in ESL credit coursework are foreign language learners who require additional language training in English, require support to successfully complete degree and transfer requirements in English, or require both of the above. Under AB 705, a student enrolled in ESL instruction will maximize the probability that the student will enter and complete degree and transfer requirements in English **within three years**" (AB 705 ESL Advisory Committee, 2018).

<sup>6</sup> Interested parties should reference the actual legislation to understand the goals and thereby evaluate implementation success per the intent of the legislature.

- “Multiple measures placement systems that use alternative measures alongside the traditional tests will potentially provide more accurate results and better student outcomes.” (Belfield and Crosta, 2012)
- “A number of studies have examined the use of alternative or supplementary information to more accurately place community college students in English and mathematics. These studies generally indicate that high school achievement provides predictions of course outcomes in English and mathematics that are superior to predictions based solely on placement exam scores (Bahr, 2016; Ngo & Kwon, 2015; Scott-Clayton et al., 2014)” (Bahr, P.R, et al, 2019).

Such conclusions ultimately resulted in AB 705, now codified in California Education Code section 78213, which includes the following language: “A community college district or college shall maximize the probability that a student will enter and complete transfer-level<sup>7</sup> coursework in English and mathematics within a one year timeframe and use, in the placement of students into English and mathematics courses in order to achieve this goal, one or more of the following measures:

- High school coursework.
- High school grades.
- High school grade point average.”

All community colleges were given until fall of 2019 to be in full compliance with the new legislation.

Although the use of multiple measures for placement has been required for years, the implementation and results of placement processes left much to be desired. In fact, few proponents would have argued that prior to 2019 the placement system was working well. Many faculty would agree that some students were taking basic skills coursework unnecessarily and that the long sequence of coursework did little to expeditiously advance students towards their educational goals. However, most faculty would also argue that students benefited from gaining knowledge and skills found in basic skills coursework. Colleges needed to find a solution that balanced the interests and needs of all students.

AB 705 was legislation designed to address the historically problematic issue of placement. It did not specify what courses should be developed and offered, nor did it prohibit any college from offering below transfer-level English or mathematics courses, if necessary, to serve students. Community colleges should offer basic skills coursework designed for those students who need it. In fact, some career-technical certificates include basic skills coursework as requirements for completion. Also, working adults who have been out of school for several years frequently benefit from taking appropriate review courses to refresh their skills, as do those individuals who never had the opportunity to study the content contained in basic skill courses.

Even though debate over AB 705 still exists throughout the CCCs, the Academic Senate for California Community Colleges (ASCCC) has been clear that once the bill was written into statute, successful implementation was the goal and the foundational level of agreement was student access and success. Discussion continues around what constitutes “student success” as well as the newly introduced term “throughput,” which is not addressed in AB 705 but was introduced but not defined in Title 5 §55522. CCCCCO Memo AA 19-17, issued on April 15, 2019, states the following:

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<sup>7</sup> AB 705 also stated that “for students who seek a goal other than transfer, and who are in certificate or degree programs with specific requirements that are not met with transfer-level coursework, a community college district or college maximizes the probability that a student will enter and complete the required college-level coursework in English and mathematics within a one-year timeframe.”

Assembly Bill (AB) 705 was unanimously passed by the legislature and signed into law by Governor Brown in October 2017. This bill is designed to accomplish several important outcomes that are paramount to the Chancellor's Vision for Success:

1. Increase the numbers of students who enter and complete transfer-level English and mathematics/quantitative reasoning in one year.
2. Minimize the disproportionate impact on students created through inaccurate placement processes.
3. Increase the number of students completing transfer-level English within three years. (AB 705 District Adoption Plan, 2019)

Section (1)(a)(4) of AB 705 addressed adverse consequences for incorrectly assigning prepared students into remediation and any barriers that excluded students from courses in which they could be successful. The CCCCCO provided statewide default placement rules for colleges that were unable to or chose not to create their own placement rules in compliance with the law and based on their local student populations. The default placement rules, founded on predictive analytics, were considered baseline and predictive and were to be evaluated and updated as data was collected on current placement. Page 3 of the July 2018 AB 705 Implementation memo states, "If a college adopts the default placement rules, the college is AB 705 compliant but that is the minimum level of compliance. There are significant opportunities for local customization and innovation in the form, delivery, and/or amount of concurrent support for students enrolled in transfer-level course work" (Assembly Bill (AB) 705 Implementation, 2018).

Increasing the number of students passing transfer-level English and mathematics is not the sole goal of the changes taking place in higher education both statewide and nationally in regard to placement. Guided pathways reform is about providing access to the courses that will enable students to be successful in completing their educational endeavors without putting up unnecessary roadblocks, such as requiring prepared students to take remedial coursework to master areas in which they have already demonstrated success, while being responsive to students that may choose or need to fill gaps in their education in order to avoid unintended consequences later in their educational pathways. Examining current data will enable colleges to modify placement as part of continuous quality improvement efforts and identify student goals to better serve each student's ability to complete a program of study and optimize educational goals consistent with guided pathways. The letter of the law is to "maximize the probability that a student will enter and complete transfer-level [or the required college-level] coursework in English and mathematics within a one-year timeframe." (AB-705 Seymour-Campbell Student Success Act, 2017). The ASCCC recognizes that individualized education goals, variations in resources, tools, available time, income, and many other factors create a need to rely on individual plans aligned with each student's educational goal to optimize success. Faculty should take seriously the outcomes of the default placement rules based on predictive analytics for maximizing throughput by rigorously collecting and analyzing data and implementing iterative placement and possibly programmatic changes as necessary.

Colleges that have compiled their own data for the Fall 2019 term have seen varying outcomes in regard to course success. A limitation of this report is that gathering statewide data for overall



success has been complicated due to coding issues.<sup>8</sup> The CCCCCO provided a two-year opportunity to implement specific local strategies. Identifying and validating these strategies are dependent on coding implementation and analysis. Reliance on the default placement rules alone does not relieve colleges of the need to analyze local data and improve practices.

Colleges were expected to provide reports on their first year of AB 705 implementation in regard to student placement and throughput. However, with the difficulties experienced in the Spring 2020 term as a result of the COVID-19 epidemic and the shift to remote learning, data may not be indicative of the success or lack thereof of a college's placement protocols. Even after colleges are able to collect and analyze appropriate data, they must be careful not to rush to sweeping conclusions. Due to COVID-19, the Fall 2020 term will be very different in format from Fall 2019, and some experts are predicting that this situation will continue into Spring 2021. Many observers are predicting that education may be entering a new normal, at least for a year and maybe longer. The CCCCCO, in consultation with the ASCCC, will continue to provide guidance to colleges on reporting requirements and implementation. In addition to ASCCC support for faculty, the CCCCCO encourages colleges to contact the CCCCCO with questions or concerns so that the CCCCCO may assist the colleges.

## METHODOLOGY

The methodology for this report included inquiries to colleges, primarily through local academic senate presidents and discipline faculty, for local data and case studies and to the CCCCCO for statewide data discussion and collaboration. Statewide data, pulled from Data Mart,<sup>9</sup> was examined using the number of students enrolled and success counts and rates in English and mathematics courses for the Fall 2019, Fall 2018, Fall 2017, and Fall 2016 terms, all disaggregated by ethnicity and special populations. Only data from fall terms was used since data from Spring 2020 was unavailable at the time of the writing of this report and due to the disruptions caused by the COVID-19 pandemic. When Spring 2020 data becomes available, caution should be exercised when comparing to other spring terms due to the COVID-19 pandemic and eventual college in-person or campus closures and shifts to online education. Although courses were examined for course basic (CB) coding to specify transfer-level English and mathematics courses (CB 25), success data could not be connected based on these codes as they were not accessible in Data Mart and CCCCCO representatives have been unable to provide access to such data. Therefore, for this paper, statewide success rates are based upon the broad taxonomy of programs (TOP) codes that include some coursework not relevant to this study and may exclude other coursework that is relevant. Without better coding by colleges<sup>10</sup> and data accessibility through the CCCCCO, specific analysis is only available at the local levels of districts or colleges. Success was defined as the number of students receiving an A, B, C or Pass grade. In addition, analysis included data from a pre-AB 705

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8 Statewide data is based on TOP (taxonomy of program) codes that include all courses within a program of study, not just transfer-level freshman English or mathematics. Such data cannot be generalized. For example, the mathematics TOP code 1701.00 includes all courses in the engineering calculus series, biological science calculus series, business calculus, differential equations, linear algebra, finite math, and a host of other higher-level mathematics courses, not just the beginning transfer-level courses often considered to be college algebra, trigonometry, and sometimes pre-calculus or others. Additionally, not all colleges include statistics courses under this TOP code. Closely examining the success of placement will require a focus on typically freshman-level courses. The CCCCCO, WestEd, and the ASCCC collaborated to create previously nonexistent course basic codes to identify the courses necessary to evaluate placement and success. To date, use of these codes has not been broadly implemented, impacting correct course interpretation. Alternatively, this study uses a report that occurred prior to full implementation of AB705, MMAP, and information from individual colleges to focus on specific courses and examine student success.

9 Data mart is the California Community Colleges Management Information System and can be found at <https://datamart.cccco.edu/DataMart.aspx>.

10 Particularly useful would be updated CB 21, CB 25, and CB 26 coding, which differentiates basic skills courses, relevant transfer courses, and support or co-requisite courses. This coding was collaboratively developed with the CCCCCO but has not been implemented.



Research and Planning Group Multiple Measures Assessment Project report that identified both access and success in percentages and numbers, including disaggregation by ethnicity. Even with these limitations, adequate data exists to consider areas of opportunity to optimize placement by examining potential unintended consequences, particularly in relation to other research nationwide.

## THE CHALLENGE

The Academic Senate for California Community Colleges has consistently recommended that implementation of AB 705 be based upon the needs of each college's student population, students' educational goals, and student needs such as constraints on time, finance, educational background, family and work obligations, and other such factors. For colleges that were not able to or chose not to customize placement for their student populations, the default placement rules could be used as an immediate methodology. Because student populations, educational programs, and curriculum vary across colleges and regions, the ASCCC supported colleges through guidelines and the creation of Title 5 Regulations that allowed the colleges to design, evaluate, and adjust placement within a two-year time span that would best serve students while meeting the requirements of the law.

Currently, the number of colleges opting to rely primarily upon the default placement rules is unclear. However, the data is clear that AB 705 implementation greatly decreased the number of sections, depth, and breadth of basic skills, preparatory, or pre-transfer course offerings and increased demand for transfer-level course offerings along with concurrent support methods. AB 705 did not require elimination of prerequisites or courses below transfer nor require that all educational goals begin with transfer-level English and mathematics within the first term. Implementation was further complicated by confusion with the new Student-Centered Funding Formula that provided incentives to the colleges for students passing both transfer-level English and mathematics within the student's first year.<sup>11</sup> Some colleges substantially reduced remedial course sections or even eliminated them overall, which has been a measure of implementation success in Public Policy Institute of California<sup>12</sup>, Campaign for College Opportunity, and California Acceleration Project articles,<sup>13</sup> although neither the ASCCC nor the CCCC recommended any percentage reduction. Colleges should evaluate their own implementations based upon student population needs and California Ed code section 66010.4 (a)(2)(A), which requires remedial instruction be provided for students that need it.

A large challenge for both local and statewide data collection will be the newly designed coding that specifically references the courses under analysis and has not been implemented broadly. Reliance on program coding for a new placement process that is focused on courses will not provide the detailed data colleges will require to make improvements. In addition, lack of access to statewide CB coding will impact English but will also cause many problems with regard to accurately assessing mathematics and quantitative reasoning outcomes.

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11 The Student Centered Funding Formula (SCFF) identified transfer level math and English completion as a performance funding metric using the student headcount by district successfully completing both a transfer-level mathematics course and a transfer-level English course with grades equivalent to C or better during the student's first academic year, excluding special admit students. Only TOP codes were used to identify courses (ECS 84750.4(f)(1)(C)). Further information on the SCFF metrics is available at <https://www.cccco.edu/-/media/CCCCO-Website/Files/Finance-and-Facilities/Student-Centered-Funding-Formula/A4-scff-201920-metric-definitions-v21222019ADA.pdf>

12 Mejia, M.C., Rodriquez, O., & Johnson, H. (2019, October). What Happens When Colleges Broaden Access to Transfer-Level Courses? Evidence from California's Community Colleges. Retrieved from <https://www.ppic.org/publication/what-happens-when-colleges-broaden-access-to-transfer-level-courses-evidence-from-californias-community-colleges/>

13 Hern, K. (2019). Getting there: Are California community colleges maximizing student completion of transfer-level math and English? A regional progress report on implementation of AB 705. Sacramento, CA: Campaign for College Opportunity & California Acceleration Project. Retrieved from <https://collegecampaign.org/wp-content/uploads/2019/09/Getting-There-FINAL-small.pdf>

English composition course placement, designed primarily to help students achieve college-level writing, research, and analytical skills, is complicated by the interaction of reading and writing skills that provide building blocks for transfer-level composition courses. Mathematics placement is nuanced by a variety of disciplines that require mathematical or quantitative reasoning skills that branch into several pathways before and after reaching transfer-level coursework. Regardless of the challenges, placement into the appropriate and most beneficial coursework begins with an understanding of the student's educational goal, incorporates multiple measures to determine the appropriate pathway that identifies the best course options, and provides support for students to be successful. Enrolling more students in transfer-level courses results in more students successfully completing transfer-level courses. Prepared students should be able to succeed, especially when support is provided. For students that desire or need more preparation, reasonable pathways and supports should be available, thus meeting students where each of them is. In a nutshell, the best placement optimizes student success on an individual basis.

In an effort to provide “the opportunity for educational success, for all qualified Californians” as stated in California Education Code section 66010.2, this paper selectively uses the term “optimize” to reflect a student-centered consideration of throughput, access, and success. A simplified example of this definition can be seen in a business model where the main goal is to optimize or maximize profit while constraints on the variables significantly impact outcomes. In this model, profit equals revenue minus cost. To optimize profit, one would simply maximize revenue and minimize cost, but both must be done at the same time. As profit increases subsequent to increased production, so does cost. Revenue is based on many variables such as price of the commodity, which is based on demand. As the price goes up, generally, demand will go down, and vice-versa. Cost is based on the cost of labor, cost of overhead, cost of materials, and other such factors. Thus, equilibrium points need to be determined. Setting up an optimization problem with human subjects—students—is much more complicated. Optimizing student success includes maximizing pass rates and numbers, minimizing unsuccessful attempt rates and numbers, maximizing retention, minimizing—and hopefully eliminating—equity and achievement gaps, and maximizing the probability that a student enters and completes transfer-level or college-level coursework within a one-year timeframe— i.e., maximizing throughput. Thus, this model becomes complicated quickly; something that appears simple, such as maximizing throughput, is quite complicated when optimizing student success.

The current CCCC default placement rules are based on a single variable: high school grade point average through the eleventh grade. Some voices argue that GPA is itself a multiple measure, consisting of multiple grades, and is the best predictor of student success when using a single variable. Others have claimed that GPA alone does not fulfill the requirement of using multiple measures for placement and have noted that GPA is much like a Likert Scale that does not by itself indicate where a student has excelled or may benefit from support or additional preparation.

While AB 705 does not prohibit assessment instruments for placement, it does prohibit colleges from using such assessment instruments that have not been approved by the California Community Colleges Board of Governors (AB-705 Seymour-Campbell Student Success Act, 2017). Title 5 §55522 states, “The Chancellor shall establish and update, at least annually, a list of the approved assessment tests and instruments for use in placing students in English, mathematics or English as a Second Language (ESL) courses and guidelines for their use by community college districts. When using an English, mathematics, or ESL assessment test for placement, it must be used with one or more other measures to comprise multiple measures.” However, at this time the Board of Governors has not approved any assessment instruments for placement in English or mathematics.

Although no placement instruments are currently approved for use by colleges, some guidance may be beneficial in determining students' placement. In April 2019, the Chancellor's office released its

AB 705 Guided and Self Placement Guidance and Adoption Plans Instructions, which provided provisional approval by the chancellor for the following under Title 5 Regulations 55522:

District placement methods based upon guided placement, including self-placement, shall not:

- Incorporate sample problems or assignments, assessment instruments, or tests, including those designed for skill assessment, unless approved by the Chancellor; or
- Request students to solve problems, answer curricular questions, present demonstrations/examples of course work designed to show knowledge or mastery of prerequisite skills, or demonstrate skills through tests or surveys (AB 705 Guided and Self Placement Guidance, 2019).

The purpose of a placement process is to direct a student into a course or pathway of courses where the student will have the best opportunity for success based upon the student's educational goals, preparation, and individual circumstances. Placing students too low can add anywhere from a single term to several years of unnecessary work to their educational timelines, provide too many opportunities for the students to exit their educational paths, or make the students feel as though they have been deemed not college-ready. Placing students too high can leave gaps in students' trajectory, add a single term or more to their educational timelines due to having to repeat courses or back up and begin earlier in the sequence, or simply cause students to be discouraged and feel as though they are not college material and leave school altogether. The goal for colleges is to determine optimal placement and allow students course taking options.

Placement recommendations based upon all available measures to assess a student's educational background, goals, and experiences represent the most equitable and well-designed placement model, optimizing the student's potential to succeed not only in a single course but within an educational pathway. Assessing a student's preparation based upon coursework, experiential skills, employment skills, exams such as the College Level Examination Program (CLEP), Combined English Language Skills Assessment (CELSA), and Advanced Placement (AP), and other factors creates the optimal situation for aligning appropriate placement and the likelihood of success. Additional measures to be considered beyond students' past experiences are the students' educational goals, fields of study, family responsibilities, noncognitive measures, time commitments, and financial obligations. Thus, a student-centered placement process meets the students in their individual circumstances, setting the students squarely in the middle of the decision-making based upon all available data combined with students' self-assessment.

As defined by the CCCC, "Assessment is one of the major components of the community college process known as matriculation, which was created in 1987 by the California legislative mandate Assembly Bill (AB) 3. Assessment is a holistic process through which each college collects information about students in an effort to facilitate their success by ensuring their appropriate placement into the curriculum. Examples of this information include the students' English and math skills, study skills, learning skills, aptitudes, goals, educational background/performance, and the need for special services" (What is Assessment?, 2018). The Chancellor's Office AB 705 implementation and default placement rule memo acknowledged that colleges should be given the ability to place their students based on local student needs (Assembly Bill (AB) 705 Implementation, 2018). The default placement rules were intentionally not included in Title 5 Regulations so that the CCCC, through established consultative processes in regard to academic and professional matters and curriculum and instruction, could regularly evaluate the effectiveness of the default rules or the Chancellor's Office placement method and make updates as needed to meet the broad needs of students statewide. The default placement rules were a starting point and were provided for colleges to use if they chose not to determine their own placement methods or if they were unable to conduct the research necessary to validate local placement models.

Title 5 §55522 requires the CCCC to regularly publish throughput rates based upon the best available research at the time of publication. Colleges should consider this information in determining the best placement protocols for their student populations in order to truly optimize student success.

## PLACEMENT FOR GENERAL EDUCATION REQUIREMENTS VERSUS SECOND-LEVEL OR MAJOR COURSES

General education requirements in mathematics seek to expose students to wide and broad topics that provide students with a well-rounded educational base. This situation contrasts with a pathway that includes mathematics as a major requirement. If the course is a major degree requirement, the study is deep, not broad. The foundational course often includes topics needed for many courses throughout the major and may branch into areas not commonly pursued by other majors and not found in general education coursework. Examples include, but are not limited to, differential equations for engineers, finite mathematics for business and computer science majors, and liberal studies mathematics for teachers. Colleges should consider that guidance and placement focused on simply getting students through mathematics to meet an institutional metric and complete a single course requirement may steer students into courses not in their educational pathways. Completing an institutional throughput check box can add time and coursework within a student's pathway. The pressure to have students complete mathematics within the first academic year, before they have settled on a major, may lead to benefitting the institution more than the student.

One way in which California community colleges have been actively collaborating to address these issues is through other statewide initiatives such as C-ID (the Course Identification Numbering System), associate degrees for transfer (ADTs), and UC Transfer Pathways. The C-ID process provides a mechanism to identify comparable transfer courses and communicate expectations for courses to students and institutions. It primarily identifies lower-division transferable courses commonly articulated between California community colleges and universities such as the University of California, California State University, and California's independent colleges and universities. ADTs are "degrees with a guarantee,"<sup>14</sup> providing a streamlined pathway to transfer to a participating four-year institution and placing students on the most direct path to a baccalaureate degree. UC Transfer Pathways provide clear and specific curricular guidance on twenty of the most sought-after UC transfer majors, describing necessary courses and preparation as well as providing a competitive edge for entry into a UC campus.

In English, the issues with more advanced courses such as literature and creative writing involve the ways in which data is being analyzed and the courses being considered. In some cases, research has been based on the conclusion that the true measure of success is not passing freshman composition but how a student performs in a second English course. This conclusion may be valid to some degree when considering a second course in a composition sequence, such as argumentative writing and critical thinking. However, in some cases the second course in which a student enrolls is literature or creative writing, classes that often tend to draw students with stronger English skills. In addition, many STEM majors may not be required to take a second English class and may fulfill their critical thinking requirement with a course in another discipline, and they are therefore excluded from the success data under this calculation. Thus, the self-selected population for the more advanced English classes tends to skew the success data upwards when

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14 See the associate degree for transfer website at <https://adegreewithaguarantee.com/en-us/>

these classes are included and may yield a less accurate conclusion regarding the success rates of average students in English courses.

### **Statewide Data in Transfer-level English (TOP code 1501.00) and Mathematics (TOP Code 1701.00)**

The data that was available for this report may in some cases not be the best data, as some courses included are not the first transfer-level courses a student would take and some courses that would be a first transfer-level course are not included. Some examples are as follows:

- A psychology statistics course that meets the mathematics and quantitative reasoning general education requirement but is not coded with a TOP Code of 1701.00.
- A business math or computer science math course or a biostats course offered in their own disciplines rather than under the math Top code.
- A technical writing course taught in a discipline other than English.
- Specialized credit English courses such as journal writing or script writing that do not fulfill general education or composition requirements.
- An ESL equivalent to transfer-level English.

College researchers have access to the data for their own colleges. Hopefully, broad access through the CCCC Data Mart will be available soon, as new course codes to access the pertinent data were designed and implemented in spring 2019.<sup>15</sup>

### **CHANGE IN OVERALL ENROLLMENT**

One area that colleges should examine involves the overall reduction in students enrolled in any credit English or mathematics courses, which includes both courses that are basic skills and transfer-level. While overall enrollment in California community colleges fell 0.8% from Fall 2016 to Fall 2019, credit mathematics course enrollment dropped 17.44% and credit English 9.57% during that same time period. Even with added transfer sections and additional co-requisites or synchronous support, an even trade in either sections or enrollment does not seem to have occurred, whether this situation is the result of inadequate sections or students opting out. Colleges should ask whether they are continuing to serve students looking for course preparation prior to transfer level courses and perhaps whether students have met English and mathematics requirements already, thus reducing the numbers of students needing to take those courses.

