



Optimizing Student Success  
A Report on Placement in English and Mathematics Pathways  
September 2020 – Draft

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 Colleges.

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## **Introduction**

Guided Pathways increases attention to the individual student journeys through our colleges, intentionally addressing innovations to optimize student success in completing the students' educational goals. This report is primarily about placement and success in English (including reading) and mathematics<sup>1</sup> (including all quantitative reasoning) pathways as it directly relates to AB 705 (Irwin, 2017, codified in California Education Code section 78213) implementation and evaluation of that implementation. While ESL is very important to our student population's success, data regarding implementation of AB 705 in English as a Second Language 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.<sup>2</sup> AB 705 implementation was mandatory beginning fall 2019, but many colleges were in various stages of using multiple measures to place CCC students since 2017. Due to the COVID-19 pandemic all English and mathematics courses transitioned to online instruction during spring 2020. This 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 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

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<sup>1</sup> In this report mathematics is used to include all Quantitative Reasoning in every reference. In California not all quantitative reasoning courses are coded under the mathematics TOP code, but may represent significant numbers of students, such as Behavioral Science Statistics or Biostats and there are numerous others. Without appropriate coding these cannot be counted in statewide data but require individual college analysis.

<sup>2</sup> Memo

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.”<sup>3</sup> In order to meet this vision, the CCCC addressed 6 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. Colleges, using a variety of placement methods, including the current Chancellor’s Office default placement rules<sup>4</sup>, have reported an increase in the number of students placed into and enrolling in transfer-level English and mathematics. There has been an increase in the overall number of students succeeding in transfer-level English and mathematics. Early evidence indicates two areas of concern. First that far fewer students are enrolled in any credit math or English statewide and second that the numbers of students not successful have increased, particularly in historically disproportionately impacted student populations, such as some ethnic groups, foster youth, EOPS and CalWORKs<sup>5</sup>. Equity or achievement gaps are showing an increasing trend for most ethnic groups compared to the White Non-Hispanic and Asian ethnic groups. Data from transfer-level English shows increased throughput<sup>6</sup> and yet also suggests opportunities to improve success strategies to optimize success for all students. Data on transfer-level mathematics shows greater 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.

Early CCC outcomes are clear. Individual colleges report that many more students have been placed in transfer-level English and mathematics courses and that more students enrolled in those transfer-level courses. Data also indicate that overall enrollment in “any” credit English or mathematics course has declined and that while more students have completed transfer, more students have also been unsuccessful<sup>7</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 examine variables to continue to optimize student success and the student experience.

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<sup>3</sup> Vision for Success

[https://foundationccc.org/Portals/0/Documents/Vision/VisionForSuccess\\_Exec\\_Summary\\_web\\_2019.pdf](https://foundationccc.org/Portals/0/Documents/Vision/VisionForSuccess_Exec_Summary_web_2019.pdf)

<sup>4</sup> CCCC Assessment website <https://assessment.cccc.edu/assessment>

<sup>5</sup> Numbers of Special Populations and other student demographics are in Appendix A. Definitions for Special populations are found in Appendix B.

<sup>6</sup> Throughput is cited in Title 5 §55522 and discussed on the CCCC AB 705 Implementation Memo AA 18-40 July 11, 2018:

<https://static1.squarespace.com/static/5a565796692ebefb3ec5526e/t/5b6ccfc46d2a73e48620d759/1533857732/982/07.18+AB+705+Implementation+Memorandum.pdf.pdf>

<sup>7</sup> See chart of overall credit enrollment on page 12 (number charts)

With an eye on 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:

- 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, nor 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 CCCCO default placement rules, applied by many colleges, uses only junior year high school GPA and places 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?
- How should decreasing success rates whether basic skills<sup>8</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 e.g. Puente, EOPS, Umoja, DSPS to better optimize success and reduce equity and achievement gaps?
- What has occurred to Statistics and Liberals Arts Mathematics (SLAM) and STEM mathematics enrollment and success and are there any implications for specific student populations?
- Are there opportunities to innovate and serve students, particularly those traditionally underserved, with tailored guidance and support to optimize success from an individual student perspective?

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<sup>8</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.**” <https://assessment.cccco.edu/esl-subcommittee>

- How are fulltime and part-time students served with newly designed pathways and placement protocols?

### Legislation, Regulations, Guidelines, and Ideas

AB 705 (Irwin, 2017) was enacted with an educational legislative intent 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 undo barriers. Readers should reference the actual legislation to understand the goal and thereby evaluate implementation success per the intent of the legislature. Title 5 Regulations for AB 705 implementation were written to ensure that students were not placed into remedial courses that might delay or deter their educational progress unless evidence suggests they are highly unlikely to succeed in the college-level course. It should be noted that the California Community Colleges (CCC) had been working on basic skills or remedial education reform including a more comprehensive use of multiple measures placement for more than a decade. More publications within the last two years (noted in the references) from the Public Policy Institute of California (PPIC), the Campaign for College Opportunity, Community College Research Center (CCRC), 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 the articles above and incorporated into the legislation suggests that when used as the primary criterion for placement, assessment tests tend to under-place students; and a student's high school performance is a stronger predictor of success in transfer-level courses rather than standardized placement tests, alone. Two research items, cited below, indicate that the more variables considered in the placement process, the more likely a student is to be successful in their placement.

- “Multiple measures placement systems that use alternative measures alongside the traditional tests will potentially provide more accurate results and better student outcomes.” (Belfield, 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).”

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>9</sup>

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<sup>9</sup> It was also included in AB 705 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

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 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, it would be difficult to find many proponents to argue that prior to 2019, the placement system was working well. Many faculty would agree that many students were taking basic skills coursework unnecessarily and that the long sequence of coursework did little to expeditiously advance students towards their educational goals. But it would be just as difficult for faculty to argue that no students would benefit from gaining knowledge and skills found in basic skills coursework. Rather, colleges should find a solution that balances the interests and needs of all students.