**Table 1 – Comparison of Statewide Enrollment Number Change in all Credit Courses, to Credit Mathematics and Credit English Enrollment from fall 2016 to fall 201**

<b>Fall Terms</b>	<b>Credit Enrollment Mathematics – (1701.00)</b>	<b>Credit Enrollment English - (1501.00)</b>	<b>Overall CCC Credit Course Enrollment</b>	<b>Student Count</b>
<b>Fall 2016</b>	459,606	416,982	3,855,744	1,591,276
<b>Fall 2019</b>	379,452	377,069	3,824,784	1,568,640
<b>Change</b>	-80,154	-39,913	-30,960	-22,636
<b>% Change</b>	-17.44%	-9.57%	-0.80%	-1.42%

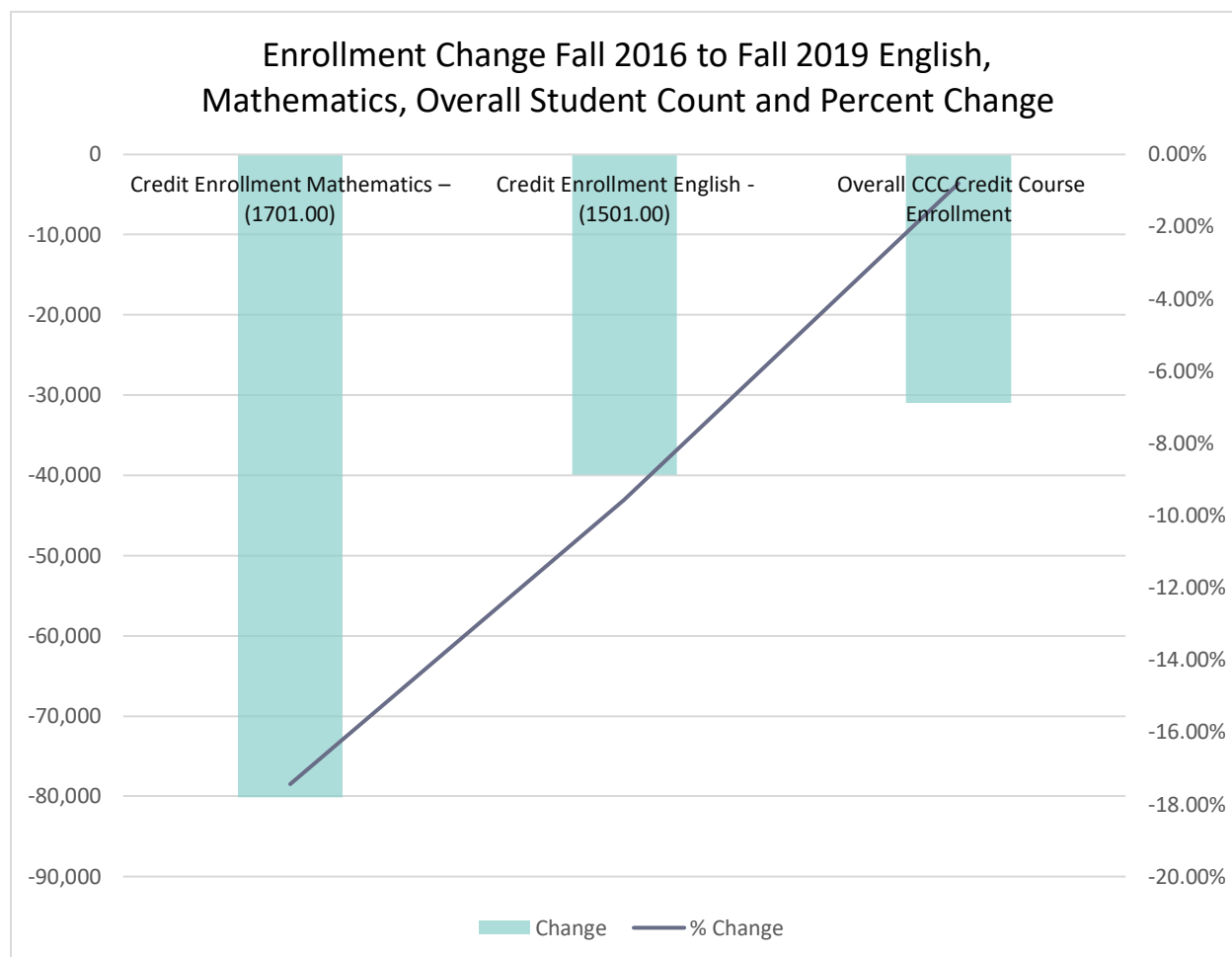
Many potential questions should be asked regarding this decline in enrollment in two key higher education fundamental skills, including whether colleges are meeting the local population needs

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15 Codes CB25 and CB26 can be found in the Data Element Dictionary at <https://webdata.cccco.edu/ded/cb/cb.htm>

and the CCC mission to serve students in their individual situations and how these trends will affect guided pathways and overall completion.

**Figure 1 -- Comparison of Statewide Enrollment Change by Count and Percent in All Credit Courses, to Credit Mathematics and Credit English Enrollment from Fall 2016 to Fall 2019**



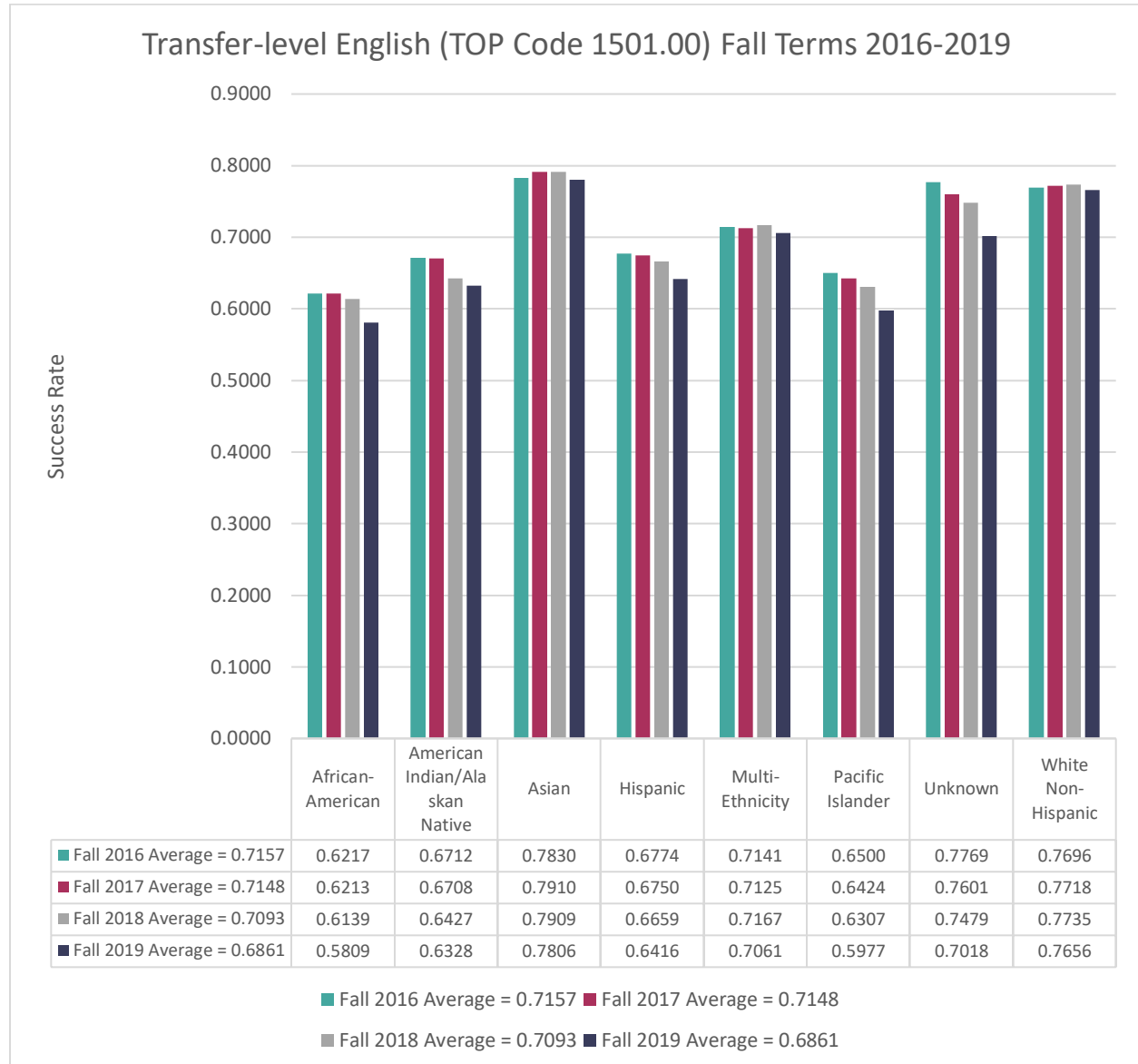
## ENGLISH

Further analysis of transfer-level English (TOP code of 1501.00) success changes from Fall 2016 to Fall 2019, disaggregated by ethnic group as defined by the CCCCCO, is shown in the charts below. Although indicated in decimal points, these figures represent percentages and success rates, and they show a declining success rate for all ethnicities that may be balanced for enrollment and throughput in transfer-level courses. However, specific ethnic groups—African American, Native American, Hispanic, and Pacific Islander—have more rapidly decreasing success rates than others. The difference in success rates between white non-Hispanic groups and other groups is often referenced as the equity gap. Even if in raw numbers more students from other ethnic groups are passing, with declining overall success rates, the equity gaps will remain. Where the rate of decline is greatest, the equity gaps will become larger.

Figure 2 below displays the trends in success, and Figure 3 displays the widening equity gap when defined as success rate difference between white non-Hispanic and other groups. Because Asians are the only group increasing in success rate, their numbers fall below the axis, exceeding white non-Hispanic success. For context, a five-point gap in an election cycle refers to 5% difference between two candidates or 0.05 when represented in decimal form. In the English gaps below,

success equity gaps are growing larger for all ethnic groups except Asians, and the largest gap occurs in Fall 2019. The point gap for African Americans has grown from 14 3/4 points in Fall 2016 to 18 ½ points in 2019 (Figure 3).

**Figure 2 Comparison of Statewide Success Change by Percentage Points in Transfer-Level English Courses from Fall 2016 to Fall 2019, Disaggregated by Ethnicity**





**Figure 3 Trends in Statewide Success Rate Gap—as Defined by the Difference in Success Rates Between the White Non-Hispanic Ethnic Group and Each of the Other Ethnic Groups— in Transfer-Level English Courses from Fall 2016 to Fall 2019, Disaggregated by Ethnicity**

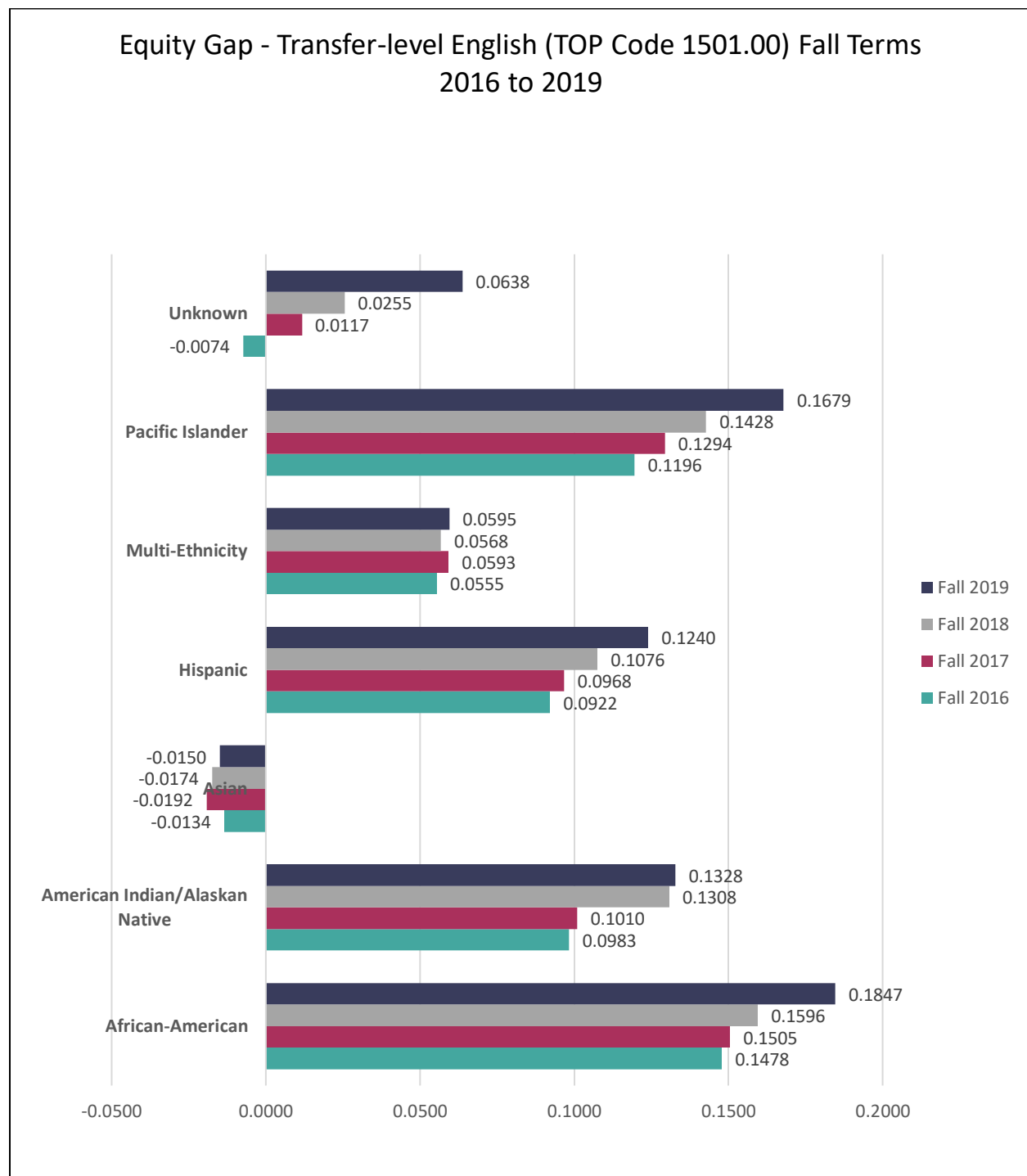
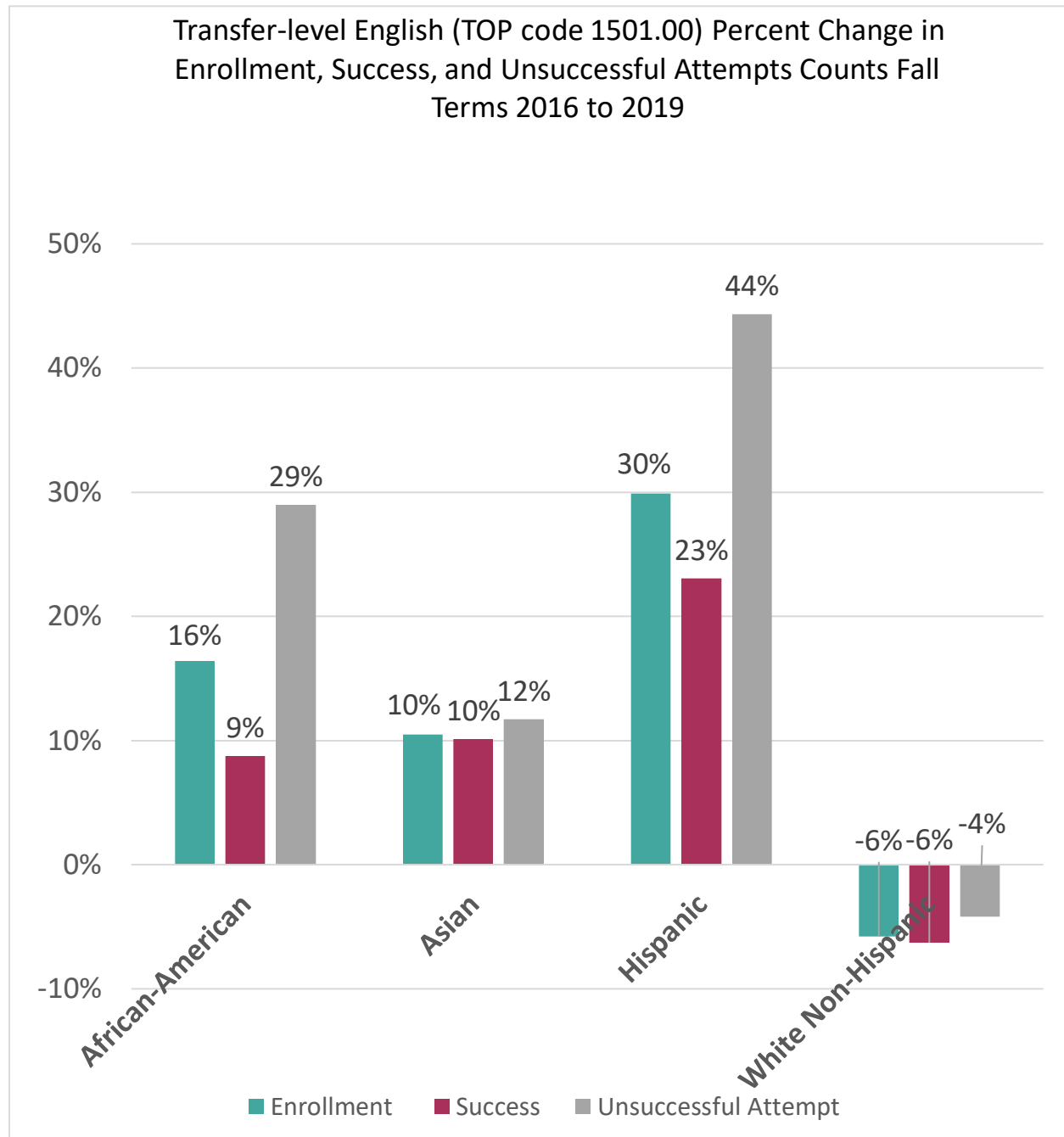


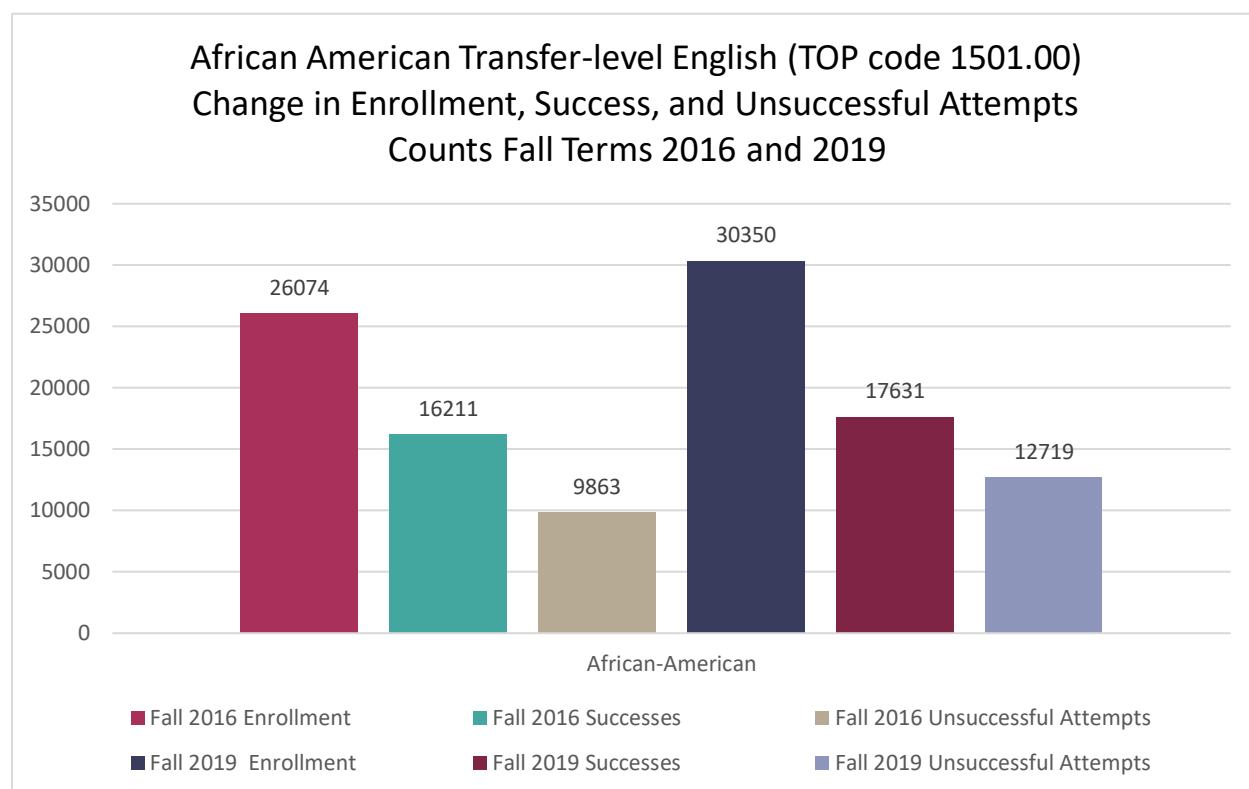
Figure 4 below describes the factors behind the declining success rates. This chart indicates the percent changes in enrollment count, success count, and unsuccessful attempt count by ethnicity between Fall 2016 and Fall 2019. In the African-American ethnic group, enrollment increased by 16%, the number of successes increased by 9%, and the number of unsuccessful attempts increased by 29%. In the white non-Hispanic ethnic group, both the numbers of enrollment and successes decreased by 6% and the number of unsuccessful attempts decreased by 4%. As unsuccessful attempts outpace successful attempts, equity gaps enlarge even with the increased throughput.

Such data should lead colleges to celebrate the increased enrollment and throughput numbers while also challenging colleges to address the unsuccessful attempts that are outpacing success increases.

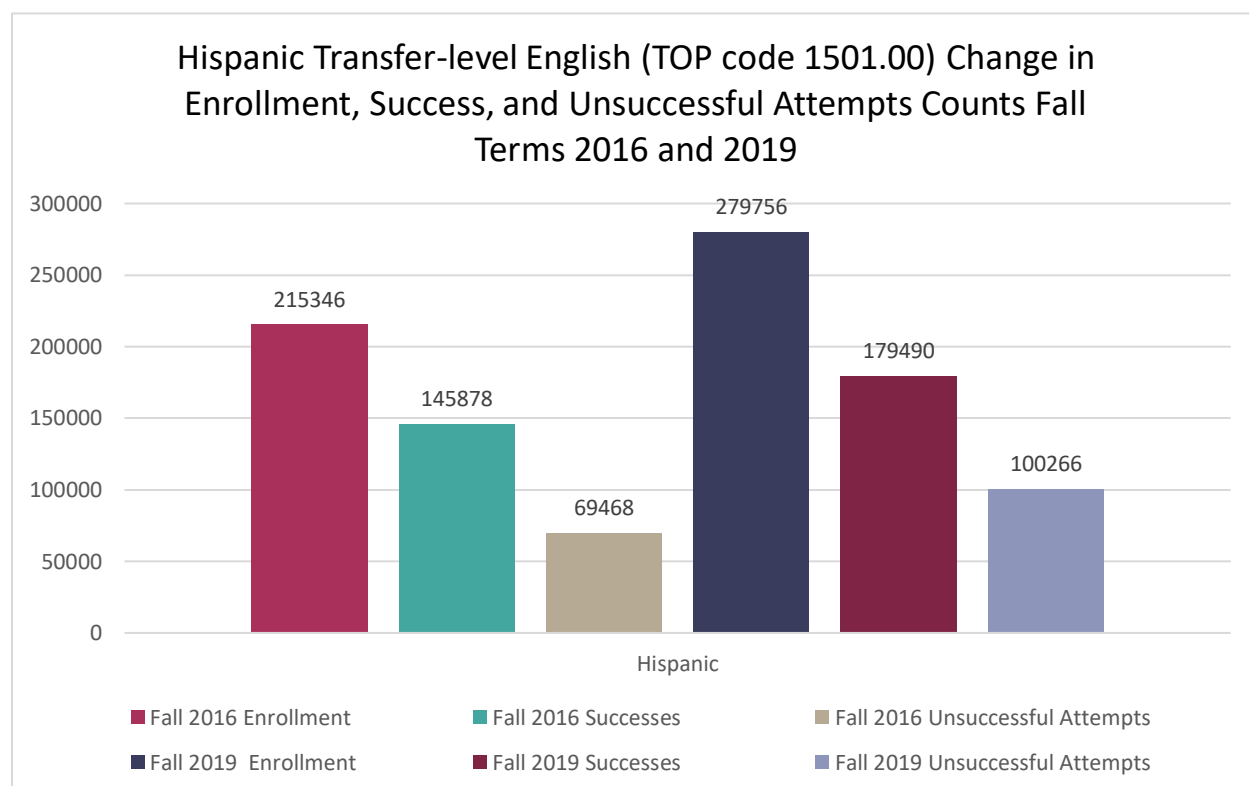
**Figure 4 Transfer-level English (TOP code 1501.00) Change in Count Percentages from Fall Terms 2016 to 2019 in Enrollment, Success, and Unsuccessful Attempts**



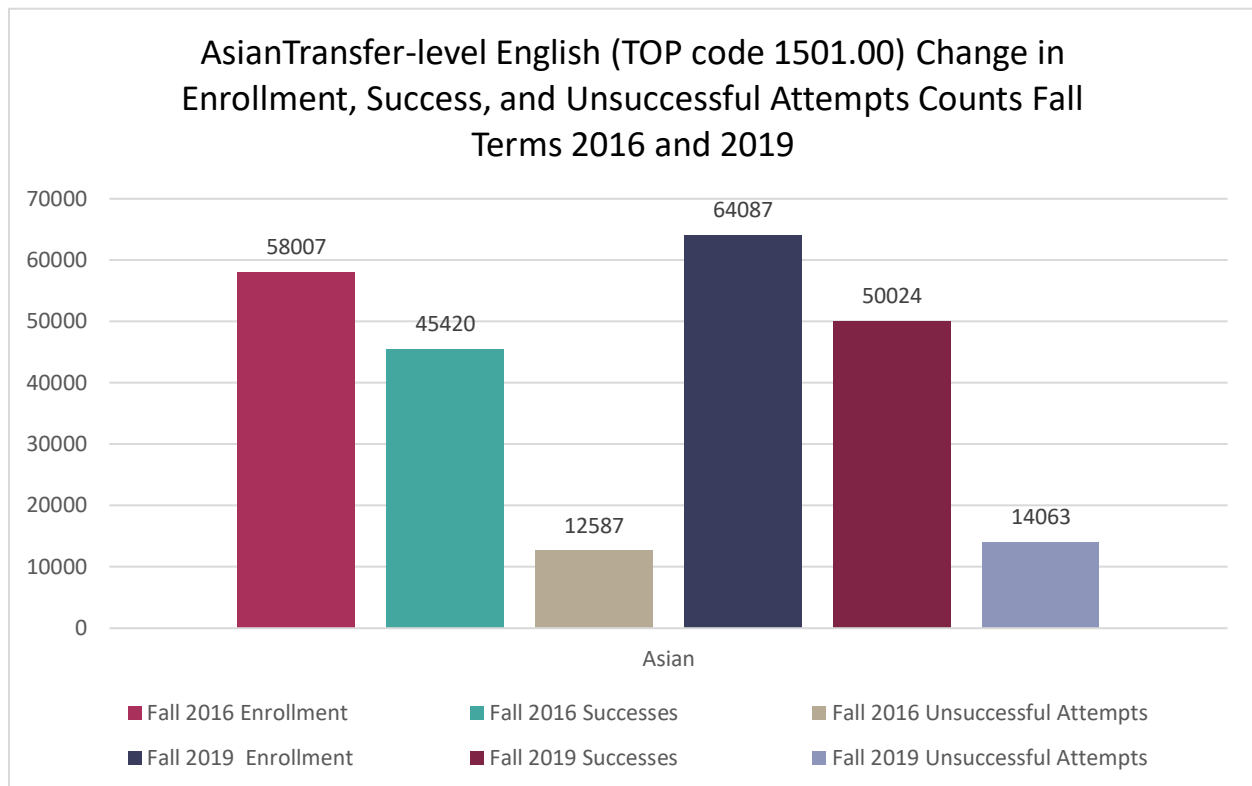
**Figure 5 African American Numbers of Enrollments, Successes, and Unsuccessful Attempts for Fall 2016 and Fall 2019 for Transfer-level English**



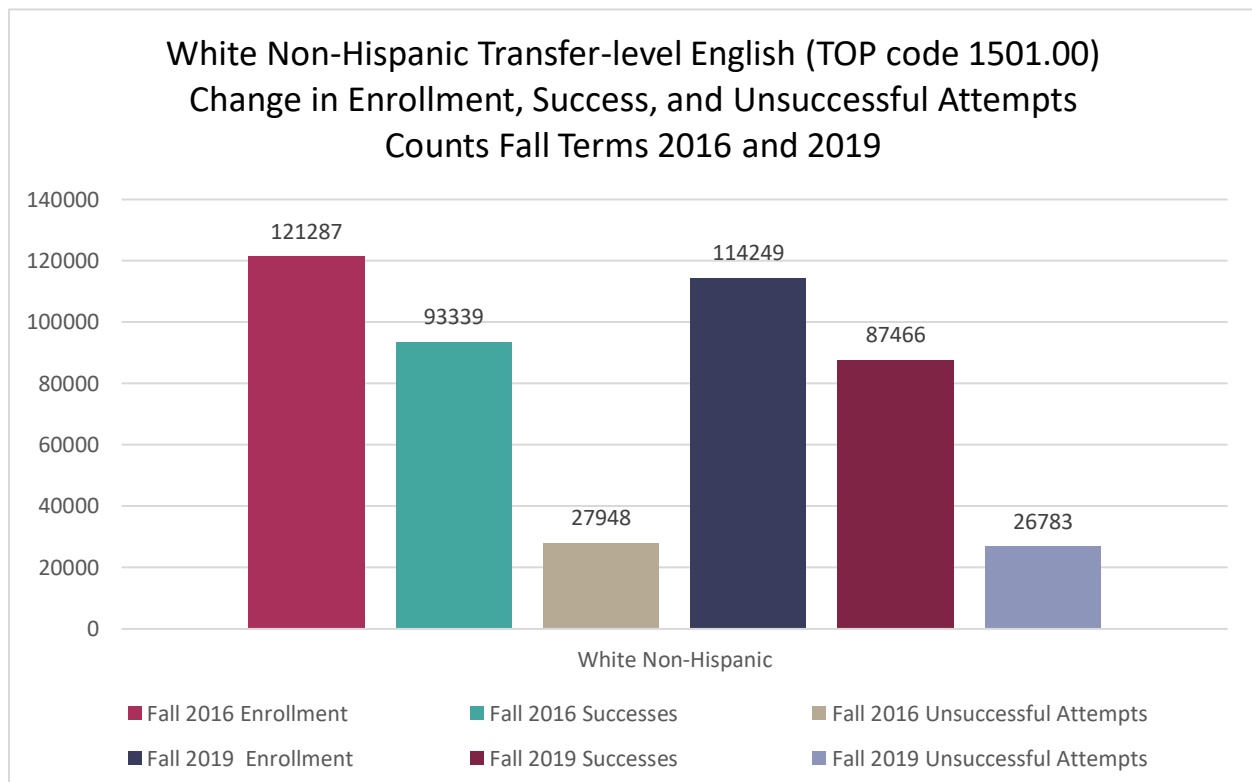
**Figure 6 Hispanic Numbers of Enrollments, Successes, and Unsuccessful Attempts for Fall 2016 and Fall 2019 for Transfer-level English**



**Figure 7 Asian Numbers of Enrollments, Successes, and Unsuccessful Attempts for Fall 2016 and Fall 2019 for Transfer-level English**



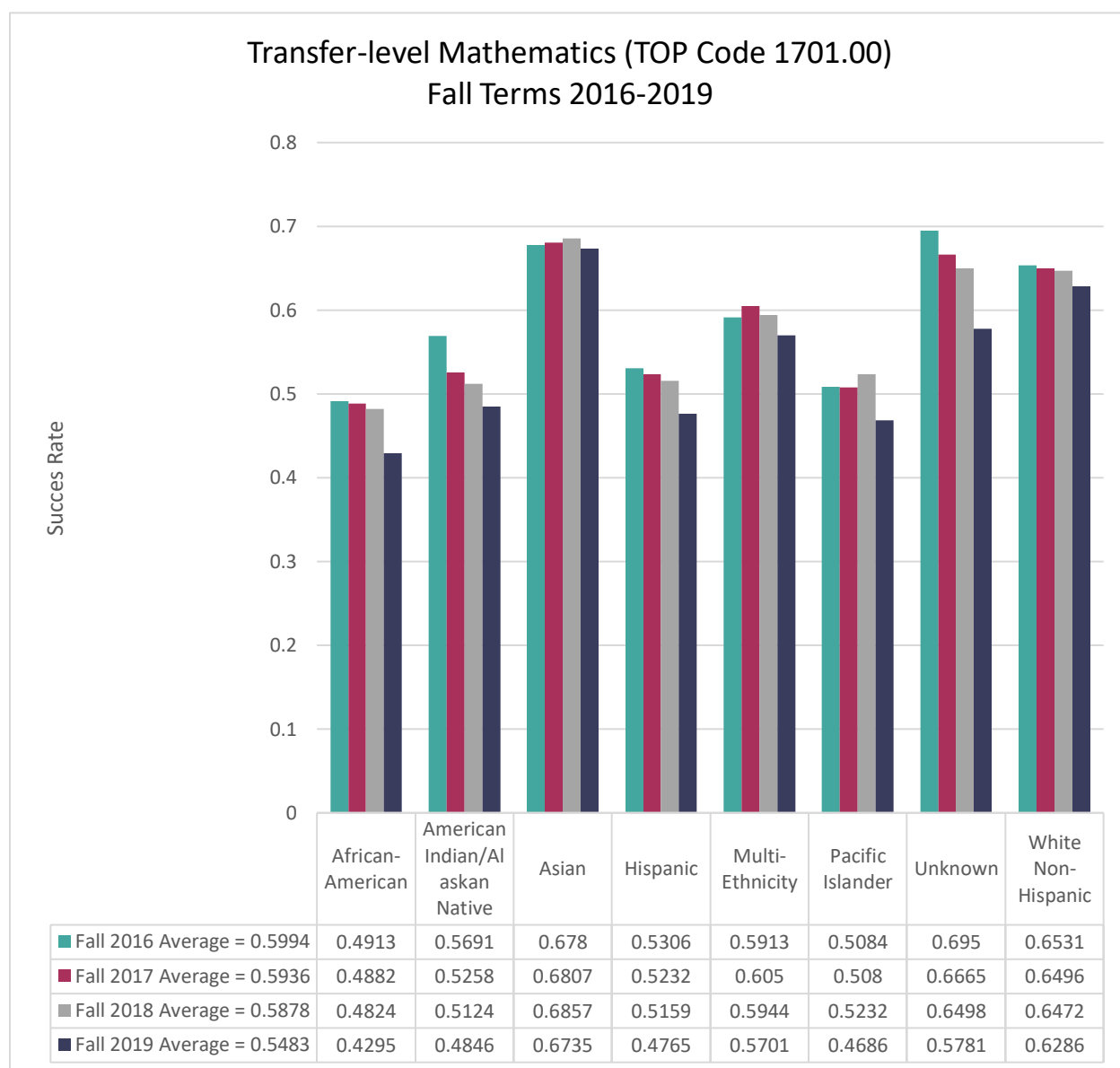
**Figure 8 White Non-Hispanic Numbers of Enrollments, Successes, and Unsuccessful Attempts for Fall 2016 and Fall 2019 for Transfer-level English.**



## MATHEMATICS

Further analysis of transfer-level mathematics (TOP code of 1701.00) success changes from Fall 2016 to Fall 2019, disaggregated by ethnic group as defined by the CCCC, is shown in the charts below. Although indicated in decimal points, these figures represent percentages and success rates, and they show a declining success rate for all ethnicities, which may be a trade-off for more enrollment and throughput in transfer-level coursework. However, specific ethnic groups—African American, Native American, Hispanic, and Pacific Islander—have more rapidly decreasing success rates than others. The difference in success rates between white non-Hispanic groups and other groups is often referenced as the equity gap. Even if more students from other ethnic groups are passing, with declining overall success rates, the equity gaps will remain. Where the rate of decline is greatest, the equity gaps will become larger.

**Figure 9 Comparison of Statewide Success Change (Percentage Points) in Transfer-Level Mathematics Courses (TOP code of 1701.00) from Fall 2016 to Fall 2019, Disaggregated by Ethnicity**



**Figure 10 Trends in Statewide Success Rate Gap—as Defined by the Difference in Success Rates Between the White Non-Hispanic Ethnic Group and Each of the Other Ethnic Groups—in Transfer-Level English Courses from Fall 2016 to Fall 2019, Disaggregated by Ethnicity.**

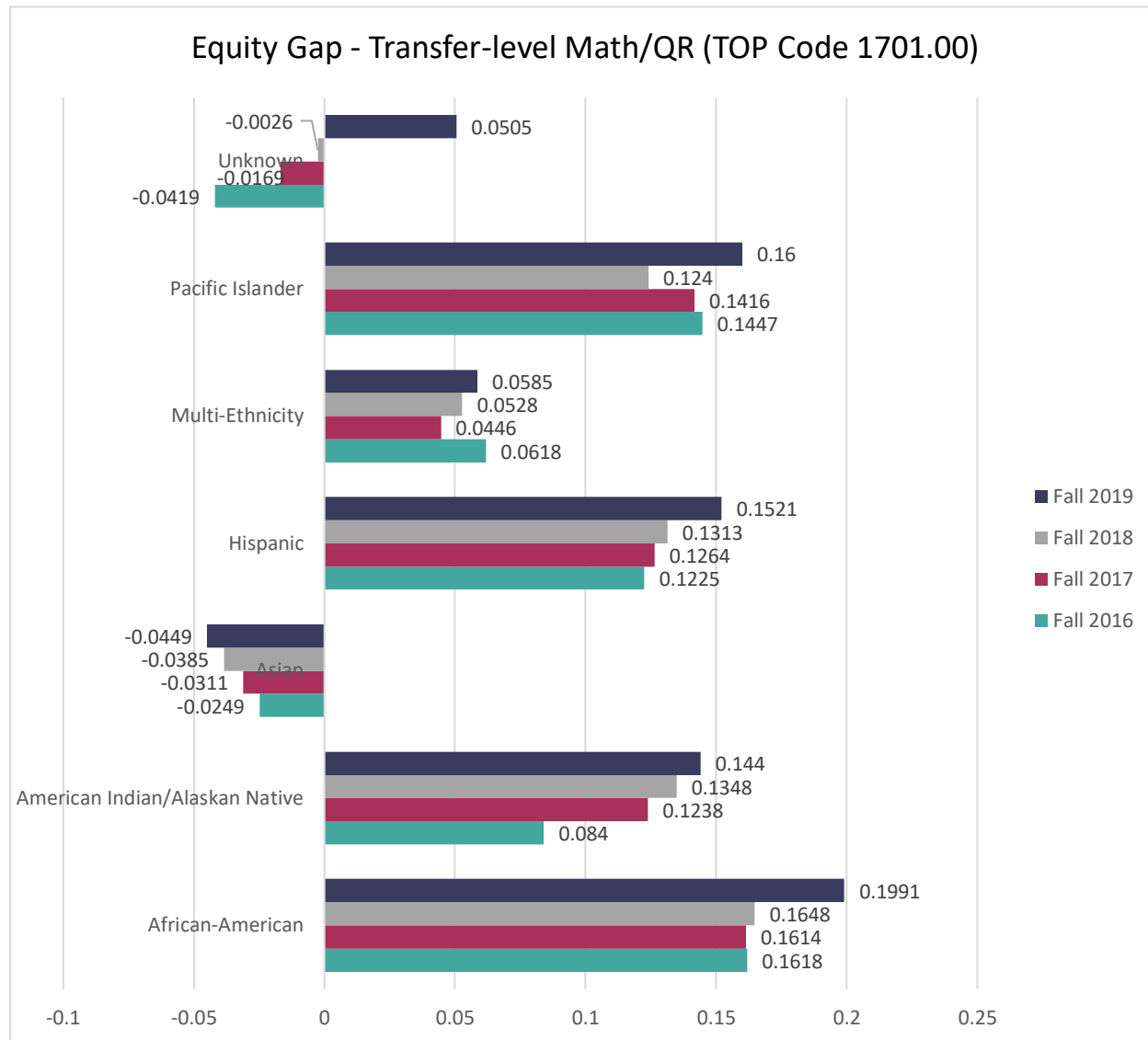
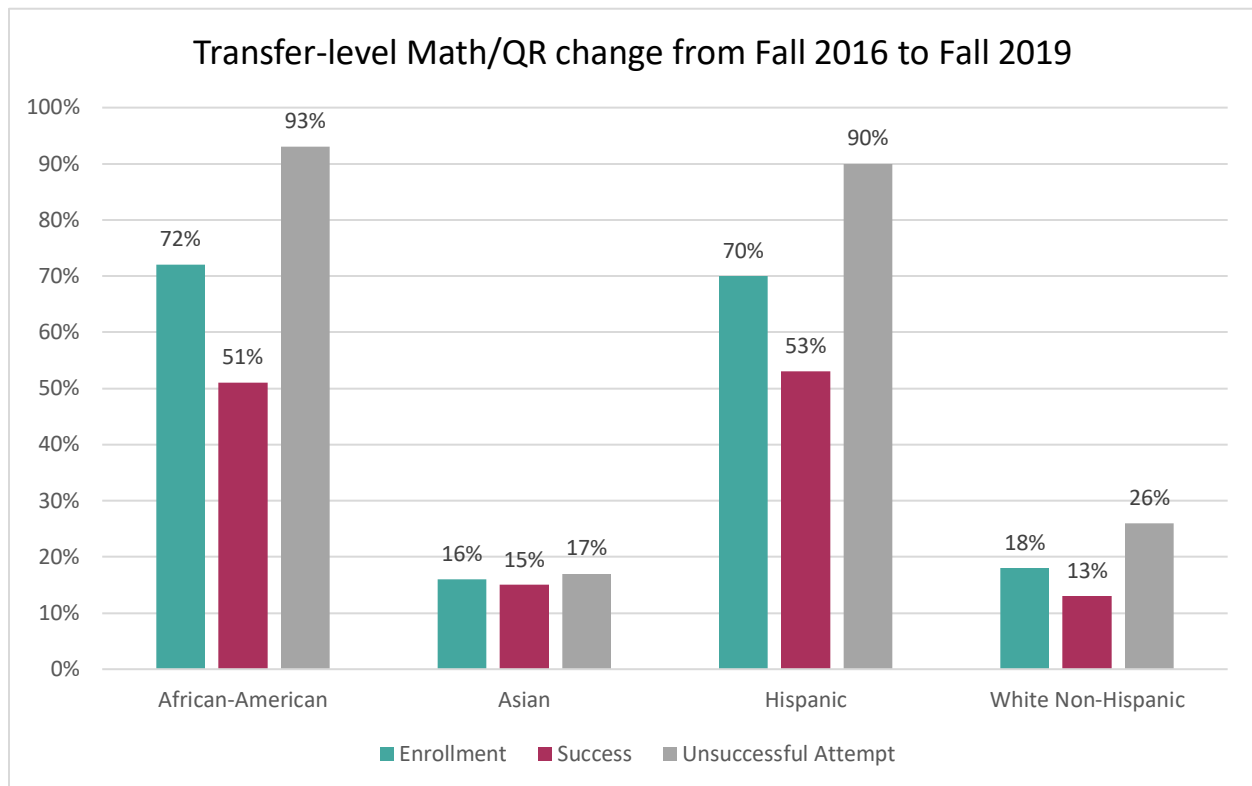


Figure 11 below describes the factors behind the declining success rates and growing equity gaps, indicating the percent changes in enrollment count, success count, and unsuccessful attempt count by ethnicity between Fall 2016 and Fall 2019. As unsuccessful attempts outpace successful attempts, equity gaps enlarge despite the increased throughput. Such data should lead colleges to celebrate increased enrollment and increased throughput numbers while also challenging colleges to address the unsuccessful attempts that are outpacing success increases.

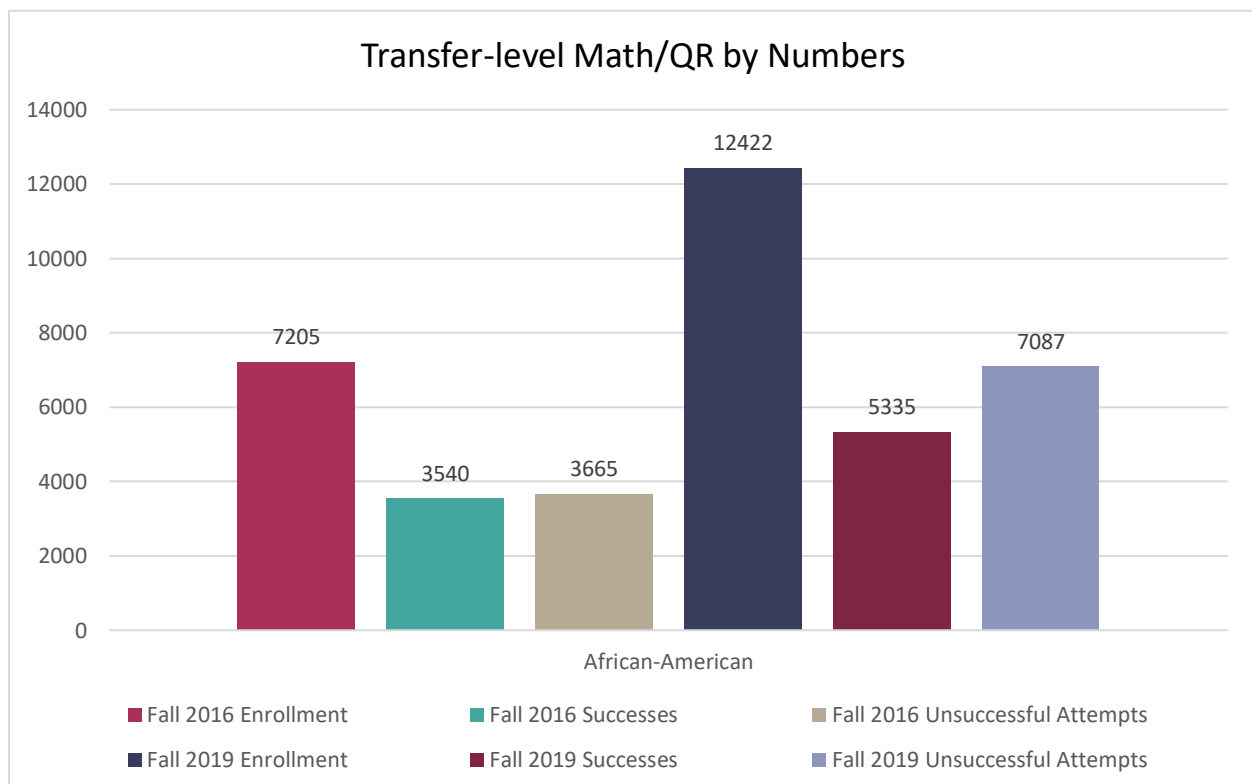
In the Asian ethnic group, the increase is relatively flat in all three categories. In the Hispanic ethnic group, enrollment numbers increased by 70%, success numbers increased by 53%, and unsuccessful attempt numbers increased by 90%.