In implementing AB 705, it is important to remember that the legislation was designed to address the historically problematic issue of placement. It does not specify what courses should be developed and offered nor does it prevent 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 CTE certificates include basic skills coursework as requirements for completion. Also, working adults who have been out of school for 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 the law still exists throughout the CCCs, the ASCCC has made it clear that once the bill was written into statute, successful implementation was the goal and that 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”, not addressed in AB 705 but introduced in Title 5 §55522, yet not defined. From the CCCCO Memo AA 19-17<sup>10</sup>, April 15, 2019 is the following:

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:

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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.”

<sup>10</sup> CCCCO Memo AA 19-17:

<https://static1.squarespace.com/static/5a565796692ebefb3ec5526e/t/5cbf8c2f53450a1e7cb6b605/1556057136228/AA+19-17+AB+705+Adoption+Plan+Submission+Form+Instruction+Memo.pdf>

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.

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 can be successful. The California Community Colleges Chancellor's Office (CCCCO) provided statewide default placement rules for colleges that were unable (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 would be evaluated and updated as data is collected on current placement. Page 3 of the July 2018 AB 705 Implementation memo<sup>11</sup> 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."

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 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 down their educational pathway. Examining current data will enable colleges to modify placement as part of the continuous quality improvement efforts and identify student goals to better serve each student's ability to complete a program of study and optimize their 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) course work with a one-year timeframe". The ASCCC recognizes that individualized education goals, variations in resources, tools, available time, income, and many other factors make it incumbent to rely on individual plans aligned with the student's education 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 completed their own data for the fall 2019 term have varying outcomes in regard to course success. A limitation of this report is that gathering statewide data for the

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<sup>11</sup> Assembly Bill (AB) 705 Implementation memo AA 18-40:  
<https://static1.squarespace.com/static/5a565796692ebefb3ec5526e/t/5b6ccfc46d2a73e48620d759/1533857732982/07.18+AB+705+Implementation+Memorandum.pdf.pdf>

overall success has been complicated due to coding.<sup>12</sup> The CCCC0 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 from the need to analyze and improve practices.

Colleges were to provide reports on their first year of AB 705 implementation in regard to student placement and throughput. With spring 2020 turned upside down as a result of the COVID-19 epidemic and shift to remote learning, data may not be indicative of the success or lack thereof of a college's placement protocols. However, after colleges collect and analyze the data, be careful not rush to sweeping conclusions. Due to COVID-19, the fall 2020 term will be very different in format from the fall 2019 term, and some are predicting that this will continue into spring 2021. Many are predicting that education may be entering a new normal, at least for a year and maybe more. The CCCC0, 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 CCCC0 encourages colleges to contact them with questions or concerns, and the CCCC0 is here to 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 CCCC0 for statewide data discussion and collaboration. Statewide data, pulled from Data Mart<sup>13</sup> was examined using the number of students enrolled, success counts and rates in English and mathematics courses for the fall 2019, fall 2018, fall 2017, and fall 2016 terms (disaggregated by ethnicity and special populations). Only fall data were used since data from spring 2020 was unavailable at the time of writing of this report and due to the disruptions caused by the COVID-19 pandemic. Again, it should be noted that when it becomes available careful considerations should be made when comparing to other spring terms due to the COVID-19 pandemic and eventual college closures and shift to online education. Although courses were examined for course basic (CB) coding (using COCI 2.0) to specify transfer-level English and

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<sup>12</sup> Statewide data is based on TOP code (taxonomy of program) which include all courses within a program of study, not just transfer-level freshman English or mathematics, these 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, etc. Additionally, not all colleges include statistics under this TOP code. Closely examining the success of placement will require a focus on those typically freshman-level courses. The CCCC0, WestEd and ASCCC collaborated to create previously nonexistent course basic (CB) 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 examined student success.

<sup>13</sup> California Community Colleges Management Information Systems Data Mart:  
<https://datamart.cccco.edu/DataMart.aspx>

mathematics courses (CB 25), there was no way to connect success based on these codes as they were not accessible in Data Mart and CCCC representative have been unable to provide access to such data. For this paper, statewide success rates are based upon the broad taxonomy of programs (TOP) codes which include some coursework not relevant and may exclude other coursework that is relevant. Without better coding by colleges<sup>14</sup> and data accessibility through the CCCC, specific analysis is only available at local levels: districts or colleges. Success was defined as the number of students receiving an A, B, C or Pass (P). In addition, analysis included data from a pre-AB705 Research and Planning (RP) Group Multiple Measures Assessment Project (MMAP) report which identified both access and success in percentages and numbers including disaggregation by ethnicity. Even with these limitations, there is adequate data to consider areas of opportunity to optimize placement by examining potential unintended consequences particularly in relation to other research nationwide and included in the reference section.

### **The Challenge**

The Academic Senate for California Community Colleges (ASCCC) has consistently recommended that implementation of AB 705 be based upon the needs of each college's student population, student's educational goals and student needs such as constraints on time, finance, educational background, family/work obligations, and the like. For colleges that were not able, or chose not to, customize placement to their student populations, the default placement rules (or chancellor's office placement method) 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 creation of the Title 5 Regulations to design, evaluate, and adjust placement within a two-year time span that would best serve their students while meeting the requirements of the law.

Currently, it is unclear the number of colleges opting to rely primarily upon default placement rules. But the data is clear that AB 705 implementation greatly decreased 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, 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 (SCFF) that provided incentives to the colleges for students passing both transfer-level English and mathematics within the student's first year<sup>15</sup>. Some colleges substantially reduced or

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<sup>14</sup> Particularly 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 CCCC but has not been implemented.