Limitations of this data are that it does not include the quantitative reasoning courses in other disciplines and it does not adequately differentiate the large differences between STEM and SLAM mathematics unsuccessful attempts.

**Figure 11 Transfer-level Mathematics (TOP code 1701.00) Change in Count Percentages from Fall Terms 2016 and 2019 in Enrollment, Success, and Unsuccessful Attempts**

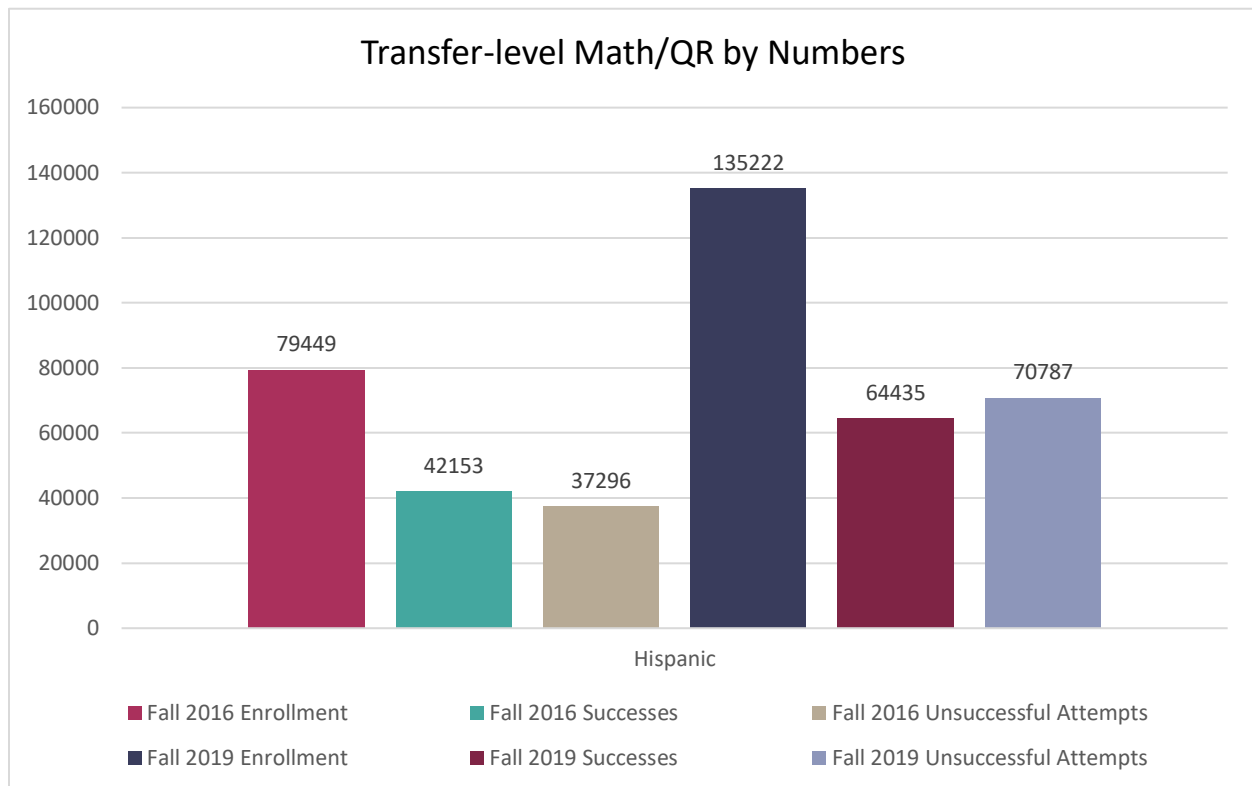


**Figure 12 African American Numbers of Enrollments, Successes, and Unsuccessful Attempts for Fall 2016 and Fall 2019 for Transfer-level Mathematics**

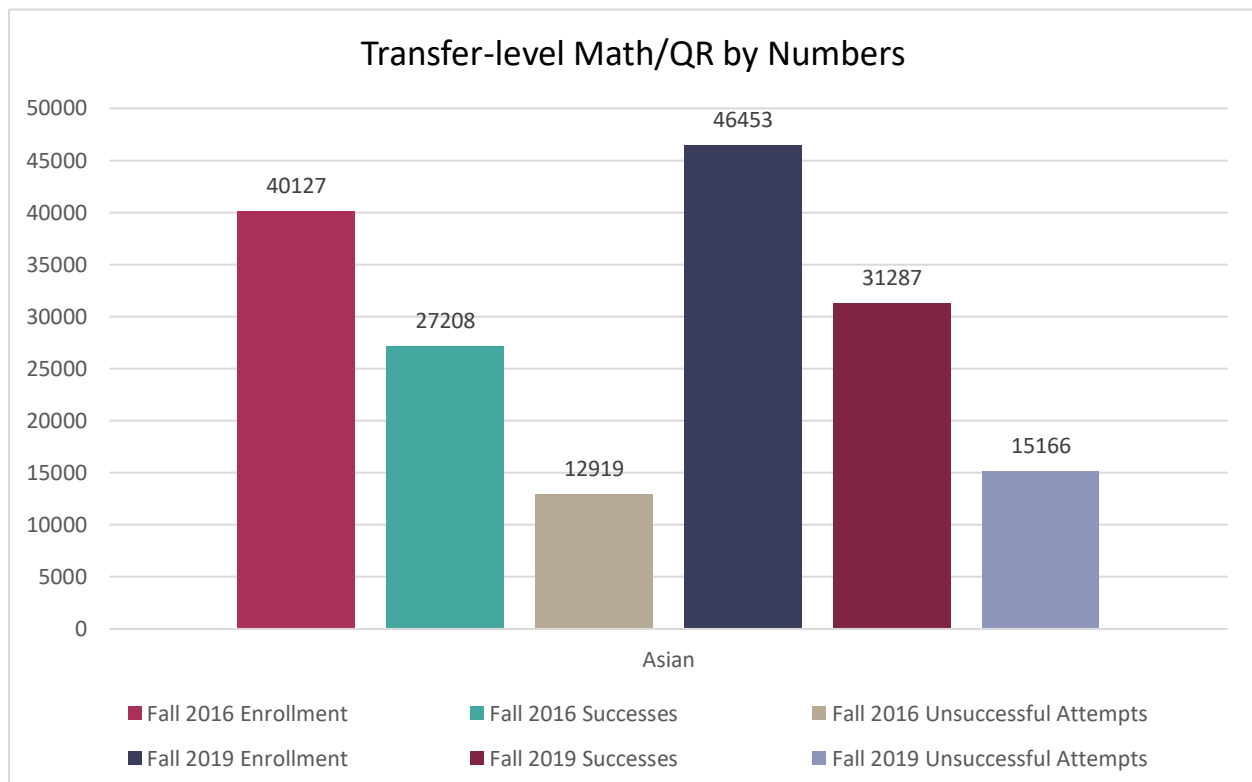




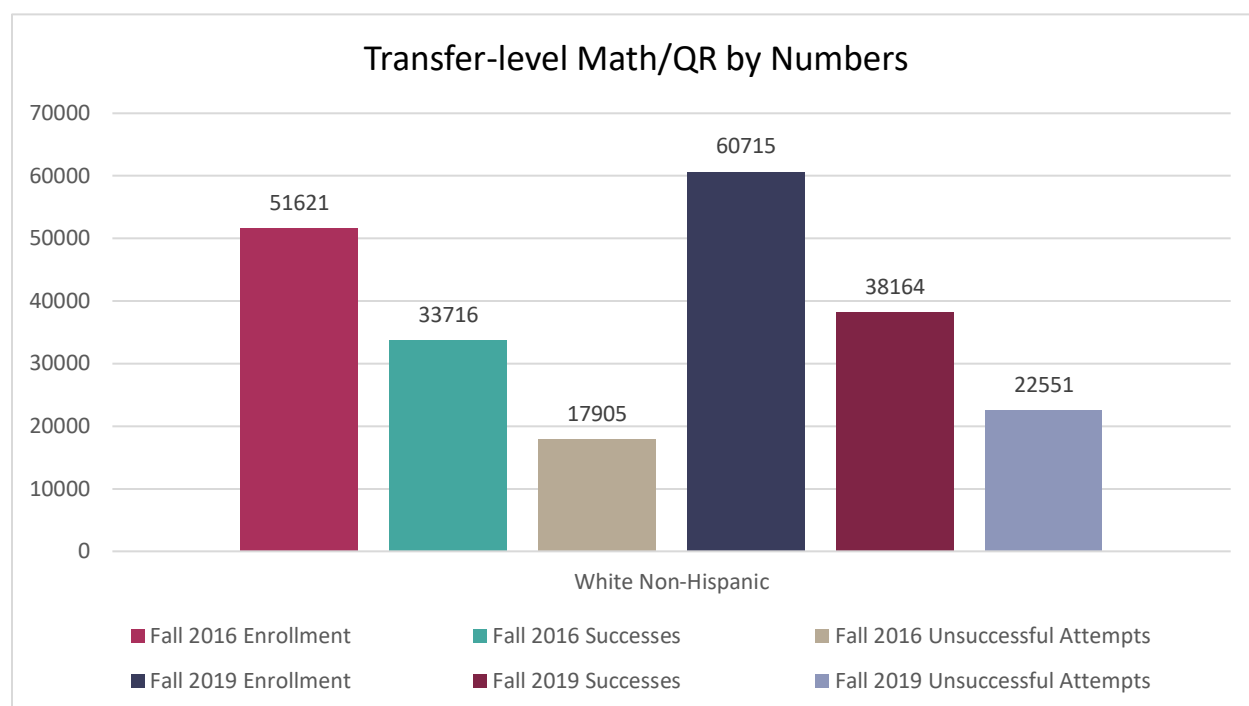
**Figure 13 Hispanic Numbers of Enrollments, Successes, and Unsuccessful Attempts for Fall 2016 and Fall 2019 for Transfer-level Mathematics**



**Figure 14 Asian Numbers of Enrollments, Successes, and Unsuccessful Attempts for Fall 2016 and Fall 2019 for Transfer-level Mathematics**

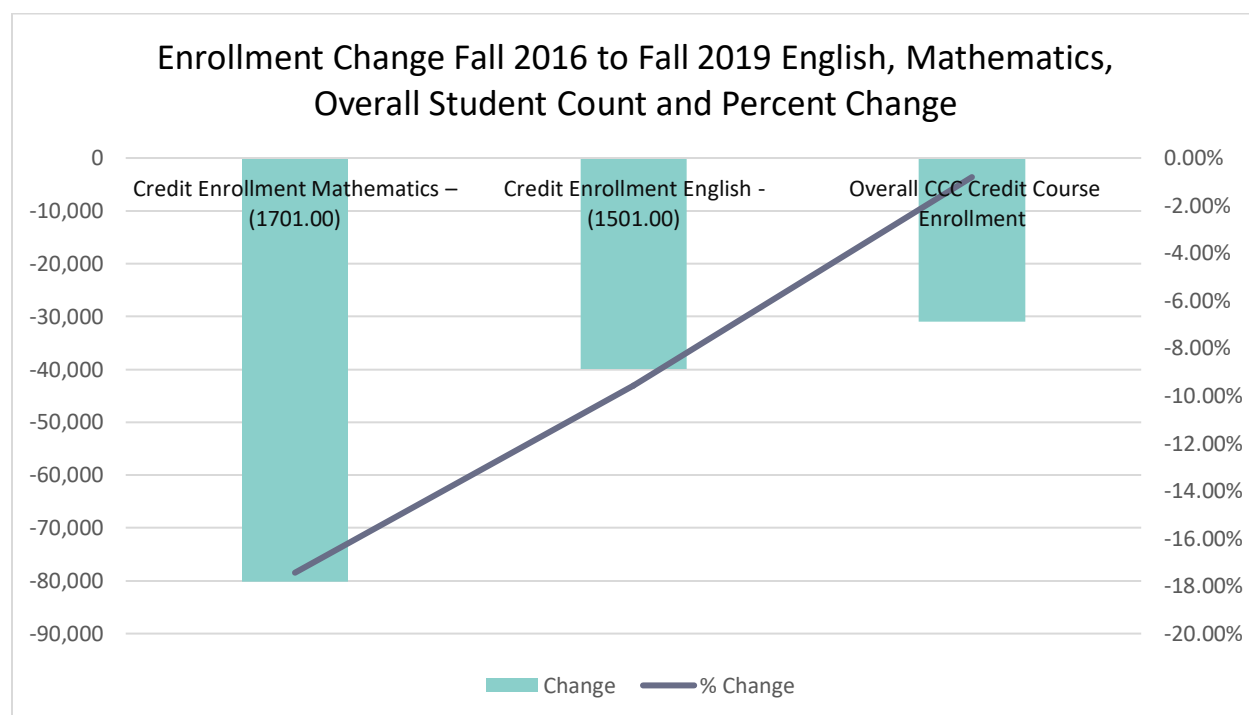


**Figure 15 White Non-Hispanic Numbers of Enrollments, Successes, and Unsuccessful Attempts for Fall 2016 and Fall 2019 for Transfer-level Mathematics**



### Implications of Reduced Enrollment with Mathematics and English Credit Courses

Enrollments statewide in credit mathematics courses (TOP Code 1701.00) declined from 459,606 in Fall 2016 to 379,452, a decline of 17.44%, in Fall 2019. Credit English (TOP Code 1501.00) enrollments statewide declined from 416,982 in Fall 2016 to 377,069, a decline of 9.57%, in Fall 2019. Total enrollment in California community colleges credit courses was 3,855,744 in Fall 2016 and 3,824,784, a decline of only 0.8% of overall credit enrollments, in Fall 2019. (duplicated Fig.1).



The overall numbers of students taking credit English and mathematics have seen a reduction compared to previous years. This analysis combines transfer-level and basic skills level enrollments, translating to fewer students enrolling in these important and fundamental courses required for all pathways. Important considerations exist for students who opted not to enroll in English or mathematics early in their college careers. Colleges should examine local data regarding alignment with student pathways and the value of acquiring the skills early to increase success in subsequent coursework.

Colleges should also examine section offerings, scheduling, course modalities, and other factors that may contribute to failure to enroll. Some colleges using guided self-placement (GSP) reported higher levels of student enrollment when student self-agency was clearly associated with the course choice. This finding is consistent with research on GSP at the CSUs and with other studies.<sup>16</sup> Colleges must analyze this data to determine if this change is due to enrollment decline overall, a reduction in pretransfer-level course offerings, or perhaps some other factor or combination of factors. Feedback from students at some colleges indicated that they used lower-level courses as an opportunity for a warmup or to gain momentum and appreciated the opportunity to register in these courses.

The introduction of support or corequisite courses now taken within the same semester as required transfer-level courses was identified as a concern by students and institutions. Scheduling support courses is a challenge, as is determining the type of support needed for the individual student. Assuming one-size-fits-all has led to numerous issues, including student inability to take large load courses with co-requisites that required 5-9 units and hours or more. Students expressed confusion with support courses regarding scheduling and time. In addition, what would have been counted as one enrollment in the past for English composition may now be counted as two enrollments, English composition plus support. Thus, colleges need to access data using the newly created CB codes so that support courses can be disaggregated from parent courses.

## IMPLICATIONS FOR STUDENTS WHEN COURSE PLACEMENT RESULTS IN NOT ENROLLING OR A SUBSTANDARD COURSE NOTATION

Under the new placement system, students are provided more opportunity and access to coursework, resulting in higher throughput, but the consequences of not succeeding may have higher stakes. Considerations raised by faculty on the forefront of evaluating their Fall 2019 placement practices and their successful or unsuccessful attempt data beyond throughput included a more thorough examination of the following:

- financial aid issues and satisfactory academic progress
- transfer issues and GPA
- maximizing pass rates and numbers
- minimizing failure rates and numbers
- maximizing retention
- minimizing equity and achievement gaps.

Common concerns and observations have been shared by faculty through feedback during ASCCC conferences, college visits, workshops, and webinars. This information may be useful in creating research questions for analysis of college placement protocols and support structures in English and mathematics pathways.

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16 ASCCC Guided Self Placement resources can be found at <https://tinyurl.com/ASCCC-GSP>

Unintended consequences have occurred for students that desired or needed preparation for a transfer-level course, as adding in a support or corequisite course sometimes confounded the issue. Corequisite support in many colleges resulted in coursework that carried total unit loads in one subject area of 5-9 units; if units were not increased, the time commitment needed to learn the material was equivalent to more units. This situation created pressure due to a federal regulation requiring students to maintain satisfactory academic progress (34 CFR 668.34) to remain eligible for financial aid. Each institution defines how a student's GPA and pace of completion are affected by course incompletes, withdrawals, or repetitions in order to meet or exceed the 66.7% success requirement. Students not achieving the required GPA or not successfully completing their educational programs at the required pace are no longer eligible to receive assistance under Title IV, HEA programs. The rapid changing of placement processes did not always factor in the important aspect of financial aid requirements. Colleges are encouraged to examine whether financial aid factors disproportionately impacted student populations, students' ability to continue their pathways, and other student success outcomes.

A sub-standard grade<sup>17</sup> in an English or mathematics transfer-level course significantly impacts entrance into many CCC programs such as nursing, respiratory therapy, dental hygiene, computer science, engineering, and other high demand programs as well as CCC baccalaureate programs. In contrast, failure in basic skills or pretransfer coursework does not permanently impact a student's record in the same manner. This issue is exacerbated by transfer considerations. Transfer success is not only based upon a students' completion of coursework but also GPA achievement and particularly grades in courses relevant to the student's major. CSU GE requirements in Written Communication, Oral Communication, Critical Thinking, and Mathematics/Quantitative Reasoning must be passed with a C or better. CSUs also note that "Many transfer students report that the biggest difference between their classes at a California Community College and those at the university is the amount of writing required at the CSU" (Upper Division Transfer, n.d.). The UC report for transfer to a campus in the University of California system in 2018 indicated students successfully transferring had a minimum GPA of 3.0—even though eligibility was lower—and that entrance into the more selective campuses such as Berkeley, UCLA and UCSB necessitated a higher GPA.<sup>18</sup> A substandard grade in a transfer-level English or mathematics course can thus significantly impact transfer.

Furthermore, receiving a sub-standard grade in the student's first course, especially at the transfer-level, may heavily impact student persistence to pursue a college career. Colleges should examine disaggregated data to determine the impact of sub-standard grades on perseverance and completion. Appropriate placement and guidance for course selection and enrollment are crucial during the first year.

## LOCAL DATA AND CASE STUDIES

Local academic senates or faculty through their academic senates from various colleges have contacted the ASCCC seeking guidance and information regarding AB 705 implementation requirements and outcomes along with a venue to share data from their colleges. The advantage of local college data is that the English and mathematics courses studied are specifically those courses

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<sup>17</sup> A sub-standard grade is a D, F, W, or NP.

<sup>18</sup> UC Transfer Data is taken from the University of California Office of the President at <https://admission.universityofcalifornia.edu/counselors/files/uc-transfer-application-data.pdf>

intended to fall under AB 705 requirements in most cases, that being freshman composition or the equivalent and the first transfer-level mathematics or quantitative reasoning course, even if that course is outside the mathematics TOP code 1701. In most of these colleges where placement included coursework other than transfer-level and methods other than default placement, the strategies for support could be better analyzed. In some of the colleges, the data focused on first-time college students entering their courses within the first academic year. These colleges also provided important qualitative data in survey feedback from students and faculty regarding areas of success and areas needing improvement.

Case studies exploring local college data included diverse colleges: the institutions making up the Los Angeles Community College District (LACCD) and Glendale Community College. The local data mirrored statewide data, confirming that more students were succeeding in transfer level English and mathematics. Equity gap trends for placing students into transfer-level coursework were not present because placement into the courses was open to everyone. However, each of these colleges showed persistent equity gaps in course success. While English had larger numbers of success overall, the success rate for African-American students in particular fell below the success rate of white non-Hispanic and Asian students. In most of the colleges, statistics pathways showed greater numbers of students succeeding with only slightly lowered course success rates. However, as a whole the STEM mathematics pathways showed declining course success, widening equity gaps and in some colleges even lower throughput than in previous years. LACCD data was comprehensive and represented colleges at very different stages of multiple measures implementation prior to AB 705. Glendale Community College was implementing multiple measures and curricular changes prior to the AB 705 full implementation deadline of Fall 2019. This evidence is representative of the move statewide for improved multiple measures for assessing students for placement.

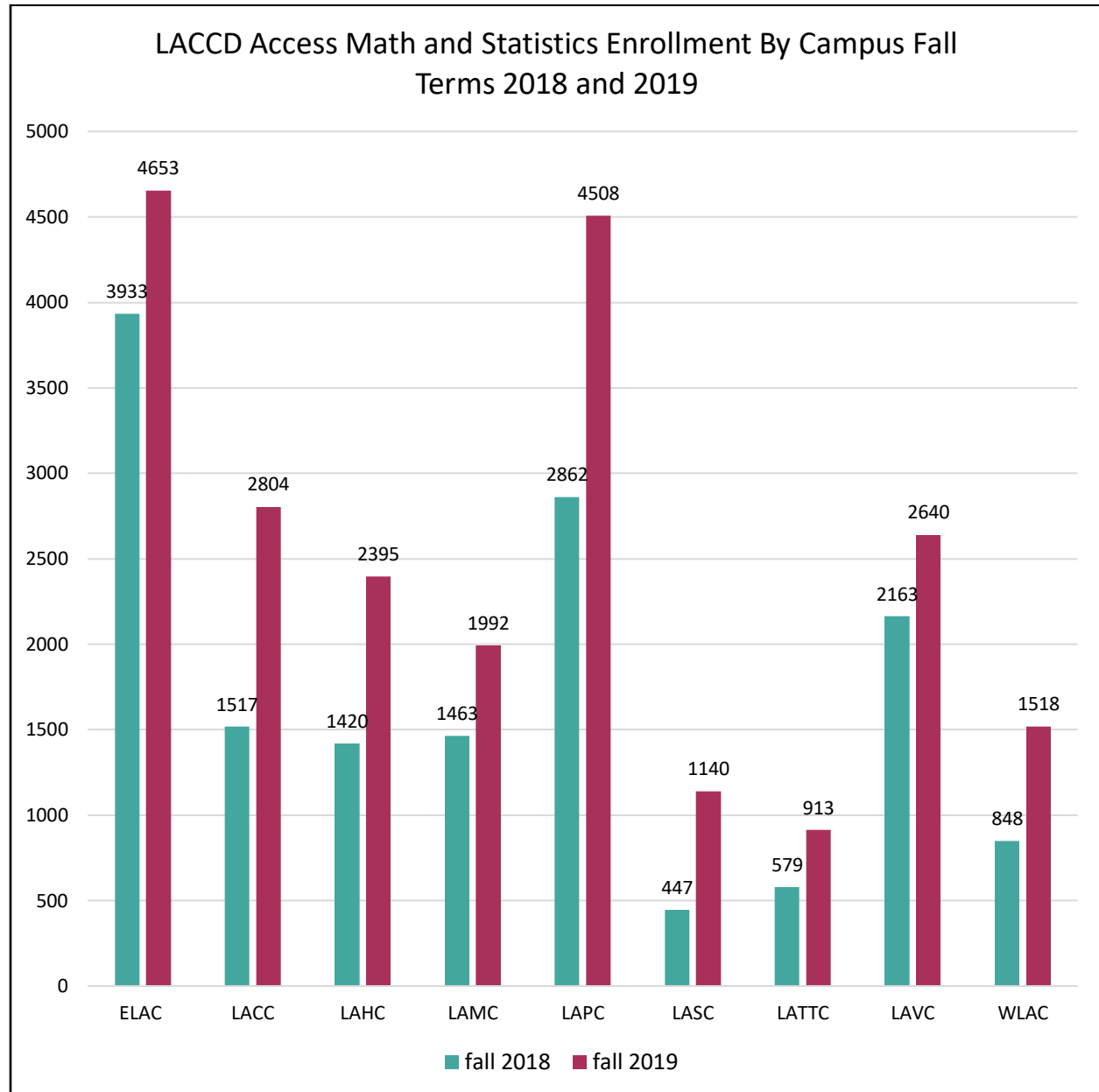
#### CASE STUDY: LOS ANGELES COMMUNITY COLLEGE DISTRICT (LACCD) PLACEMENT, ENROLLMENT, SUCCESS RATES IN MATH AND ENGLISH

The Los Angeles Community College District is composed of nine very diverse colleges in terms of size, location, and student population. Located in different communities throughout the Los Angeles area, the district includes East LA College (ELAC), LA City College (LACC), LA Harbor College (LAHC), LA Mission College (LAMC), LA Pierce College (LAPC), LA Southwest College (LASC), LA Trade Tech College (LATTC), LA Valley College (LAVC), and West LA College (WLAC).

The LACCD District Academic Senate President indicated that in Fall 2019, the LACCD had approximately 31,000 students enrolled in English and 29,000 enrolled in mathematics or quantitative reasoning courses without placement through an assessment exam and without access to many pretransfer or remedial courses that had previously been offered at the nine colleges. The faculty felt that former placement processes were flawed and that more students should have access to transfer-level coursework. The LACCD cancelled most remedial mathematics—everything below intermediate algebra—and English courses more than one level below transfer in the fall of 2019, even though this elimination of course levels was not required by AB 705. The District Academic Senate examined data to determine which students were benefitting and which were not. LACCD data included a detailed analysis of mathematics, statistics, and English coursework. LACCD outcomes indicated larger enrollments in many courses and increased throughput in some courses but also lower success rates and widening equity gaps for key mathematics, statistics, and English courses.

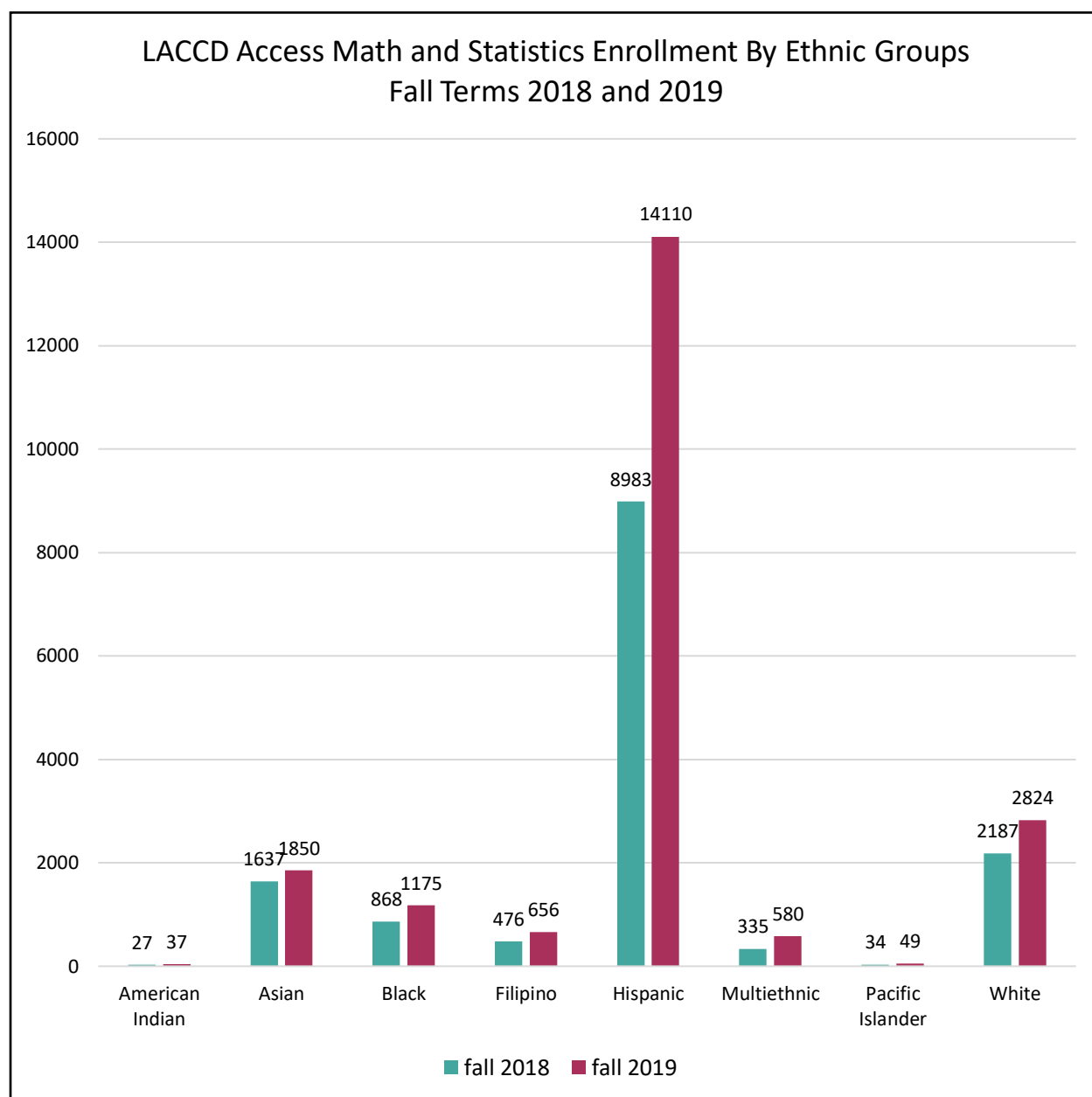
Figure 16 indicates an overall access increase to transfer-level mathematics courses as measured by enrollment increases from 15,232 to 22,563 (+7331, or 48.1%). The largest increases in enrollment were at LA Southwest College (155%) and LA City College (85%).

**Figure 16 Increased Enrollment Counts in Transfer-level Mathematics in the Nine LACCD Colleges from Fall 2018 to Fall 2019.**



When the data was disaggregated by ethnic groups, enrollment increases were observed in African Americans (97.6%), multiethnic (73.1%) and Hispanic (57.1%) ethnic groups. Large increases in access were observed in under 20-year old (79.1%) and over 55-year old (61.9%), females (54.3%), first-time students (117%), returning students (106.3%).

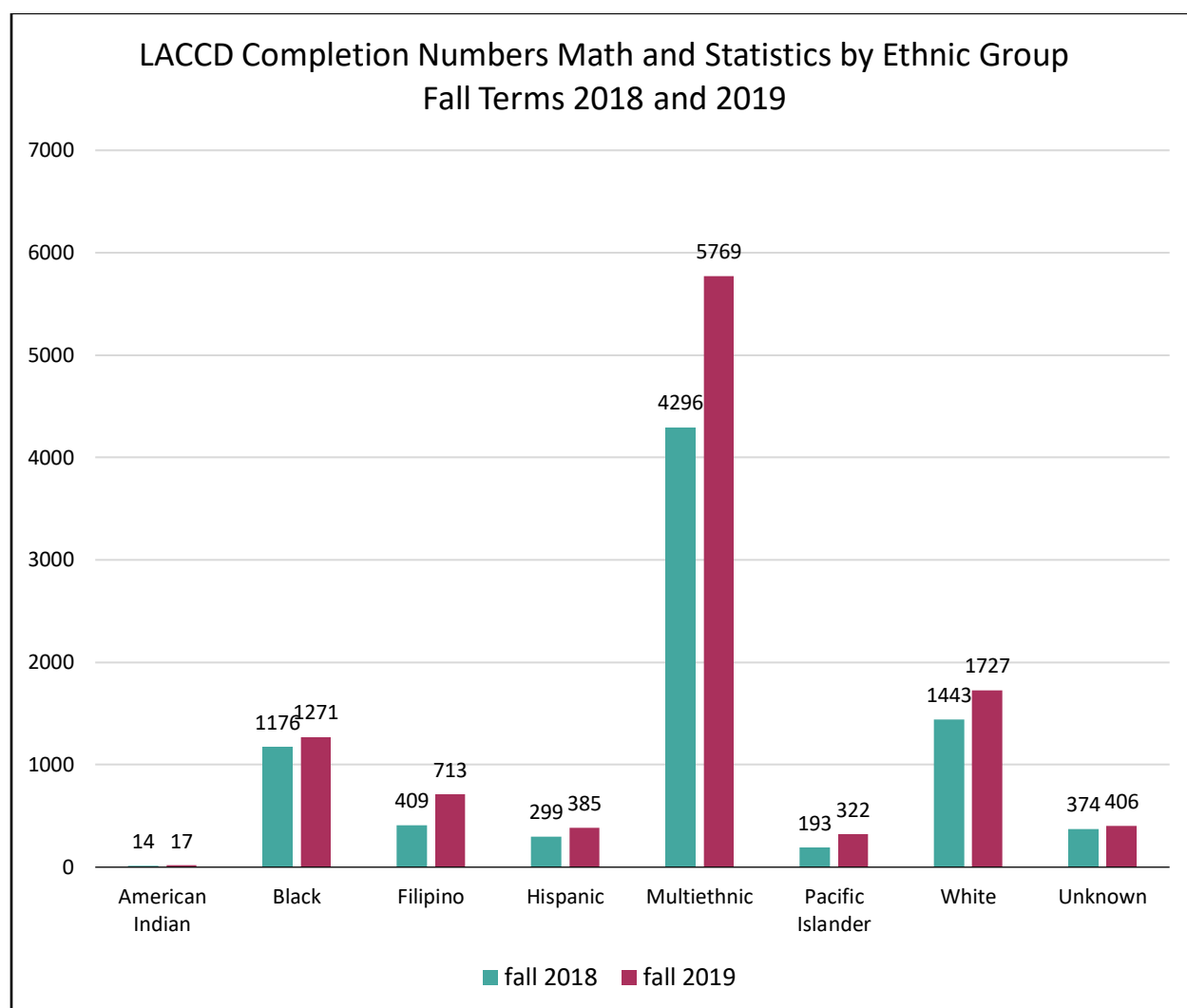
**Figure 17 LACCD enrollment in transfer-level math and quantitative reasoning disaggregated by ethnicity fall 2018 and fall 2019.**



LACCD student completion increased overall and by ethnicity. Overall completion of transfer-level math and statistics increased 29.4%, with increases by ethnicity seen numerically in Figure 18 below and by percentages: American Indian (21.4%), Asian (8.1%), black (74.3%), Filipino (28.8%), Hispanic (34.3%), multiethnic (67.7%), Pacific Islander (66.7%), white (19.7%), and unknown (8.6%). Large increases were also observed in females (34.2%), age 35-54 (57.9%), and 55+ (60.6%)



**Figure 18 – Completion Numbers in LACCD Transfer-level Math and Statistics by Ethnic Groups Comparing Fall 2018 and Fall 2019**



Overall enrollment in all LACCD math courses dropped 21.3%, which represented 7,928 students compared to the previous fall. Most students who are not in a BSTEM (Business Science Technology and Engineering and Math) major take a statistics course to transfer. District enrollment in Math 227 (Statistics), a transfer-level course, grew by 71.8% or 4,311 students. Statistics 101, an alternative to Math 227 that is growing in popularity, was offered at Pierce College and Valley College. The enrollment in Statistics 101 increased more than 250% in Fall 2019. Math 125 (Intermediate Algebra) is a pretransfer-level course that satisfies the mathematics competency requirement for an associate degree. In the LACCD, many students can now satisfy the competency requirement and bypass taking this course if they passed a mathematics course at or above the level of intermediate algebra with a grade of C- or higher in high school.

Enrollment in Math 125—one level below transfer—declined by 38.2% or 2,920 students, while Math 115 (Elementary Algebra, two levels below transfer) was virtually eliminated. New courses such as Math 125-S (Intermediate Algebra with Support) and Math 227-S (Statistics with Support) were offered as options to students who might benefit from additional support and preparation. In Fall 2019, 725 students enrolled in Math 125-S and 525 students enrolled in Math 227-S.

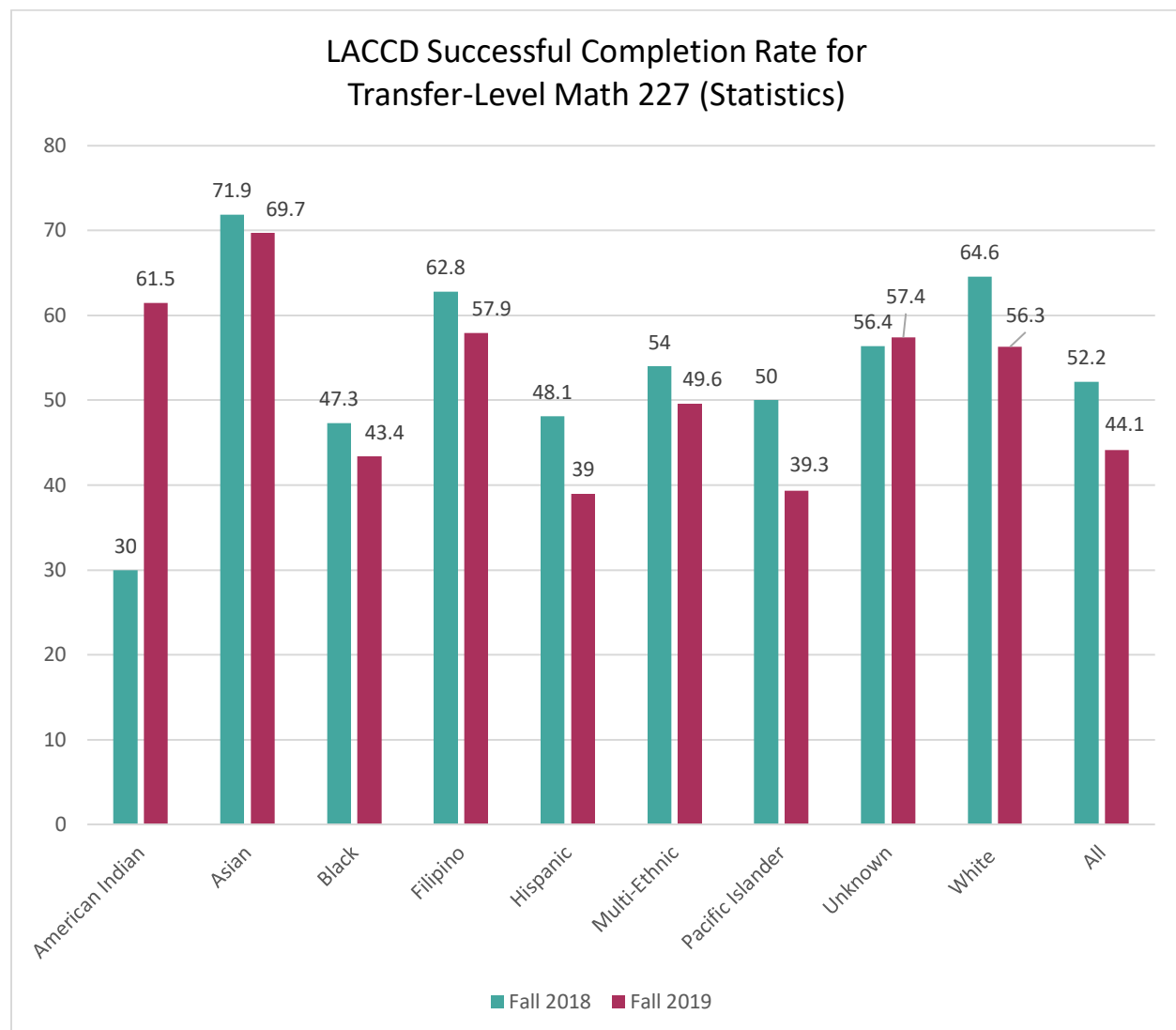
**Table 2 Districtwide Success Rates in Selected Math & Statistics Courses (LACCD, Fall 2018 Versus Fall 2019)**

Term	Math 125 Int Algebra	Math 125-S Int Algebra w/embedded support	Math 134 Accelerated Elem. & Int. Algebra	Math 227 Statistics	Math 227-S Statistics w/embedded support	Math 240 Trig	Math 245 College Algebra	Math 260 Precalculus	All Math	Stats 101
Fall 2018	44.8	---	37.1	52.2	---	55.5	41.1	52.0	48.8	74.5
Fall 2019	34.4	39.0	47.4	44.1	35.6	42.5	38.6	45.2	44.1	62.7
Net Change	-10.4	---	+10.3	-8.1	---	-13.0	-2.5	-6.8	-4.3	-11.8
Percent change	23.0%	N/A	+27.7%	15.5%	N/A	23.4%	6.1%	13.1%	-8.9%	-8.9%

The average success rate for all LACCD math courses fell from 48.4% to 44.1% (Table 2). Due to both lower enrollment and lower success rates, 5,096 fewer students were successful in any math class when compared to the previous fall. Fall 2019 enrollment for Math 227 (Statistics) increased by 67.6%, but the success rate for the class dropped from 52.2 to 44.1%. Many other LACCD math classes experienced declines in success rates, including Math 125 (Intermediate Algebra), Math 240 (Trigonometry), Math 245 (College Algebra), Math 260 (Precalculus), and Math 261 (Calculus I). Math 125 and Math 240 had some of the greatest percent declines in success rates, 23% and 23.4% respectively. Since Math 125 was the lowest-level math course in which many LACCD students were able to enroll, a 23% decline in its success rate should be of particular concern. Two new courses offered as options to students who might benefit from additional embedded support, Math 125-S and Math 227-S, had success rates of 39 % and 35.6% respectively. One interesting outlier with encouraging results was Math 134 (Accelerated Elementary and Intermediate Algebra), a one level below transfer course, which had a success rate of 47.4%. This number could be due partly to the fact that underprepared students may benefit from the additional instructional hours and the elementary algebra component of this course.

However, success declined in statistics math courses, and the gap among various ethnicities persisted and increased in statistics. The overall success rate for all students in transfer-level Math 227 (Statistics) declined by 15.5%. A decline in success rates was observed for Asian (-3.1%), black (-8.5%), Filipino (-4.9%), Hispanic (-19%), multiethnic (-8.1%), Pacific Islander (-21.4%), and white (-12.8%) students.

**Figure 19 LACCD Completion Rates for Math 227 (Statistics) by Ethnicity Comparing Fall 2018 and Fall 2019.**

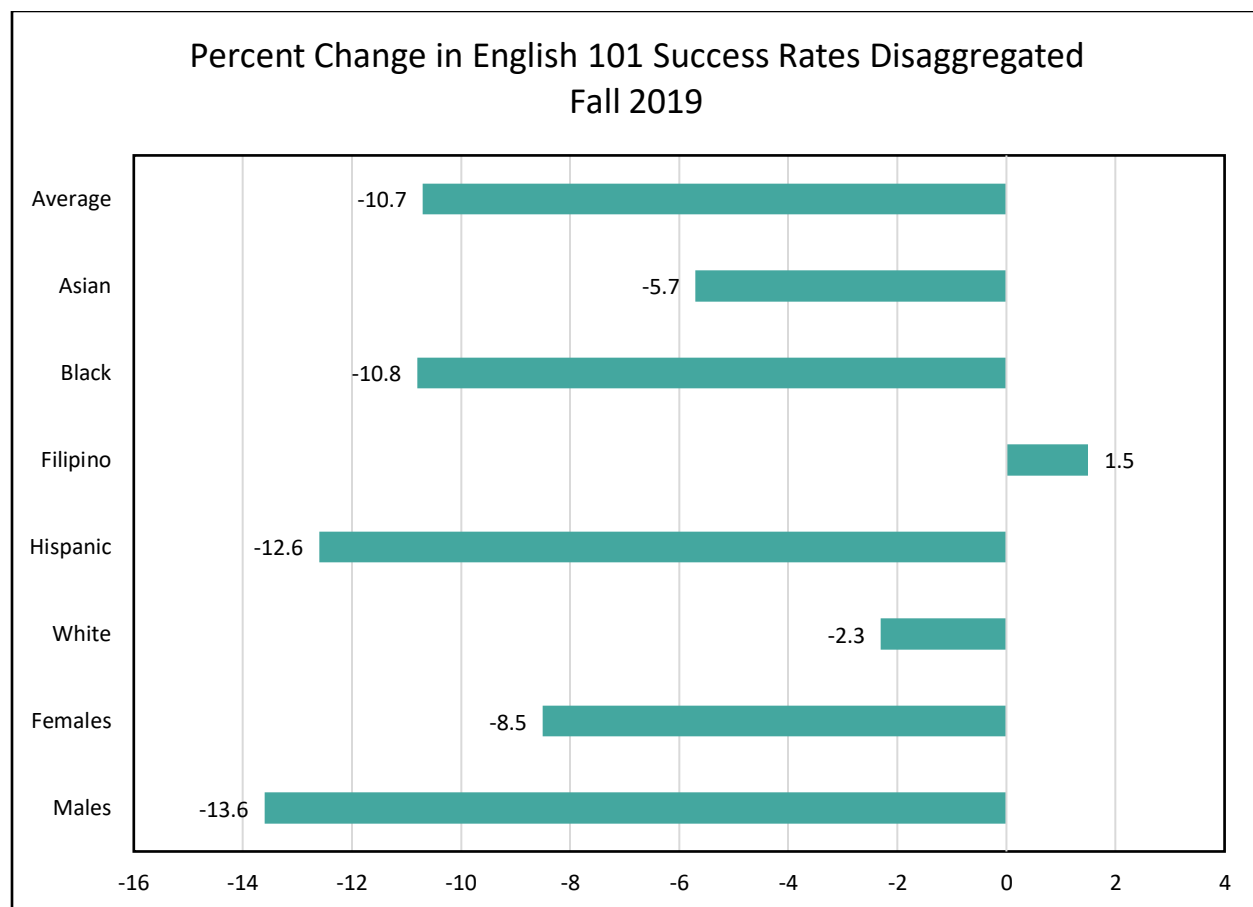


As seen in Table 3 below, the average success rate for all LACCD English courses fell from 60.9% to 58.0%. Overall, 921 fewer students were successful in any English class compared to the previous fall. The districtwide success rate for English 28—one-level below transfer—dropped slightly, and this course was offered at only three colleges Fall 2019. The success rate for English 101—a transfer-level course—dropped from 59.5% to 53.1%. English 72 (English Bridge) and English 104 (College Writing Skills and Support) are new supplemental support courses developed for students enrolled in English 101. English 28 (Intermediate Reading and Composition) and 100 (Accelerated Prep: College Writing) are one level below transfer. English 101, 102, and 103 are transfer-level English courses. Among the supplemental support courses for English 101 students, English 72, a one-unit lab course, had the highest success rate at 68.4%.