<sup>15</sup> 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

eliminated remedial course sections overall which has been a measure of implementation success by PPIC (Public Policy Institute of California)<sup>16</sup>, Campaign for College Opportunity and CAP (California Acceleration Project) articles<sup>17</sup>, although neither the ASCCC nor the CCCCCO recommended any percentage reduction. Colleges should evaluate their own implementation based upon student population needs and California Ed code section 66010.4 (a)(2)(A)<sup>18</sup> – which requires remedial instruction be provided for students that need it.

A large challenge for both local and statewide data will be the fact that coding that specifically references the courses has not been implemented broadly. Reliance on program coding for a legislation 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.

English composition course placement, designed primarily to help students achieve college-level writing, research and analytical skills, is complicated by inherent complication of reading and writing skills that provide building blocks for the 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 which 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 “get through”, especially when support is provided. For students that desire or need more preparation, there should be reasonable pathways and supports available, that meet their needs, thus meeting students where they are. In a nutshell, the best placement optimizes student success.

In an effort to provide “the opportunity for educational success, for all qualified Californians” as stated in CA Ed Code section 66010.2<sup>19</sup> this paper selectively uses the term “optimize” to reflect

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84750.4(f)(1)(C) <https://www.cccco.edu/-/media/CCCCO-Website/Files/Finance-and-Facilities/Student-Centered-Funding-Formula/A4-scff-201920-metric-definitions-v21222019ADA.pdf>

<sup>16</sup> What Happens When Colleges Broaden Access to Transfer-Level Courses? Evidence from California’s Community Colleges Mejia, M.C., Rodriguez, O., Johnson, H (Oct 2019) <https://www.ppic.org/publication/what-happens-when-colleges-broaden-access-to-transfer-level-courses-evidence-from-californias-community-colleges/>

<sup>17</sup> 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>

<sup>18</sup> California Ed code section 66010.4 (a)(2)(A) [https://leginfo.legislature.ca.gov/faces/codes\\_displaySection.xhtml?lawCode=EDC&sectionNum=66010.4](https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=EDC&sectionNum=66010.4)

<sup>19</sup>Ca Ed Code Section 66010.1-66010.7 [https://leginfo.legislature.ca.gov/faces/codes\\_displayText.xhtml?lawCode=EDC&division=5.&title=3.&part=40.&chapter=2.&article=2.](https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=EDC&division=5.&title=3.&part=40.&chapter=2.&article=2.)

a student-centered consideration of throughput, access, and success. A simplified example of this can be seen in a business model where the main goal is to optimize (maximize, in this case) profit while constraints on the variables significantly impact outcomes. Profit = Revenue – Cost. To optimize or maximize profit, it seems that one would simply maximize revenue and minimize cost, and that is true, but they 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 such. Thus, equilibrium points need to be determined. Setting up an optimization problem with human subjects (students) is much more complicated. Optimizing (maximizing, in this case) student success includes maximizing pass rates and numbers, minimizing unsuccessful attempt rates and numbers, maximizing retention, minimizing (and hopefully eliminating) equity and achievement gaps, maximizing the probability that a student enters and completes transfer-level (or college-level) within a one-year timeframe i.e. maximizing throughput. As one will notice, this becomes complicated quickly; something that appears simple, such as maximizing throughput is quite complicated when optimizing student success.

The current CCCCO default placement rules<sup>20</sup> are based on a single variable: High school GPA through the 11<sup>th</sup> grade. Some argue that GPA alone is a multiple measure, consisting of multiple grades, and is the best predictor of student success when using a single variable. Others have noted that GPA is much like a Likert Scale and alone, does not indicate where a student has excelled or may benefit from support or additional preparation.

While AB 705 does not prohibit assessment instruments for placement<sup>21</sup> it prohibits colleges from using such assessment instruments that have not been approved by the Board of Governors. Currently, the Board of Governors has not approved any assessment instruments for placement. Furthermore, Title 5 section 55522<sup>22</sup> states that “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.”

At this time, no skills assessment for English nor mathematics has been approved or permitted for course placement. However, since some guidance may be beneficial in helping students and determining their placement, AB 705 Guided and Self Placement Guidance and Adoption Plans

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<sup>20</sup> CCCCO AB 705 Implementation Memo AA 18-40, July 11, 2018:

<https://static1.squarespace.com/static/5a565796692ebefb3ec5526e/t/5b6ccfc46d2a73e48620d759/1533857732982/07.18+AB+705+Implementation+Memorandum.pdf.pdf>

<sup>21</sup> AB 705, Irwin. Seymour-Campbell Student Success Act of 2012

[https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201720180AB705](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB705)

<sup>22</sup>California Code of Regulations § 55522. English and Mathematics Placement and Assessment

[https://govt.westlaw.com/calregs/Document/I3BBA08FE209543A9A8181F0BF33CD714?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=\(sc.Default\) \)](https://govt.westlaw.com/calregs/Document/I3BBA08FE209543A9A8181F0BF33CD714?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default) ))

Instructions AA 19-19<sup>23</sup> provided provisional approval by the Chancellor for the following 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.”

The purpose of a placement process is to place students in 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 a single term to several years of work on to their educational timeline that is not necessary, provide too many opportunities for the student to exit their educational path, or make the student feel as though they have been deemed not college-ready. Placing a student too high can leave gaps in a student’s trajectory, add a single term or more on to their educational timeline by having to repeat courses or back up and begin earlier in the sequence, or simply cause the student to be discouraged and feel as though they are not college material and leave 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 their educational pathway. Assessing a student’s preparation to assess where the student is, based upon course work, experiential skills, employment skills, College Level Examination Program (CLEP), Combined English Language Skills Assessment (CELSA), Advanced Placement (AP) exams, and others create the optimal situation for aligning appropriate placement and the likelihood of success. Additional measures to be considered beyond student 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 where they are, sets the student squarely in the middle of the decision-making based upon all available data combined with student self-assessment.

As defined by the CCCCO (<https://assessment.cccco.edu/assessment>), “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

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<sup>23</sup> CCCCO Guided Self Placement Memo A19-19 April 15, 2019  
<https://static1.squarespace.com/static/5a565796692ebefb3ec5526e/t/5cbf8cccf9619a79feeaa657/1556057292927/ES+19-19++Memo+AB705+GSP+Guidance+and+Adoption+Plan+Instructions.pdf>

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."

The guidelines and default placement rule memo, acknowledged that colleges should be given the ability to place their students based on their local student needs. 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 placement rules or chancellor's office placement method and update them as needed to meet broad needs of students statewide. In creating the default placement rules, it was acknowledged that colleges should be given the ability to place their students based on their local student needs. The default placement rules were a starting point and provided for colleges use if they chose not to determine their own placement method or if they were unable to conduct the research necessary to validate custom placement models. It should be noted that Title 5 section 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 to truly optimize student success.

### **Placement for General Education Requirements vs Placement Required for Majors**

When considering student success there is a difference between English and mathematics placement based upon what requirement is being met. General education requirements in English and mathematics seek to expose students to wide and broad topics in English and mathematics that provide students with a well-rounded educational base. This contrasts with a pathway that includes English or 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 major and may branch into areas uncommonly 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 English and mathematics to meet an institutional metric and complete a single course requirement, may steer students into courses not in their educational pathway. Completing an institutional *throughput* check box can add time and coursework within a student's pathway. The pressure to have student's complete English and mathematics within the first academic year (fall to spring), before they have settled on a major, may lead to benefitting the institution more so than the student.

CCCs have been actively collaborating to address these issues through other statewide initiatives such as C-ID (Course Identification Numbering System), ADT's (Associate Degrees for Transfer) 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 and primarily identify lower-division transferable courses commonly articulated between the California Community Colleges (CCC) and universities such as University of California (UC), California State University (CSU), and California's independent colleges and

universities). ADT's are "degrees with a guarantee"<sup>24</sup>, providing a streamlined pathway to transfer to a participating four-year institution, placing students on the most direct path to a baccalaureate degree. UC Transfer Pathways provide clear and specific curricular guidance on 20 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.

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

As noted earlier in this report, the data that was available is not the best data, as some courses included are not the first transfer-level course a student would take and then some courses that would be a first transfer-level course are not included. Examples:

- A psychology statistics course that meets the mathematics/quantitative reasoning general education requirement, but is not coded with a TOP Code of 1701.00
- An English course that meets a requirement for majors, but is not a general education course
- An ESL equivalent to transfer-level English

College researchers have access to the data for their colleges. Hopefully broad access through the CCCCO Data Mart will be available soon, as new course codes to access the pertinent data were designed and implemented in spring 2019<sup>25</sup>.

**Change in Overall Enrollment**

One area that should be examined includes the overall reduction in student enrolled in any credit English or mathematics courses, which includes courses that are both basic skills and transfer-level. While the overall enrollment in CCC's fell 1.7% from fall 2016 to fall 2019, credit Mathematics course enrollment dropped 17.66% and credit English 9.74%, during that same time period. In addition, with added transfer sections and additional co-requisites or synchronous support it would appear that an even trade in either sections or enrollment did not occur. Is this the result of inadequate sections or students opting out? Are we continuing to serve students looking for course preparation prior to transfer level courses? Have students 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 2019*

Fall Terms	Credit Enrollment Mathematics – (1701.00)	Credit Enrollment English - (1501.00)	Overall CCC Credit Course Enrollment	Student Count
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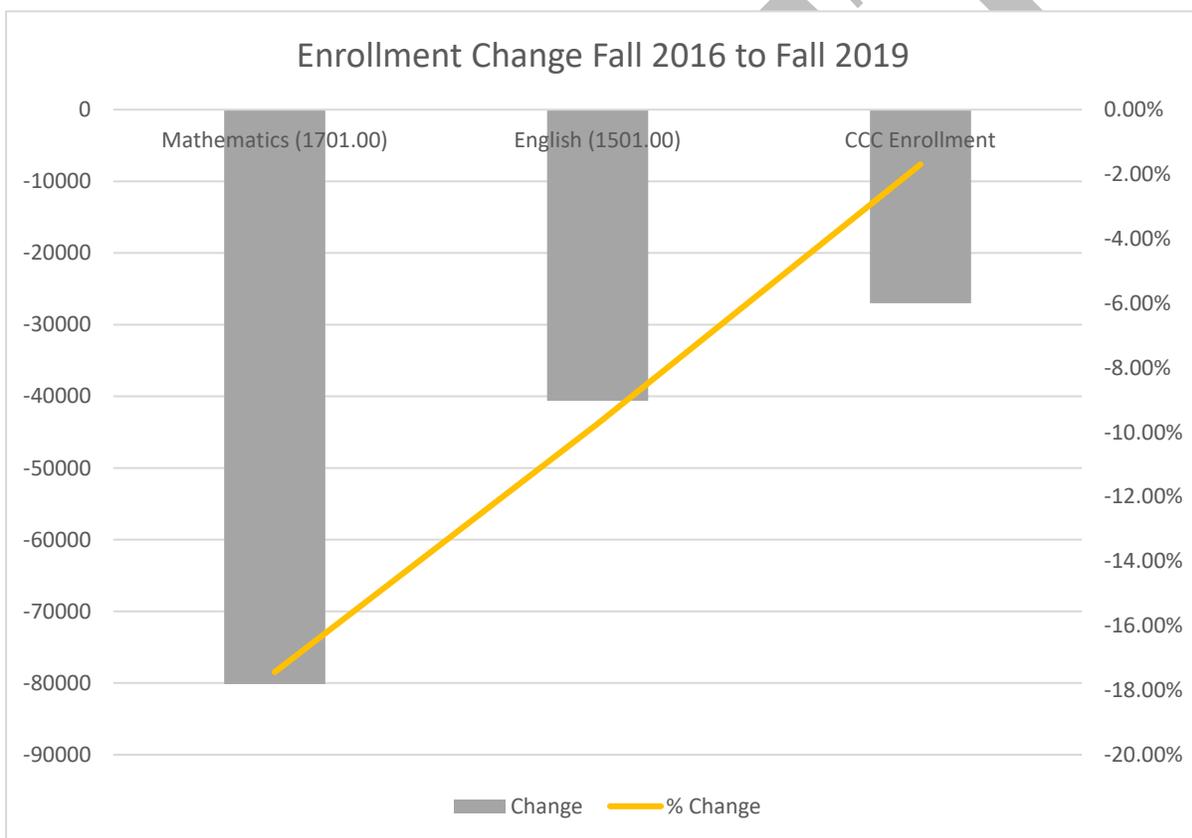
<sup>24</sup> A Degree with a Guarantee: <https://adegreewithaguarantee.com/en-us/>