**Table 3 Districtwide Success Rates in Selected English Courses (LACCD, Fall 2018 Versus Fall 2019)**

Term	English 100 Accelerated Prep CB21A	English 28 Basic Skills CB 21A	English 101 Transfer-level	English 102 Transfer-level	English 103 Transfer-level	English 72* Supplemental Support	English 104* Supplemental Support	All English
Fall 2018	58.6	59.6	59.5	66.6	68.3	N/A	N/A	60.9%
Fall 2019	49.1	58.0	53.1	64.2	66.9	68.4	61.5	58.0%
Net Change	-9.5	-1.6	-6.4	-2.4	-1.4	N/A	N/A	-2.9
Percent change	-16.2%	-2.7%	-10.7%	-3.6%	-2.1%	N/A	N/A	-4.8

The percentage of students who received a grade of D (9.2%) or F (18.9%) or withdrew (18.7%) from English 101 all increased substantially in Fall 2019 when compared to Fall 2018. As displayed in Figure 20, success rates for the course were lower for students who identified as Hispanic (49.2%) or black (43.5%) than for Asian (72.8%), white (72.6%), and Filipino (69.3%) students (Figure 1). While success rates in English 101 declined for most groups, equity gaps grew for Hispanic and male students.

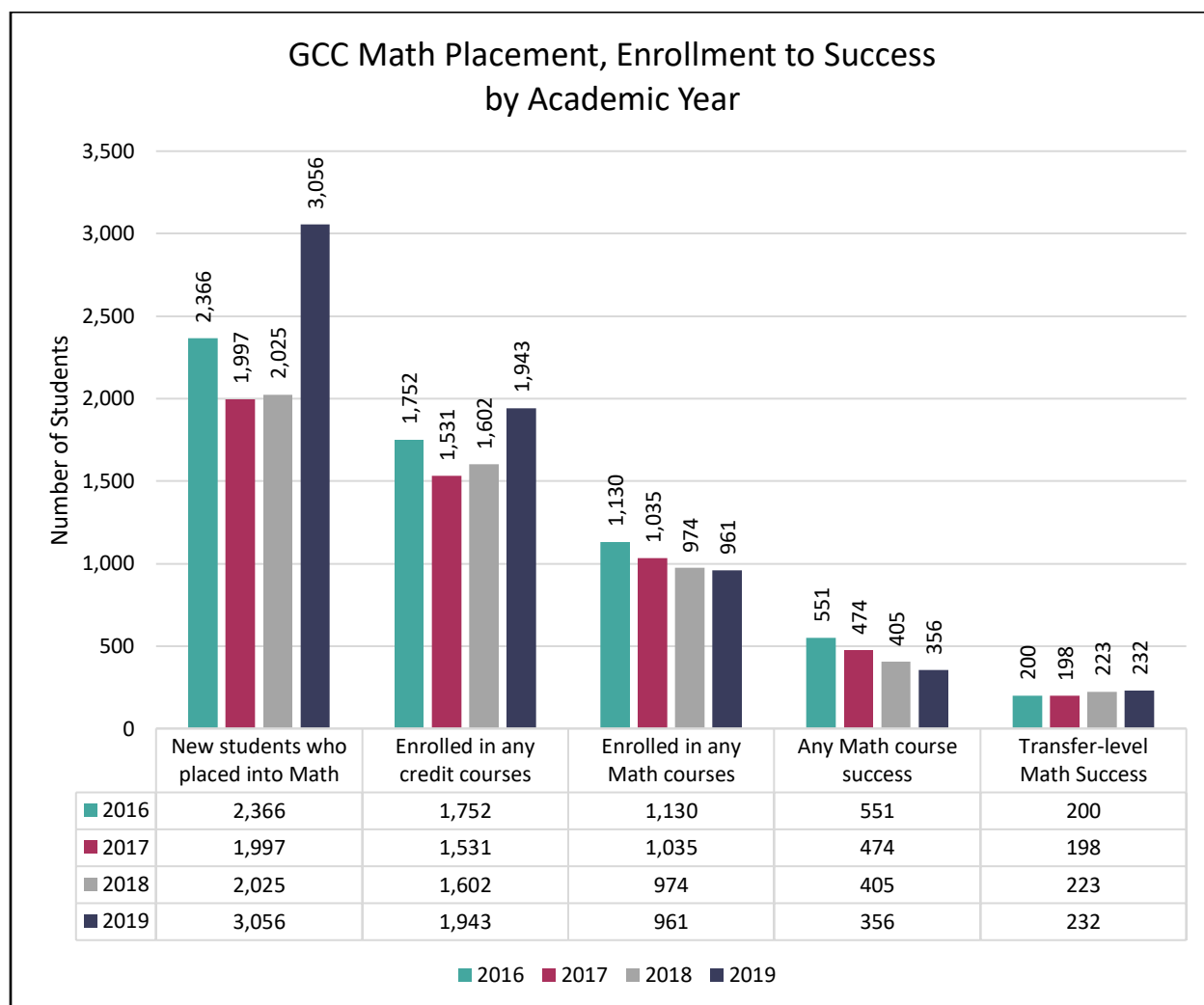
**Figure 20 LACCD Percent Change in English 101 Success Rates from Fall 2018 to Fall 2019 Disaggregated by Ethnic Group and Gender.**

LACCD colleges implemented varied approaches to math and English placement and coursework. The LACCD also noted growing disparity in outcomes among the nine LACCD colleges.

### Case Study: Local Data from Glendale Community College Placement, Enrollment, and Success

Glendale Community College (GCC) examined placement, enrollment in any credit course, enrollment in math or English, and success in any transfer-level math or English course. GCC specifically examined credit applicants and students who had not previously enrolled at GCC in credit or noncredit for academic years 2016 through 2019. Enrollments and grades represent summer and fall numbers. The figures and tables below indicate trends in the numbers placed compared to the numbers that enrolled in any courses at the college and success outcomes for any enrolled in math. Success numbers and rates include success in any math or English course as well as the success numbers for transfer-level courses.

**Figure 21 Placement of New GCC Students Compared to Any Enrollment in a Credit Course, Enrollment in Any Math, Success in Any Math, and Success in Transfer-Level Math Fall Terms 2016 to 2019.**

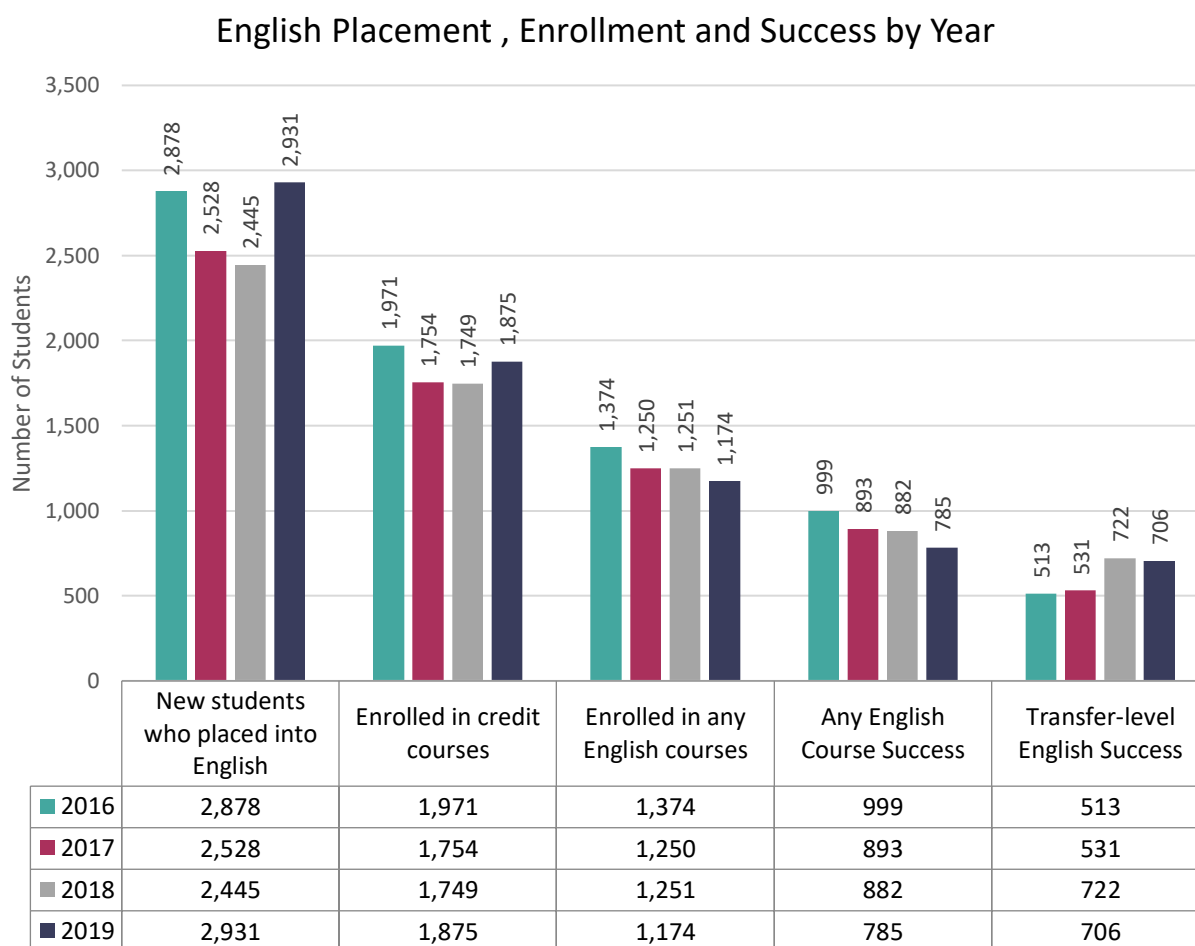


Although transfer throughput increased by 32 students from 2016 to 2019, only nine additional students passed transfer level math between 2018 and 2019. GCC math success rates overall have fallen 11.8 percentage points between 2016 and 2019 and 4.6 percentage points between 2018 and 2019.

**Table 4 GCC Numbers and Rates of Success and Unsuccessful Attempts in Math 2016-2019**

All Math First Time Course Enrollment, Success Rates and Unsuccessful Attempt Rates				
Academic Year	2016	2017	2018	2019
Enrolled in any math courses	1,130	1,035	974	961
Any math course success	551	474	405	356
Success rates for any math	48.8%	45.8%	41.6%	37.0%
Unsuccessful attempts	51.2%	54.2%	58.4%	63.0%

**Figure 22 Placement of New GCC Students Compared to Any Enrollment in a Credit Course, Enrollment in Any English, Success in any English, and Success in Transfer-Level English Fall Terms 2016 to 2019**



While overall English successes have decreased, 193 additional students completed English from 2016 to 2019. Notably, the number in 2019 of transfer-level English successes decreased from 722 to 706. Unsuccessful English attempts have increased 5.8 percentage points from 2016 to 2019. GCC's Program Review Summary states that the success rate for ENGL 101 has decreased from 73%

in 2015-2016 to 69% in Fall 2019. English 101+ has a lower success rate than ENGL 101, with an average success rate of approximately 55%. However, as this class draws primarily from students who are likely less academically prepared—entering with a GPA of less than 2.6—this number is not completely surprising. Success rates for English 101 and 101+ courses in 2019-2020 were higher than the average of what the California Acceleration Project (CAP) reports from its list of “strong AB 705 implementer colleges.” CAP’s average success rate for colleges implementing updated versions of ENGL 101 and ENGL 101+ type courses without a trail of requisites is lower than those at GCC. CAP reports seeing an average success rate of 66% for courses analogous to English 101 and 60% for courses analogous to English 101+ (Henson, 2020).

**Table 5 GCC Numbers and Rates of Success and Unsuccessful Attempts in English 2016-2019**

All English Course First Time Enrollment, Success Rates and Unsuccessful Attempt Rates				
Academic Year	2016	2017	2018	2019
Enrolled in any English courses	1,374	1,250	1,251	1,174
Any English course success	999	893	882	785
Success rates for any English	72.7%	71.4%	70.5%	66.9%
Unsuccessful English attempts	27.3%	28.6%	29.5%	33.1%

Glendale Community College is examining the gaps from placement to enrollment and from enrollment to success for both English and math. GCC makes guided self-placement available for students. Initial data on students that chose GSP shows promising results.

## UNINTENDED CONSEQUENCES FOR SPECIAL POPULATIONS<sup>19</sup>

Special populations<sup>20</sup> are students identified with specific characteristics that increase the need to carefully track and cohort the students in order to serve them better. Some special population groups are high performers—such as STEM, Puente, and Mesa—that enter the cohort based on a variety of characteristics such as ethnic group, major, or socioeconomic status. Others are grouped by characteristics such as incarcerated, middle college, or foster youth. Reporting these student characteristics is mandatory. Mathematics data cannot be truly disaggregated for special populations without access to the CB coding in order to specifically identify these populations within the courses, and addressing this issue should be a high priority of local colleges that serve these populations. For this reason, in this study the special populations have been examined for English outcomes only.

When disaggregated by special populations, statewide data using TOP code 1501.00 for transfer-level English courses raises significant questions and opportunities to better understand the kind of support and resources that contribute to success. The data indicates that examination of MESA/ASEM and Puente data may suggest strategies that can be expanded for greater success among other special populations. On the other hand, the data raises questions about the impact of transfer-level placement on DSPS, EOPS, CalWORKs, foster youth, CAFYES, active military, and veterans. Various factors might inform placement to better optimize success for these populations.<sup>21</sup>

<sup>19</sup> Data source from the CCCC Datamart data for fall semesters 2016, 2017, 2018, 2019.

<sup>20</sup> See appendix A for descriptions of special populations

<sup>21</sup> See appendix B for definitions of special populations



Puente data indicates a small reduction in basic skills placement but a 500% increase in transfer placement. The data indicates no decline in transfer success with a 76.88% success rate in 2019, an increase in overall success rates, and significantly 1,214 successful English completions and only 365 English failures.

**Table 6 Puente Success Rates in Transfer-level English Fall Terms 2016-19**

Puente Transfer-level English (TOP 1501.00) Enrollment, Success and Success Rate and Changes			
Special Population - Puente	transfer-level Enrollment Count	transfer-level Success Count	transfer-level Success Rate
<b>F 2016 Puente</b>	373	280	75.07%
<b>F 2017 Puente</b>	520	397	76.35%
<b>F 2018 Puente</b>	731	555	75.92%
<b>F 2019 Puente</b>	1,579	1,214	76.88%
<b>change</b>	1,206	934	1.81%

**Figure 23 Puente Enrollment, Success, and Unsuccessful Attempts for English (TOP Code 1501.00) Fall Terms 2016-2019**

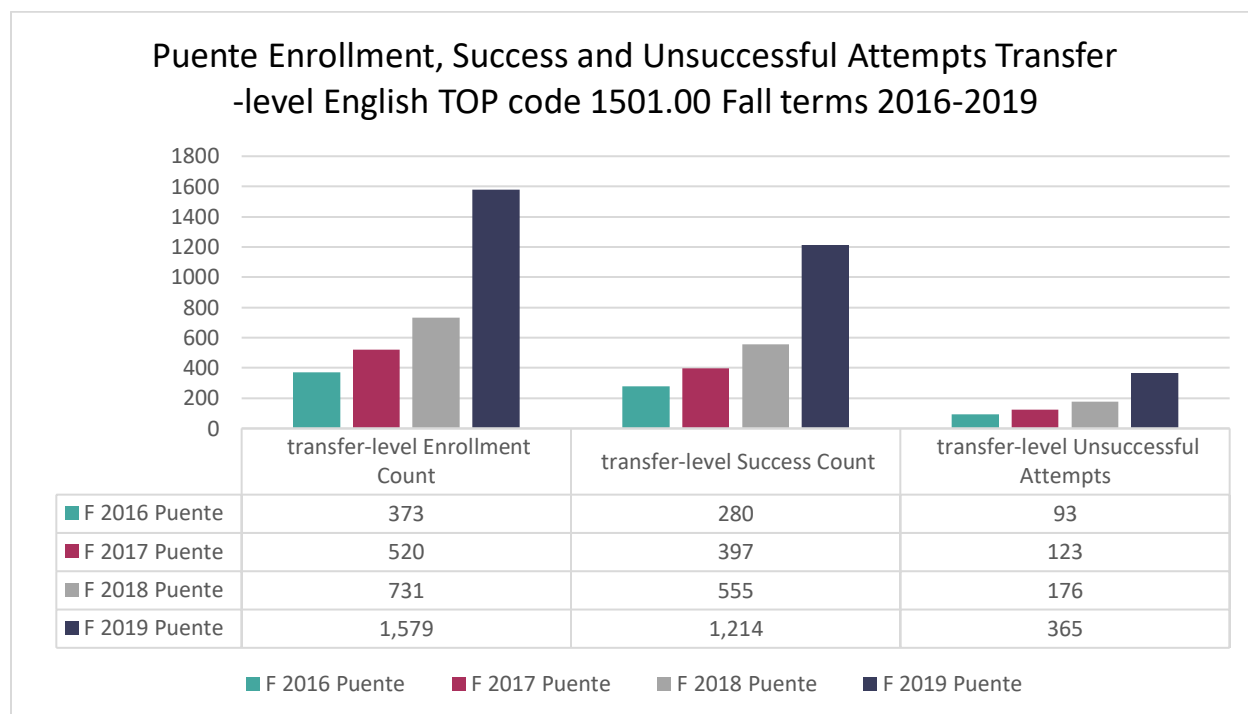


Table 7 shows data for Disabled Students Programs & Services (DSPS) populations, which are very diverse. A student may enter this special population with varying circumstances ranging from learning disabilities to physical disabilities and traumatic brain injuries to various genetic or other conditions. In Fall 2016, there were 10,608 DSPS students in basic skills English and 9,373 in transfer-level English. By Fall 2019, enrollment shifted to only 3,521 DSPS students in basic skills English and 14,594 DSPS students in transfer-level English. Throughput of 2,603 additional successful students should be considered alongside the higher number of unsuccessful attempts at 2,618. Treating DSPS populations with a homogenous algorithm may overlook important specific factors and outcomes within this population. Personalized educational planning for DSPS students

may be a successful design to match each student's goals and abilities with courses to optimize the student's success. The success rate for DSPS students has decreased by 7.15 percentage points from fall terms 2016 to 2019.

**Table 7 Disabled Students Programs & Services (DSPS) Enrollment, Success, and Unsuccessful Attempt Counts Fall Terms 2016-2019 in Transfer Level English TOP Code 1501.00**

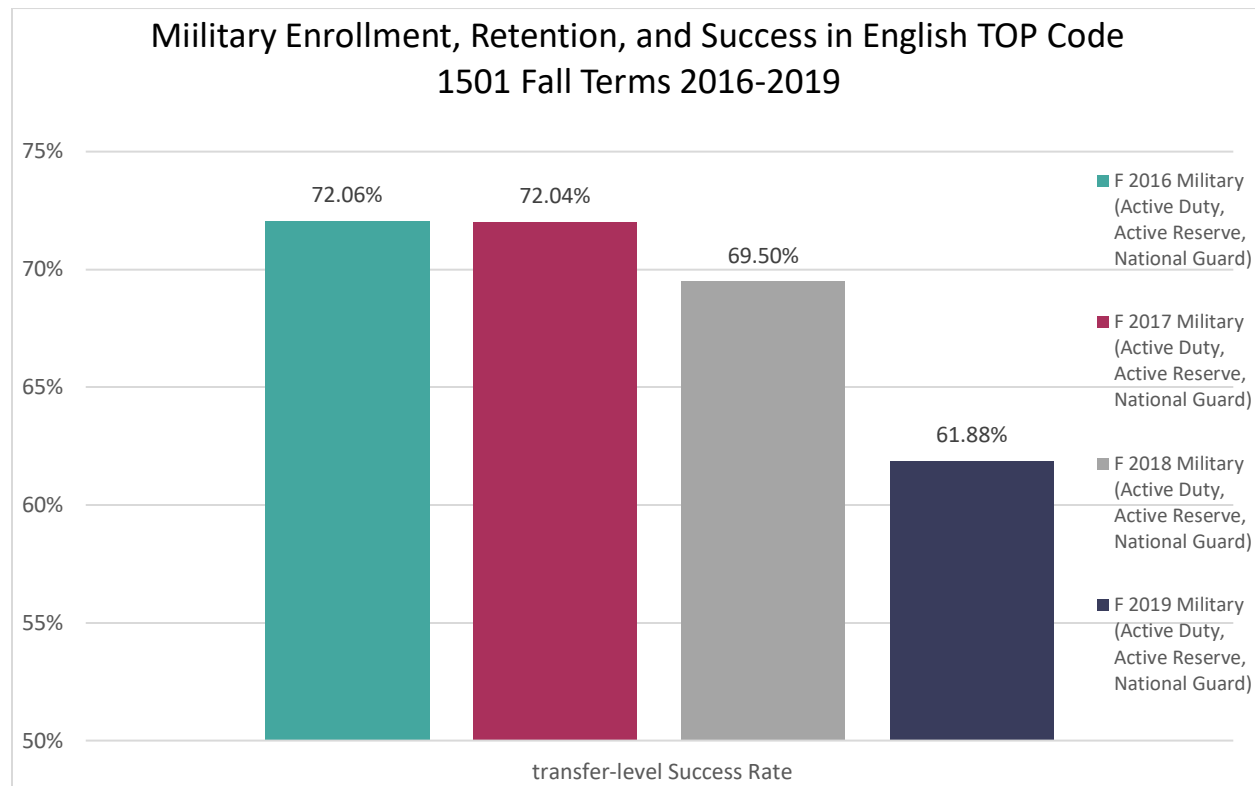
Special Population – DSPS Disabled Student Programs and Services Transfer-Level English TOP code 1501.00 Fall terms 2016-2019				
Fall Term	Enrollment Count	Success Count	Unsuccessful attempts	Success Rate
F 2016 DSPS	9,373	6,546	2,827	69.84%
F 2017 DSPS	9,863	6,902	2,961	69.98%
F 2018 DSPS	11,319	7,606	3,713	67.20%
F 2019 DSPS	14,594	9,149	5,445	62.69%
change	5,221	2,603	2,618	-7.15%

Veterans and active military represent two additional special populations with outcomes that need to be examined due to unintended consequences regarding the GI bill and subsequent financial aid. The table and chart below show a drop in active military success rates of 10.18 percentage points from Fall 2016 to Fall 2019.