<sup>25</sup> Data Element Dictionary: CB25 and CB26: <https://webdata.cccco.edu/ded/cb/cb.htm>

<b>Fall 2016</b>	459,606	416,982	3,955,418	1,591,276
<b>Fall 2019</b>	379,452	377,069	3,934,659	1,568,640
<b>Change</b>	-80,154	39,913	20,759	27,003
<b>% Change</b>	-17.4%	-9.57%	.52%	-1.70%

There are many potential questions that should be asked regarding this decline in enrollment in two key higher education fundamental skills. Are colleges meeting the local population needs and the CCC mission to meet students where they are, being student-ready? How will these trends effect 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 2016-2019, disaggregated by ethnic group (defined by the CCCCO) are shown in the chart below. Although indicated in decimal points these represent percentages, success rates, and show a declining success rate for all ethnicities which 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 rate between White Non-Hispanic groups and other groups is often referenced as the equity gap. Even if more students from other ethnic groups are getting through, with declining 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 5-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 Asian and the largest gap occurs in fall 2019. The point gap for African Americans have grown from  $14 \frac{3}{4}$  points in fall 2016 to  $18 \frac{1}{2}$  points in 2019 (Figure 3).

*Figure 2 Comparison of Statewide Success Change (percentage points) in Transfer-Level English Courses from fall 2016 to fall 2019 Disaggregated by Ethnicity*

DRAFT

### Transfer-level English (TOP Code 1501.00) Fall Terms 2016-2019



*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.*

### Equity Gap - Transfer-level English (TOP Code 1501.00) fall terms 2016 to 2019

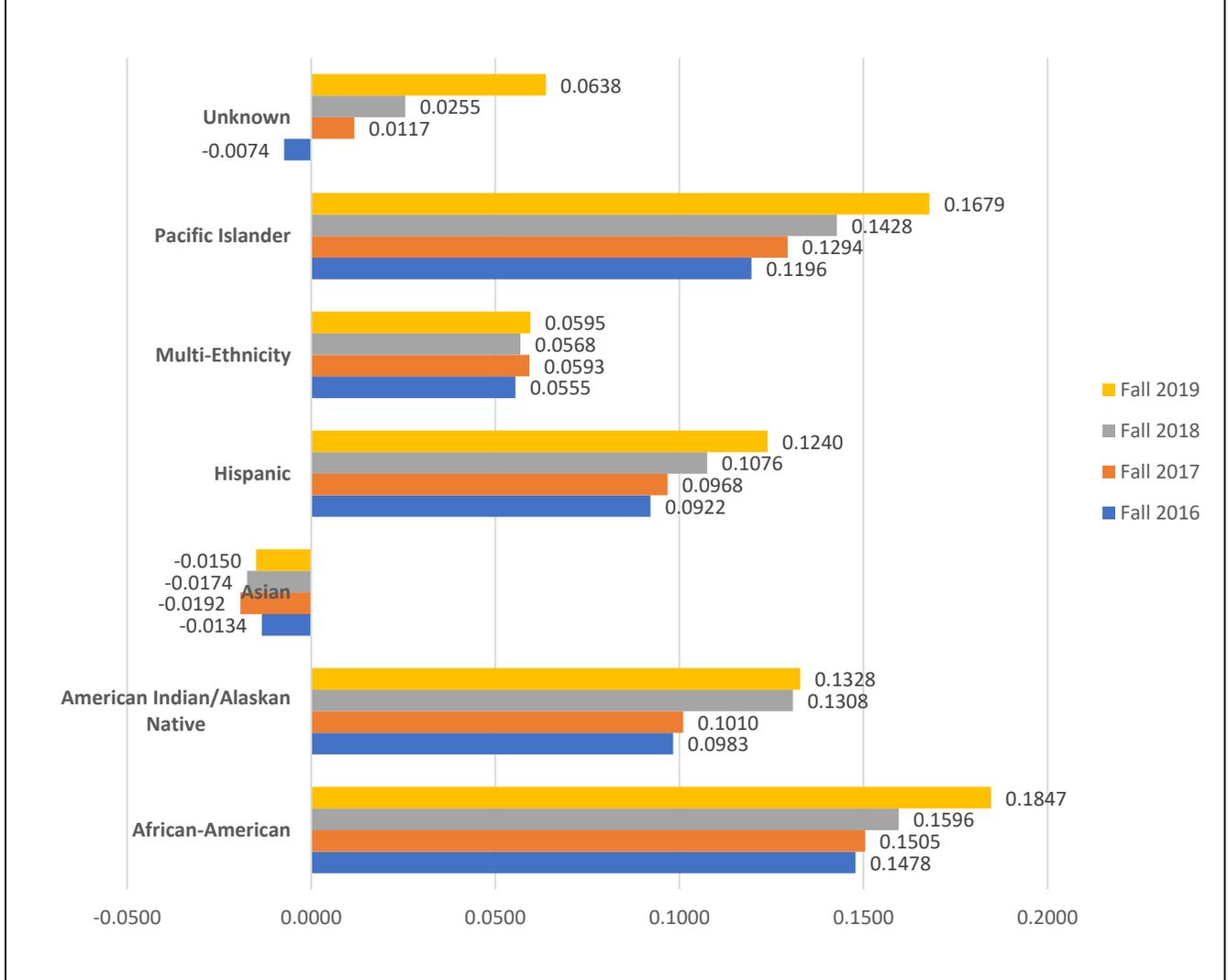


Figure 4 below describes the factors behind the declining success rates. This figure indicates the percent changes in enrollment count, success count, and unsuccessful attempt count by ethnicity between fall 2016 and fall 2019. In the African-American ethnic group, enrollment increased by 16%, the numbers of success 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. These data should lead us to celebrate the increased enrollment and throughput numbers while challenging us 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

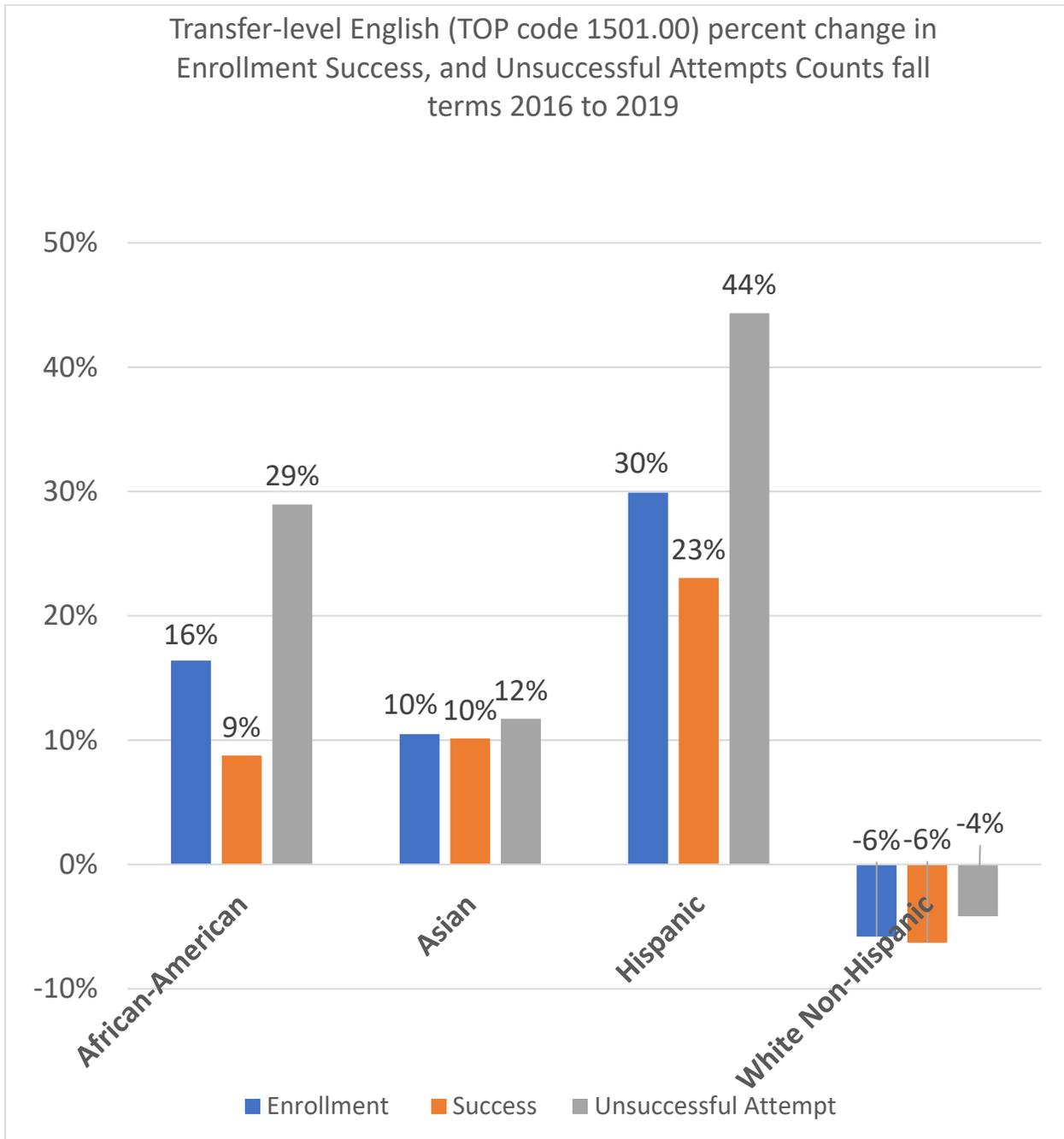


Figure 5 African Americans Numbers of enrollments, successes, and unsuccessful attempts for Fall 2016 and Fall 2019 for Transfer-level English.