**Table 8 Military Enrollment, Success, and Unsuccessful Attempts**

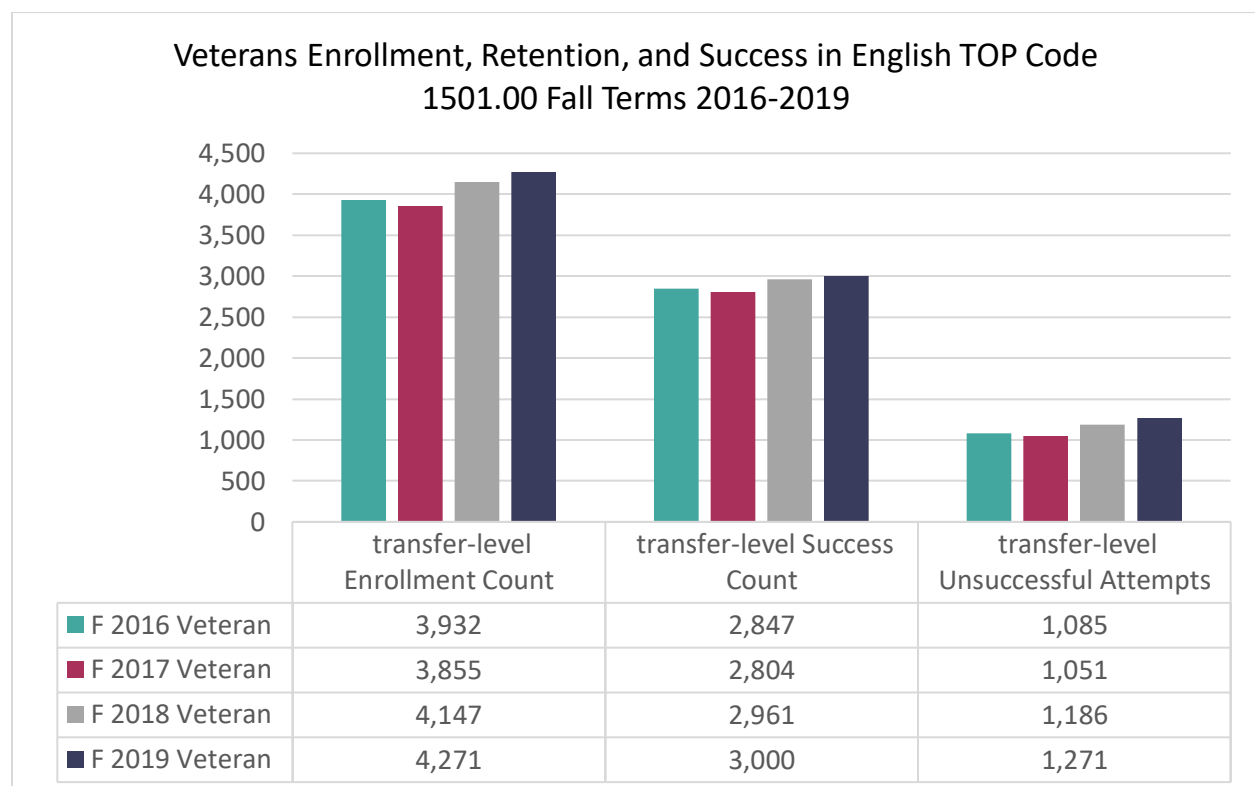
Special Population - Military (Active Duty, Active Reserve, National Guard) Transfer-Level English TOP code 1501.00 Fall terms 2016-2019				
Fall Term	Enrollment Count	Success Count	Unsuccessful attempts	Success Rate
F 2016	1,396	1,006	390	72.06%
F 2017	905	652	253	72.04%
F 2018	754	524	230	69.50%
F 2019	2,243	1,388	855	61.88%
Change	847	382	465	-10.18%

**Figure 24 Military Success Rates in Transfer-level English (TOP Code 1501)**



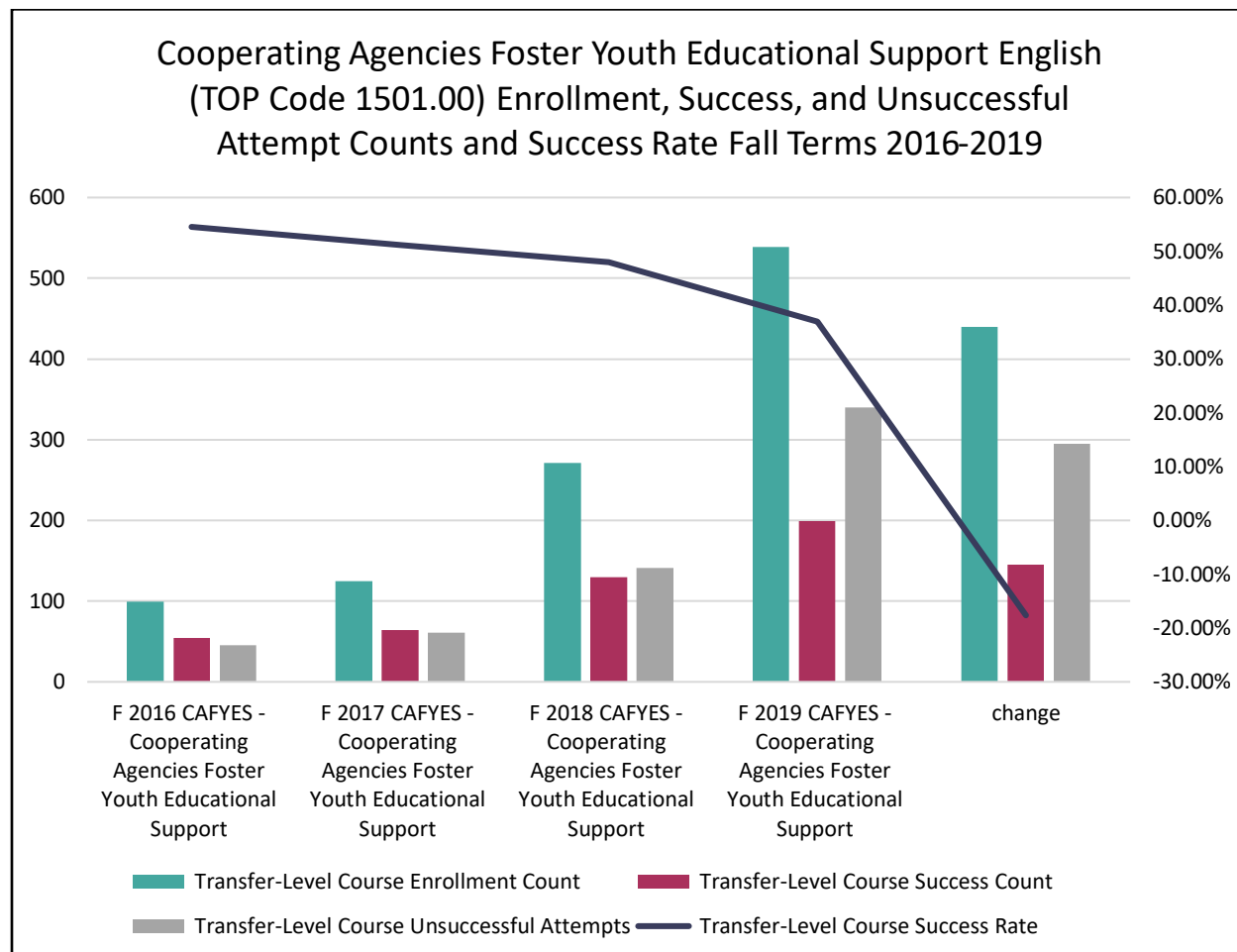
Veterans gained slightly more throughput but also increased unsuccessful completions.

**Figure 25 Veteran Success Rates in Transfer-level English**



Foster youth and CAFYES (Cooperating Agencies Foster Youth Educational Support) are two special population cohorts requiring further analysis and improvement. The number of CAFYES students placed into transfer level increased by 500 times, with 199 successful completions in Fall 2019 but 340 unsuccessful attempts. The success rate decreased by 17.65 percentage points. See tables and graphs below)

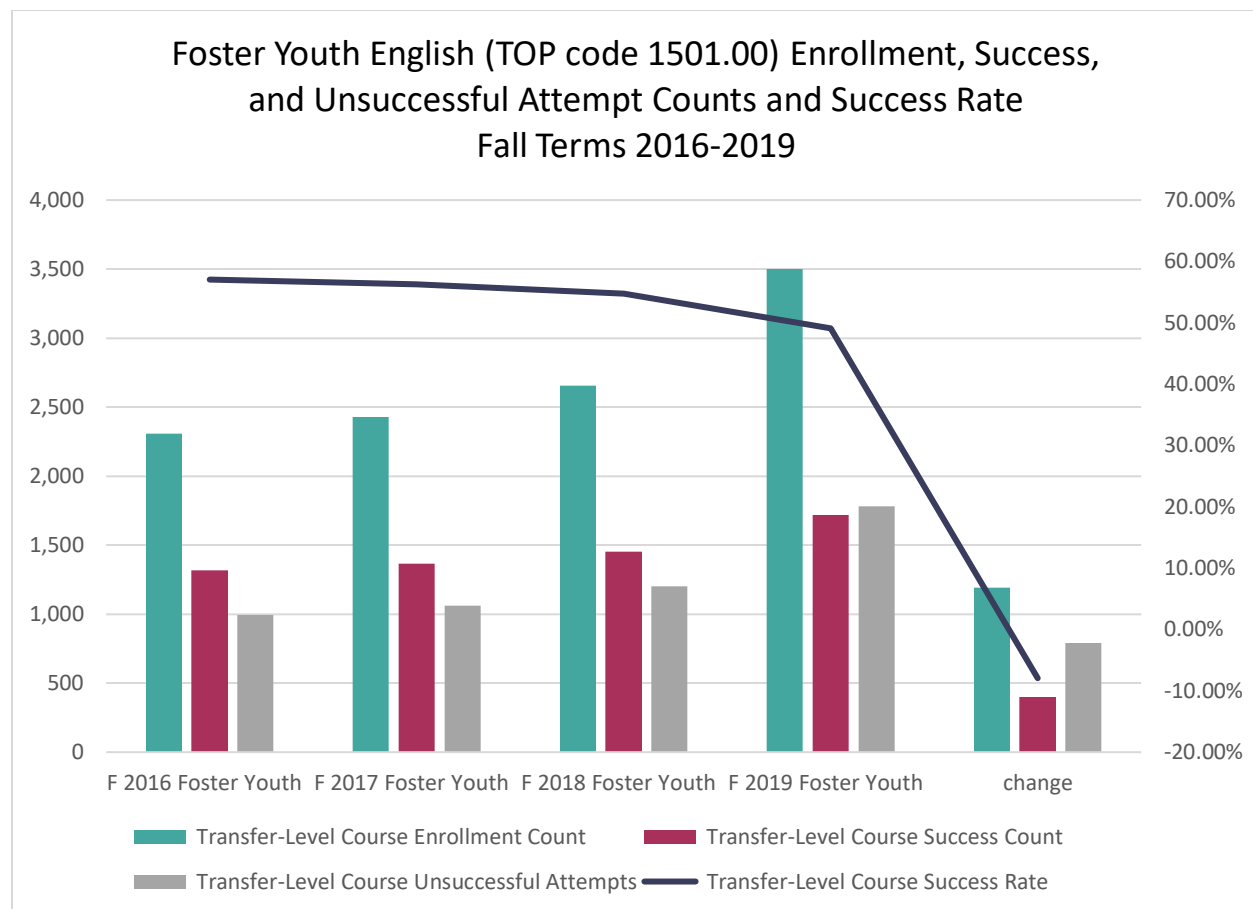
**Figure 26 CAFYES transfer-level English data fall term 2016-2019**



**Table 9 CAFYES English 1501 Data Fall Terms 2016 to 2019**

CAFYES (Cooperating Agencies Foster Youth Support) Transfer-Level English TOP code 1501.00 Fall Terms 2016-2019				
Fall Terms	Enrollment Count	Success Count	Unsuccessful attempts	Success Rate
F 2016 CAFYES	99	54	45	54.55%
F 2017 CAFYES	125	64	61	51.20%
F 2018 CAFYES	271	130	141	47.97%
F 2019 CAFYES	539	199	340	36.92%
change	440	145	295	-17.63%

**Figure 27 Foster Youth Transfer-level English Data Fall Terms 2016-2019**



**Table 10 Foster Youth Transfer -level English Data Fall Terms 2016-2019**

Foster Youth Transfer-Level English TOP code 1501.00 Fall terms 2016-2019				
Fall Terms	Enrollment Count	Success Count	Unsuccessful Attempts	Success Rate
<b>F 2016 Foster Youth</b>	2,309	1,317	992	57.04%
<b>F 2017 Foster Youth</b>	2,427	1,367	1,060	56.32%
<b>F 2018 Foster Youth</b>	2,656	1,455	1,201	54.78%
<b>F 2019 Foster Youth</b>	3,501	1,719	1,782	49.10%
<b>change</b>	1,192	402	790	-7.94%

Foster youth already had a significant transfer-level English success rate gap compared to white non-Hispanic students. In Fall 2019, that success gap expanded to 26 points, with a 49.10% success rate for foster youth as compared to 75.28% success for white, non-Hispanic students. This equity gap between white non-Hispanic and CAFYES was 38 percentage points. Colleges should ask whether this success rate indicates that they are optimizing success for foster youth and CAFYES students or if they should consider different variables.

## WHAT STRATEGIES AND SUPPORT MODELS SHOW PROMISE?

Providing students with self-agency, which means options over which they have a choice, allows them to adjust for personal factors in their lives that are not included in placement rules. Glendale Community College and other colleges have used opportunities to implement guided self-placement into a variety of courses. Initial data from GCC based on student self-placement into statistics indicates that when students have the opportunity to select the courses they feel prepared for, they tend to complete at a higher rate than students placed primarily based on GPA. While the sample number is small, 322 students placed by GPA into statistics had a 49.4% success rate while 50 students self-placed into statistics had a 64% success rate in Fall 2019.

Specific populations, most likely those in the upper range of pre-AB 705 placement cut-offs, have done well and benefitted from a broader placement strategy into transfer-level coursework. Examples of this success are Asian ethnic groups and Puente and MESA students as displayed in the success rates in the statewide data. However, the students with the largest gaps in skills and resources may have opted not to enroll or may have become part of the growing number of unsuccessful attempts, perhaps contributing to overall declining enrollment in credit English and mathematics. Strategies that more carefully consider student preparation and ultimate educational goals in a guided pathways model can customize both English and mathematics and quantitative reasoning for each student, better aligning and optimizing success from a student perspective. While the numbers are currently small, good results have been documented in the use of noncredit support and pre-requisite coursework, integration of counseling into courses, non-credit bridges for credit coursework, integration of ESL companion support for mathematics, restructuring of ESL transferable coursework to enhance language proficiency in general education courses, and creation of high value ESL certificates.

In this paper, local case studies are referenced in an attempt to acknowledge how diverse each California community college is and the importance of aligning strategies with the local student population. The data below describes the noncredit programs at Mount San Antonio College and Glendale Community College, two institutions that have effectively used noncredit strategies and have experience developing and implementing noncredit curriculum and integrating it with credit coursework.

Faculty teaching noncredit at Mount San Antonio College have worked with their colleagues teaching credit courses to target areas of specific student need in a program called Academic Intervention for Math and English (AIME). Three noncredit courses were developed to address competencies for English, BSTEM, and statistics, and the courses are offered several times per year using direct instruction and intrusive, embedded counseling and tutoring.

- **Math preparation for statistics success:** This course is a review of arithmetic and algebraic skills that are required to be successful in college statistics. It includes an introduction into basic vocabulary and concepts of statistics. The emphasis is on critical reading and thinking skills as they pertain to college statistics.
- **Math preparation for BSTEM success:** This course is a review of algebraic skills to be successful in BSTEM (Business, Science, Technology, Engineering, and Mathematics) courses.
- **English preparation for college success:** This course develops expository and argumentative essay and research paper formatting. It emphasizes critical reading of academic material for college coursework.

The specific competencies addressed in each of the classes are detailed in Figure 28 below.

**Figure 28 Competencies for Noncredit Math and English Preparation at Mt SAC**

BS EPCS (English Preparation for College Success)	BS MPS (Math Preparation for Statistics Success)	BS MPSTM (Math preparations for BSTEM Success)
<ul style="list-style-type: none"> <li>• Close reading and critical analysis of texts</li> <li>• Strategies for revision</li> <li>• Thesis development</li> <li>• Expository writing</li> <li>• Argumentative writing</li> </ul>	<ul style="list-style-type: none"> <li>• Ratios, fractions, decimals, percentages</li> <li>• Measures of central tendency</li> <li>• Measures of dispersion</li> <li>• Dot plots, histograms, boxplots</li> <li>• Probability</li> <li>• Graphing skills</li> <li>• Calculator Skills</li> </ul>	<ul style="list-style-type: none"> <li>• Functions, function notation, graphing basic functions</li> <li>• Factor and graph absolute value equations and inequalities</li> <li>• Quadratic and other polynomial functions</li> <li>• Properties of exponential functions, fractional exponents, radicals</li> <li>• Systems of equations</li> </ul>

The numbers are small but show promise, with AIME students who enrolled in English 1A after the noncredit course succeeding at 71% as shown in Table 11 and mathematics success of 70% as shown in Table 12. These strategies offer an option for students who want better preparation prior to being placed into transfer level coursework.

**Table 11 AIME Noncredit English Preparation Data from Mount San Antonio College**

AIME English Enrollments and Transfer Level Success 2018-19	2018-19 Total AIME Enrollment	Attempted ENGL 1A After Taking AIME*	% Attempted ENGL 1A After Taking AIME	Successful in ENGL 1A After Taking AIME	Success Rate of Students Who Took ENGL 1A After AIME
AIME English Students	133	79	<b>59%</b>	56	<b>71%</b>

**Table 12 Noncredit Math Preparation Data from Mount San Antonio College**

AIME Math Enrollments and Transfer Level Success 2018-19	2018-19 Total AIME Math Enrollment	Attempted Transfer Math After Taking AIME*	% Attempted Transfer Math After Taking AIME	Successful in Transfer Math After Taking AIME	Success Rate of Students Who Took Transfer Math After Taking AIME
AIME Math Students	214	61	<b>29%</b>	43	<b>70%</b>

Feedback collected from students includes the comments seen in Figure 29, which indicate that students who elected to take the course found it useful in both math and English.

**Figure 29 Student Comments from Mount San Antonio College AIME program**

Student Quotes About AIME	
	• I would recommend this course"
	• "This course was very helpful"
	• "Gave me a chance to practice my writing"
	• "Helped me improve because English is my second language"
	• "Good refresher"
	• "Helped me prepare for English 1A"
	• "Very good program"
	• "Helped me prepare for higher level math"
	• "Helped build my confidence in math"
	• "It's been 25 years since I have done this kind of math and this course helped me"

Glendale Community College has a very large proportion of students that are English language learners and do not have high school transcripts. GCC also has a robust noncredit program. Research from GCC indicates that students who take noncredit classes are more successful in credit classes than students directly entering credit classes. Faculty indicate that the noncredit coursework prepares students for the rigor of college math and English. GCC research also indicates that students who take noncredit courses outperform students beginning in credit, not only in the initial course but also in subsequent courses (see Tables 13 and 14 below).

Table 13 compares the rate of success in English between credit-only students and those who began in noncredit at GCC. Importantly, this success rate has been improving over the last years.

**Table 13 Comparison of Credit and Non-credit and Student English Success at GCC**

GCC Credit and Non-credit Course taking Success in English Composition and Subsequent English Courses	2014-15 to 2016-17	2015-16 to 2017-18	2016-17 to 2018-19
Pass Rate of English 101 Students			
Credit Students	66.40%	67.60%	70.20%
Noncredit Students	71.50%	70.70%	80.10%
Pass Rate of English 104 Students – Two courses later continued success			
Credit Students	76.60%	76.50%	74.20%
Noncredit Students	75.20%	76.60%	80.10%

Table 14 compares the rate of success in various mathematics courses between credit-only students and those who began in noncredit at GCC. The noncredit students do much better in each



of these courses below transfer. For GCC, this data has further connected the importance of language learning in math proficiency and stimulated the development of specific ESL coursework and collaboration integrated with transfer-level math courses.

**Table 14 Comparison of Credit and Non-credit and Student Math Success at GCC**

GCC Credit and Non-credit Course taking Success in Specific Mathematics Courses and Subsequent Courses	2016-17	2017-18	2018-19	2019-20*
Math 155/255 - Arithmetic & Pre-Algebra Math Success Credit Only	39.60%	45.30%	48.50%	--
Math 155/255 - Arithmetic & Pre-Algebra Math Success from Noncredit	66.50%	70.10%	72.40%	--
Math 141/145/146/245/246 – Elementary Algebra Math Success Credit Only	48.80%	45.10%	40.20%	40.00%
Math 141/145/146/245/246 – Elementary Algebra Math Success from Noncredit	66.80%	69.50%	62.10%	67.90%
Math 101/119/120/219/220 – Intermediate Algebra Math Success Credit Only	50.70%	46.70%	44.00%	65.70%
Math 101/119/120/219/220 – Intermediate Algebra Math Success from Noncredit	70.30%	63.90%	63.40%	74.50%

These self-selected and alternative means of gaining English and mathematics skills provide options for students who have communicated that they do not have enough time in the semester to take a co-requisite class, and they are quite different from mandated remedial courses.

After full implementation of AB 705 for ESL has begun, a follow up report should be produced to address innovative ESL strategies and case studies such as the ESL milestone certificates at colleges like Cerritos that have enabled students to acquire the proficiencies they need to gain English language skills. In addition, adoption of ESL coursework that meets general education requirements and is transferable has provided key language learning options prior to transfer-level English courses. “Many colleges offer ESL courses that are transferable to UC and CSU. Students are benefiting from the opportunity to make progress toward degree and transfer goals while gaining proficiency in academic English. Recent efforts to secure humanities credit for advanced ESL courses may further boost the impact of transferable ESL coursework” (Rodriquez, 2019). In addition, case studies at Glendale College that concern ESL support courses for mathematics, particularly statistics, have shown positive results and shown how important language acquisition is with regard to mathematics.

While many new support models have presented additional successful strategies, students often juggle high unit loads and time commitments, and for some doing so poses a difficulty. Successful co-requisite models have been described by the Accelerated Learning Program and the authors below as small course sections, seamless with regard to course connections, and most often having the same faculty teach both the target and the support course.