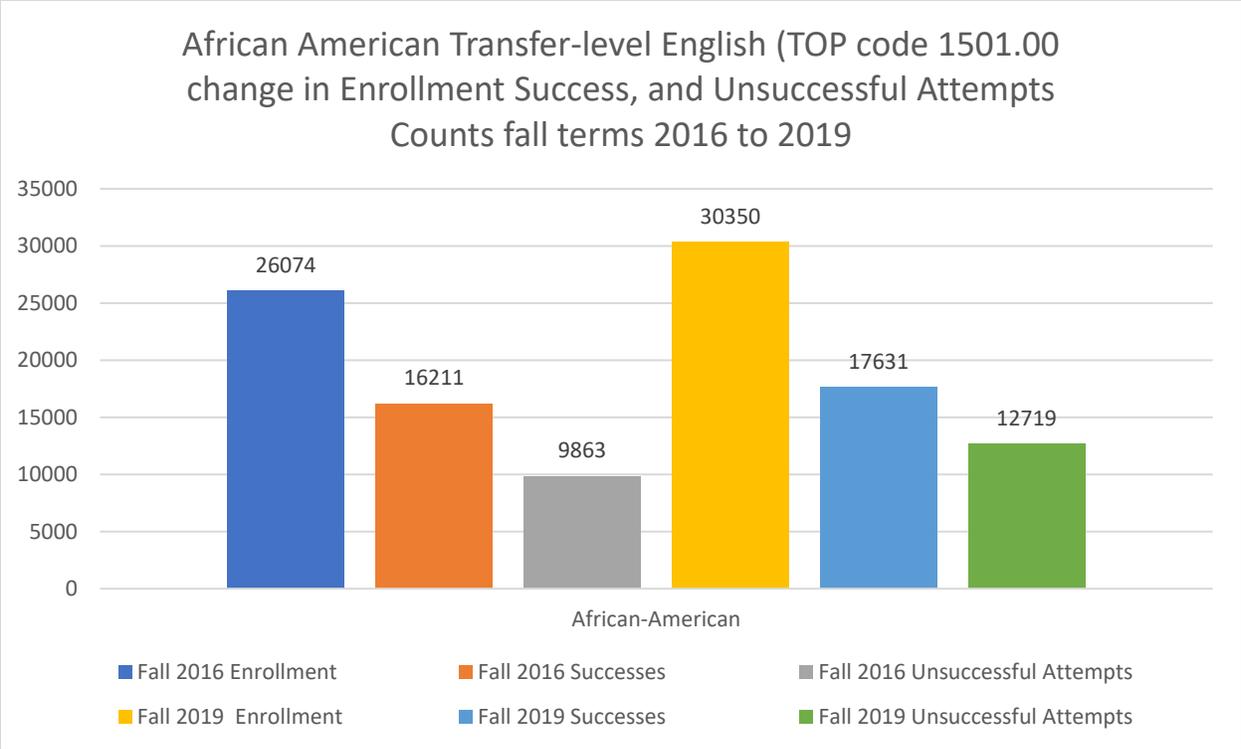


Figure 6 Hispanic Numbers of enrollments, successes, and unsuccessful attempts for Fall 2016 and Fall 2019 for Transfer-level English.