In support of AB 705 implementation, the colleges, and the students, the CCCC combined the Basic Skills Initiative allocations into the Student Equity and Achievement (SEA) Program, and colleges were permitted to use some of this funding for AB 705 implementation. Additionally, the SEA Program was created to provide colleges with strategically flexible funding, allowing potentially large amounts of equity funding to be used towards a variety of strategies to support more equitable student achievement in foundational skills courses in English and mathematics. In addition, guided pathways allocations also may be used for AB 705 implementation.

Corequisite or concurrent support models have additional costs not associated with standard or traditional courses. The smaller class sizes, which are essential to the high-touch support, add to the cost considerably. In addition, increased tutoring, and counseling support present additional costs. Although corequisite support developed by Community College of Baltimore County used the strategy successfully and many colleges nationally adopted their concept of co-requisites, a recently updated article by Alexandros Goudas (2020) describes the importance of optimizing support and placement:

The most important factor to consider is that because some institutions are trying to cut costs, and others have wanted to limit remediation because they view it as ineffective or a barrier (Fain, 2012), a good idea for increasing college-level course outcomes has switched into a convenient and seemingly data-based model to allow institutions to fast-track and bypass remediation, all without the level of support in college-level courses that was initially recommended and studied. In other words, using Accelerated Learning Program (ALP)<sup>22</sup> as a basis, some institutions are implementing versions of corequisites that are nothing more than placing remedial students into college-level courses and adding one lab hour as the sole means of support. These variations are not based on research, and therefore they resemble a bait-and-switch scheme. In order for the reform to qualify as a true bait and switch, of course, it must be intentional. Indeed, it is clear that some organizations, such as Complete College America (CCA), are engaging in the promotion of low-support corequisites solely as a means by which to limit or eliminate remediation. However, others are engaging in similar switches unintentionally. Regardless of intent, nevertheless, the corequisite reform movement may be harming at-risk students more than helping them.

Goudas' analysis, while not necessarily implying malicious intent on the part of colleges, describes many narratives statewide and nationwide. In moving forward, colleges need to analyze English and mathematics pathways and placement and address any possible or perceived pitfalls with a goal of improving programs offered to students and optimizing success.

The additional cost associated with units or load may break even with the traditional model since successful students are finished in one term as opposed to two or more terms. With the recent COVID-19 crisis and the economic downturn, the ability for colleges to fully support these models may be limited as institutions make choices on what programs to support and how to support students in a virtual world.

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22 Accelerated Learning Program is the program model developed at the Community College of Baltimore County.

LACCD analysis of student drops and withdrawals early in the Fall 2019 semester—week 6—compared to patterns in the previous fall semester caused the district to create a survey tool for students that elicited helpful information from the students’ perspective.

**Figure 30 LACCD Student Initiated Drops and Withdrawals in English and Math Fall 2019**

**Student Initiated Drops and Withdrawals in Selected English, Math and STAT Classes  
(through the end of Week 6)**

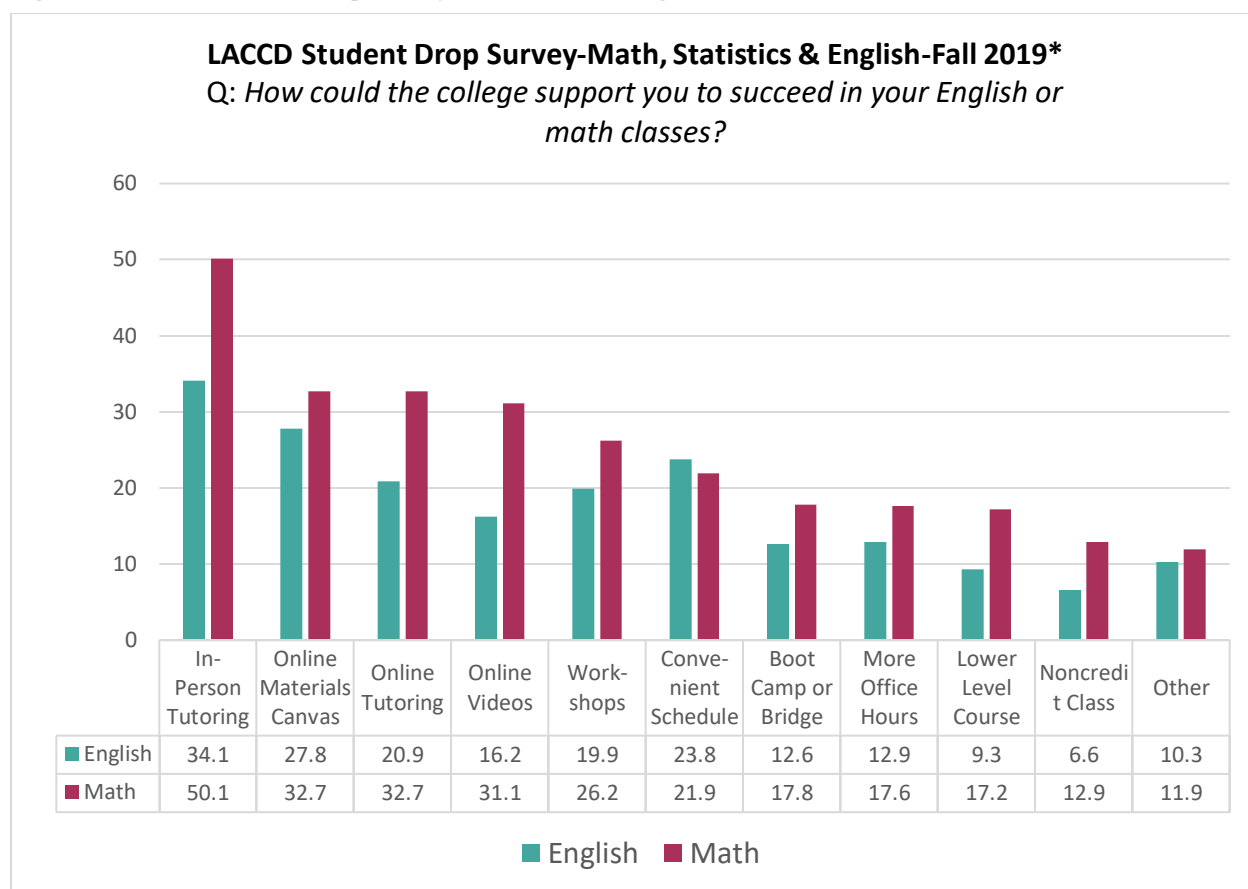
Subject	Catalog Nbr	Fall 2018 Enrolled (as of the end of 6th week)	Fall 2019 Enrolled (as of the end of 6th week)	Change	% Change	Fall 2018 Stdnt Init Drops (as of end of 6th week)	Fall 2019 Stdnt Init Drops (as of end of 6th week)	Fall 2018 % Stdnt Init Drops	Fall 2019 % Stdnt Init Drops
ENGLISH	101	12,207	18,166	5,959	49%	1,726	2,598	12.4%	12.5%
ENGLISH	102	3,212	3,280	68	2%	571	493	15.1%	13.1%
ENGLISH	103	3,484	3,585	101	3%	579	617	14.3%	14.7%
<b>Subtotal</b>		<b>18,903</b>	<b>25,031</b>			<b>2,876</b>	<b>3,708</b>	<b>13.2%</b>	<b>12.9%</b>
MATH	125	7,141	4,371	-2,770	-39%	1,202	1,110	14.4%	20.3%
MATH	134	134	880	746	557%	19	228	12.4%	20.6%
MATH	137	240	618	378	158%	34	97	12.4%	13.6%
MATH	227	5,696	9,796	4,100	72%	1,127	1,894	16.5%	16.2%
MATH	238	433	506	73	17%	85	151	16.4%	23.0%
MATH	240	795	973	178	22%	89	124	10.1%	11.3%
MATH	241	342	467	125	37%	63	81	15.6%	14.8%
MATH	245	561	716	155	28%	103	202	15.5%	22.0%
MATH	260	1,315	1,611	296	23%	163	299	11.0%	15.7%
MATH	261	1,190	1,066	-124	-10%	206	140	14.8%	11.6%
MATH	262	666	685	19	3%	88	96	11.7%	12.3%
MATH	263	427	432	5	1%	59	61	12.1%	12.4%
<b>Subtotal</b>		<b>18,940</b>	<b>22,121</b>			<b>3,238</b>	<b>4,483</b>	<b>14.6%</b>	<b>16.9%</b>
MATH	125S	0	660	660	N/A	0	188		22.2%
MATH	227S	0	484	484	N/A	0	105		17.8%
STAT	1	586	202	-384	-66%	110	30	15.8%	12.9%
STAT	100	157	305	148	94%	11	52	6.5%	14.6%
STAT	101	403	1,390	987	245%	41	197	9.2%	12.4%
<b>Subtotal</b>		<b>1,146</b>	<b>1,897</b>			<b>162</b>	<b>279</b>	<b>12.4%</b>	<b>12.8%</b>

Data does not include Instructor Initiaed Drops or Ws

Prepared on: 10/07/2019

In the Fall 2019 survey of students who dropped mathematics, statistics, or English classes, the LACCD found that students had many reasons for dropping and indicated that the colleges could better support their success through additional tutoring, online resources, workshops, office hours, lower-level courses, noncredit classes, and other interventions (see Table 31).

**Figure 31 LACCD Student Drop Survey on Success Strategies**



## CONSIDERING THE EDUCATIONAL NEEDS AND PREPARATION OF THE LOCAL STUDENT POPULATION

When determining how best to reform placement protocols in compliance with AB 705 or California Education Code §78213, colleges must consider the entire range of the educational needs and preparation of the local student population. While the goal of getting students through transfer-level English and mathematics is of high value, colleges must also make certain that students are taking the courses that prepare them for the best chance of success in their self-determined educational goals, such as coursework for job advancement, a certificate or degree, transfer to a 4-year institution, career, life-long learning, self-improvement, or life beyond the institution. While both financial and state-wide data goals may be easier to address by placing a student in a liberal arts mathematics pathway as opposed to a STEM pathway, the more important consideration should be the student's self-determined goals. Liberal arts pathways—which means statistics at many colleges, but also includes other valuable course options—are very different from the STEM or BSTEM mathematics pathway, and students who are not properly placed initially may face an even longer time in the mathematics pathway than if they had been appropriately placed in the beginning. Currently, African Americans, Latinx, and women are under-represented in STEM fields, where high demand exists for more workers and growing opportunities for jobs with living-wage and much higher salaries. In addition, communication in writing is important, especially now that so much work is done via written communication as opposed to in-person conversation. Finally, learning takes time. People learn at different rates from each other and throughout their lives.

## FINANCIAL RESOURCES FOR SUCCESSFUL ENGLISH AND MATHEMATICS PLACEMENT PROTOCOLS

The passage of AB 705 occurred with no additional funding for colleges, as the Legislative Analyst's Office determined that AB 705 was not an unfunded mandate. Fortunately, the CCCCCO permits colleges to use a small portion of Student Equity and Achievement Program funding for implementation and ongoing support, since one of the major goals of AB 705 is to close equity and achievement gaps. Furthermore, most local governing boards and administrations have directed as much funding as they could to implement AB 705. Faculty have been provided with reassigned time or stipends to study and overhaul their placement protocols and redesign curriculum as needed to offer support coursework with smaller class sizes. New full-time faculty were hired to meet the demand for additional instruction.

## TO REMEDIATE OR NOT TO REMEDIATE

Remediation no longer exclusively means pre-transfer basic skills coursework requiring a prior semester. While many people have in the past interpreted remediation as pre-degree applicable coursework, the concept may now also include both corequisite support and accelerated or stretch coursework. Some colleges are struggling with English and mathematics prerequisites in non-sequential courses in other disciplines, and some are concluding that a student who is placed into a transfer-level course with a corequisite has met the prerequisite of a transfer-level course. Others voices disagree and state that placement into a corequisite is not the same level of preparation.

While numerous studies support the disadvantages of remediation, comparable numbers of studies demonstrate the advantages of remediation. The following paragraphs include references to research projects with both pros and cons of remediation. Readers should investigate the studies and share with colleagues while evaluating and refining local placement protocols.

Atwell, et.al.(2006) concluded,

Our analyses were able to distinguish the effects of a poor high school academic preparation from the effects of taking remedial coursework in college, and we found that most of the gap in graduation rates has little to do with taking remedial classes in college. Instead, that gap reflects preexisting skill differences carried over from high school. In two-year colleges, we found that taking remedial classes was *not* associated at all with lower chances of academic success, even for students who took three or more remedial courses. Contra Deil-Amen and Rosenbaum's (2002) thesis, in multivariate analyses two-year college students who took remedial courses were somewhat less likely to drop out in the short run, and were no less likely to graduate than were nonremedial students with similar academic backgrounds. In addition, two-year college students who successfully passed remedial courses were more likely to graduate than equivalent students who never took remediation were, suggesting that developmental courses did help those students who completed them. These apparent benefits from taking remediation should not obscure the fact that overall graduation rates in two-year colleges are quite low. Nor should we overlook our finding that taking remediation caused a modest delay in time to degree for two-year college students.

These same conclusions do not hold true with four-year institutions, where remediation does not contribute to final degree completion. The student population differences, combined with life and work responsibility, indicate that observing outcomes without consideration of the student population and educational trajectory may influence data analyses.

Co-requisite and co-support models vary, including the following:

- Accelerated Learning Program, which mainstreams remedial students, enrolling them in college-level courses with non-remedial students and a required corequisite course, with the same instructor (Accelerated Learning Program, n.d.)
- Mandatory labs or tutoring services that focus on customizing support to students.
- Mandatory or optional support co-requisites.
- Learning community models.
- Just in time remediation for specific outcomes or skills addressed in directed learning activities.
- Accelerated courses that compress remedial and transfer level into a shorter and more intensive timeframe.
- Stretch or extended courses that span more than one semester.

Ultimately, professionals must determine whether learning outcomes can be achieved at the same time or scaffolded on foundational learning and find the best strategy for providing a lasting skill set for educational pathways. In addition, consideration of college completion rates should be included. A Community College Research Center long-term study of the Tennessee corequisite strategy concluded, “We found no significant impacts of placement into corequisite remediation on enrollment persistence, transfer to a four-year college, or degree completion. This suggests that corequisite reforms, though effective in helping students pass college-level math and English, are not sufficient to improve college completion rates overall” (Ran & Lin, 2019)

## CONCLUSION

Faculty statewide should be commended for their efforts to implement AB 705 (Irwin, 2017), creating pathways, evaluating, and improving instructional methods, and designing support structures for their students. Successful implementation of AB 705, now statute in California Education Code section 78213, requires continuous quality improvement: implement, evaluate, make improvements, and do it again. It requires a holistic approach considering many variables that contribute to student success. Community colleges must recognize their student populations and their mission to successfully enable all students to reach their educational goals. In fact, due to the large number of under-represented and minoritized students and populations that are disproportionately impacted by educational systems in the United States, attending a California community college represents an effective mechanism for social justice, equity, social mobility, and economic health.

Key in students realizing their chosen educational goals is proper placement into appropriate coursework in each student’s self-determined pathway to optimize student success, increasing throughput for the institution, increasing the student’s probability of success, and decreasing the student’s probability of not completing the goal. In order to support this important mission, AB 705 was enacted with a goal of ensuring that prepared students did not face undue barriers to their educational goals and specifically were not placed into remedial education unless they were highly unlikely to succeed in transfer-level coursework. Readers should reference the actual legislation to understand the goals and evaluate implementation success per the intent of the legislature and the needs of their local student populations and communities.

The Chancellor’s Office implementation guidelines state, “Analysis performed by the MMAP team demonstrates that even students with the lowest levels of high school performance are more likely to successfully complete a transfer level course in one year if they are placed directly into transfer level, rather than being placed even one level below given the current structure of developmental education from a system level” (AB 705 Guided and Self Placement Guidance, 2019). However, the data from the Chancellor’s Office Data Mart concerning special populations indicates a need to re-

examine practices and continue collaboration with the MMAP team. Even if students are more likely to pass a transfer-level course by direct placement, colleges still need to consider more than one variable, such as GPA through 11<sup>th</sup> grade or junior year in high school, when evaluating and optimizing student success, such as the likelihood that a student will actually successfully complete the course and, if the student is unsuccessful, the chances that the student will persist, among others. Many variables must be considered for optimizing student success.

The Public Policy Institute of California considered transfer-level placement implementation data compared to pre-AB 705 data at some California community colleges. Their findings included higher percentages of placement into transfer-level English and mathematics, broadened access to transfer-level courses, and more students completing in one semester. They found course success numbers increased and students with co-requisite support had higher completion rates than in traditional courses, yet equity gaps remained. Significantly, they felt that,

Moving forward, data collection and sharing, research, and evaluation will be more important than ever. It will be crucial to identify any groups of students who are not successful under the new model; evaluate whether and how the new policies are affecting racial/ethnic achievement gaps; determine which kinds of concurrent support work best; and identify any unintended consequences of the law. Colleges should be willing to make additional changes based on this evidence. System-wide, the Chancellor's Office should play a role in supporting colleges and ensuring transparency and accountability (Mejia, Rodriquez, & Johnson, 2019).

California community colleges, through their guided pathways frameworks, are working to meet the students in their own specific individual circumstances. Leading up to and with the passage and implementation of AB 705, more students are taking transfer-level English and mathematics courses and are successful, especially those in historically disproportionately impacted groups. However, more students are accruing unsuccessful attempts in those transfer-level courses, again especially those in historically disproportionately impacted groups. Colleges must be pro-active and student-centered to address the areas that need improvement now and not wait until later. Too often, educational systems are forced to abandon an innovation or reform when a challenge is encountered. However, the California Community Colleges system has the support and momentum to celebrate and embrace the successes and address the challenges head on in order to improve the education provided to the communities in California and close the equity and achievement gaps that persist.

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## APPENDIX A

The following data represent the fall 2016 and fall 2019 student characteristics in the CCC's. The purpose is to describe the diversity in this open admission system. (Source CCCC0: Datamart)

Characteristic	Fall 2016	Fall 2019
Part-time (less than 12 units)	68.3%	67.8%
Part-time (less than 15 units)	91.1%	89.8%
<b>Ethnicity</b>		
African-American	5.87 %	5.37 %
American Indian/Alaskan Native	0.43 %	0.35 %
Asian	10.83 %	10.83 %
Filipino	2.88 %	2.65 %
Hispanic	45.01 %	47.30 %
Multi-Ethnicity	3.76 %	3.76 %
Pacific Islander	0.41 %	0.40 %
Unknown	4.35 %	5.93 %
White Non-Hispanic	26.47 %	23.41 %
<b>Special Populations</b>		
CalWORKs	1.3%	0.9%
DSPS (Disabled Students Program & Services)	5.8%	6%
EOPS	4.8%	5%
Foster Youth	1.2%	1.2%
First Generation	28.2%	31.8%
Incarcerated	.48%	.81%
Veteran	2.1%	2%
<b>Enrollment status</b>		
First-Time Student	17.27 %	15.91 %
First-Time Transfer Student	7.75 %	7.00 %
Returning Student	10.98 %	10.92 %
Continuing Student	57.20 %	55.74 %
Uncollected/Unreported	2.87 %	3.82 %
Special Admit Student	3.93 %	6.61 %
<b>Previous Education</b>		
Received College Degree	9.4% (62.7% Bachelor's degree; 37.3% AA)	10.6% (64% Bachelor's degree; 36% AA)
High School Graduate w/o college degree	81.2%	76.7%
Foreign Secondary School Degree	4.2%	3.9%
Passed GED	4.3%	3.3%
Received CA HS proficiency	1.6%	1.1%
Not a HS graduate	2%	1.78%
Special Admit – currently in HS	4.2%	7.2%

Ages		
19 years old or Less	26.67 %	30.55 %
20 to 24	32.70 %	29.34 %
25 to 29	13.56 %	12.80 %
30 to 34	7.37 %	7.43 %
35 to 39	4.94 %	5.07 %
40 to 49	6.49 %	6.37 %
50 +	8.25 %	8.43 %
Day/Evening enrollment		
Day	74.47 %	73.45 %
Evening	17.26 %	14.92 %
Unknown	8.28 %	11.63 %

## APPENDIX B

### Special Populations (Mandatory elements) Data Element Dictionary

<https://webdata.cccco.edu/ded/sg/sg.htm> -

#### Elements mandatory Summer 2012

SG01 - This element indicates that the student's military service status. (1), veteran (2), active reserve (3) or national guard (4).

SG02 - This element indicates the military service status of the student's parent/guardian if the student is a dependent child/spouse.

SG03 - This element indicates whether the student is now, or has ever been, in a court-ordered out-of-home placement

SG04 - This element indicates an Incarcerated Student

SG05 - This element indicates whether the student met the educational and financial eligibility criteria and received services from the Mathematics, Engineering, and Science Achievement (MESA) program. If a student has a demonstrated Achievement in a Science, Engineering, or Mathematics (ASEM) major and the intent to transfer to a four-year college or university but does not fully meet all of the MESA eligibility criteria, they are to be reported as an ASEM student if they are associated with the campus MESA Center. The student may also be referred to as a "MESA Club member", a "friend of MESA", or "Mesa Associate", etc.

SG06 - This element indicates whether the student met the eligibility criteria and received services from the Puente program.

SG07 - This element indicates whether the student met the eligibility criteria and is enrolled in either the Middle College High School (MCHS) program or the Early College High School (ECHS) program.

SG08 - This element indicates whether the student met the eligibility criteria and received services from the Umoja program.

SG09 - Parent Education level (first Generation status) - deleted and moved to SB 33 8/24/2017  
ELEMENTS mandatory Summer Term 2012 updated Summer 2018

SG10 - This element indicates whether the student is a participant in a Career Advancement Academy (CAA) or another Integrated Education and Training (IET) program that meets federal standards.

ELEMENTS mandatory Summer Term 2016

SG11 - This element indicates whether the student is a participant in a Board of Governors approved NextUp/ Cooperating Agencies Foster Youth Educational Support (CAFYES) program at the college during the reporting term.

ELEMENTS mandatory Summer Term 2017

SG12 - Student Baccalaureate Program

SG13 - This element indicates whether the student is a participant in a College and Career Access Pathways (CCAP) agreement during the reporting term.

#### ELEMENTS mandatory Summer Term 2018

SG14 - The first position of the element is used to report the code identifying the student's economically disadvantaged status. The second position identifies the type of source used to determine the status code. (CalWORKs/TANF/AFDC, SSI, general assistance, food and nutrition act, total family income that does not exceed the higher of the poverty line or 70% of the lower living standard income level, with a disability whose own income is below the poverty line but who is a member of a family whose income does not meet this requirement, Student is identified as a homeless individual or homeless child or youth or runaway youth or other economically disadvantaged.

SG15 - This element indicates whether the student is identified as having been subject to any stage of the criminal justice process.

SG16 - This element indicates whether the student is identified as homeless as defined in the Workforce Innovation and Opportunity Act.

SG17 - This element indicates whether the student is identified as being unemployed for 27 consecutive weeks or longer.

SG18 - This element indicates whether the student is self-identified as possessing attitudes, beliefs, customs, or practices that influence a way of thinking, acting, or working that may serve as a hindrance to employment.

SG19 - This element indicates whether the student was a seasonal farm worker.

SG20 - This element indicates whether the student is identified as having a low level of literacy.

SG21 - This element indicates whether the student participated in specific types of work-based learning during the reporting term.

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