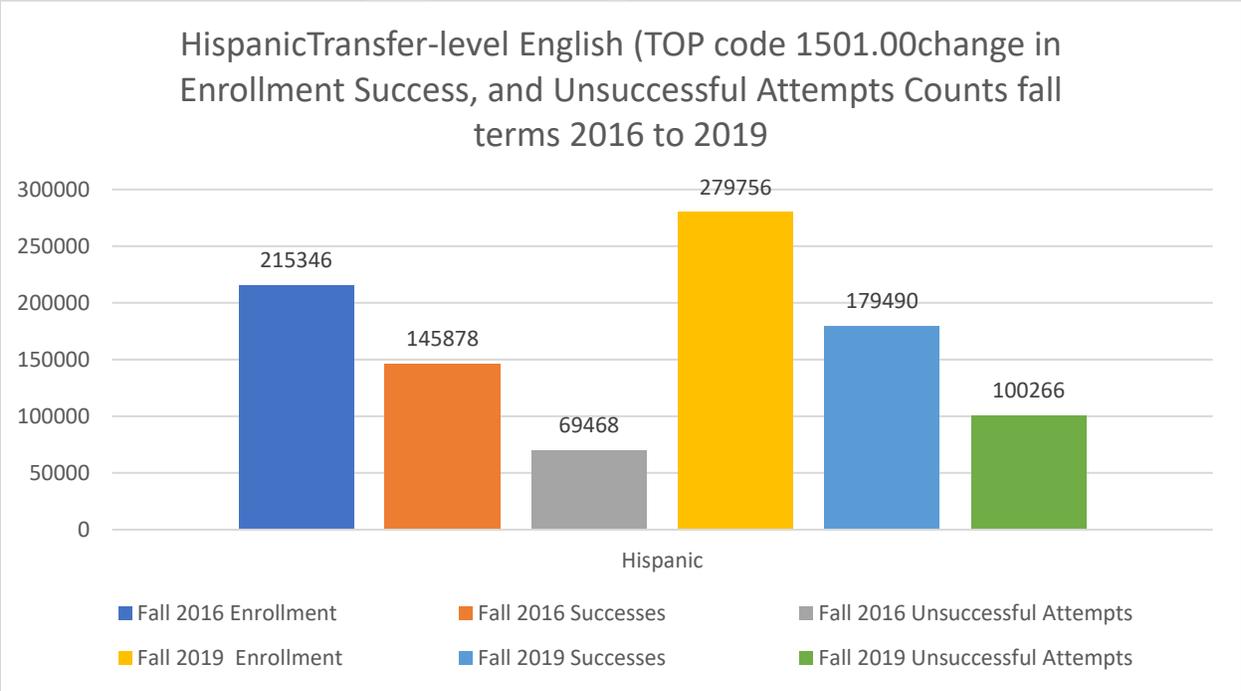
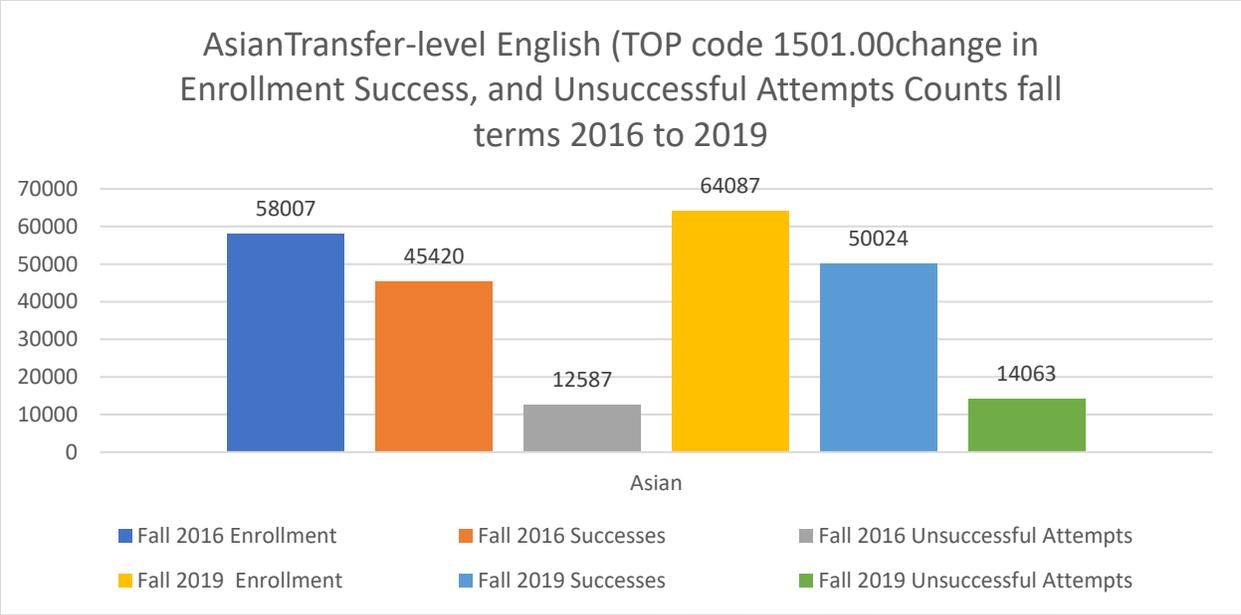
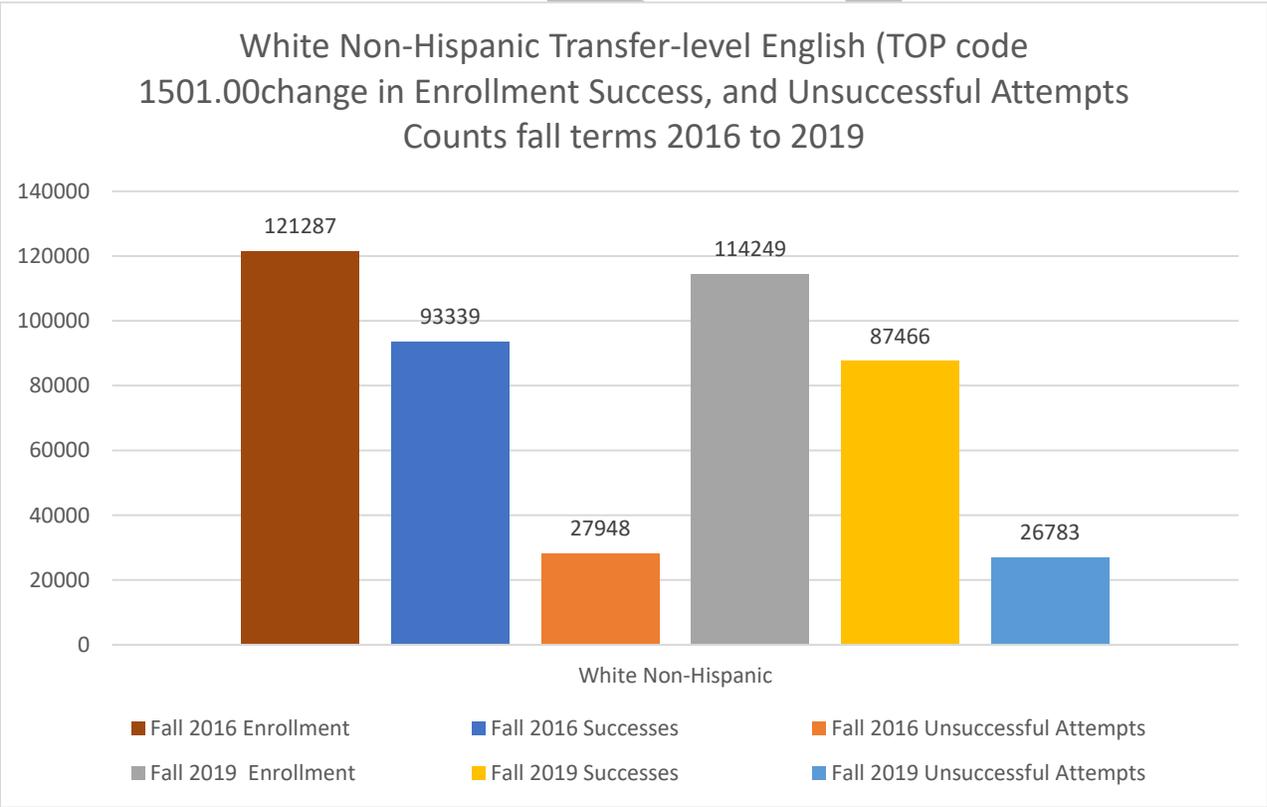


Figure 7 Asian Numbers of enrollments, successes, and unsuccessful attempts for Fall 2016 and Fall 2019 for Transfer-level English.



*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 2016-2019, disaggregated by ethnic group (defined by the CCCCCO) are shown in the chart below. Although indicated in decimal points these represent percentages, success rates, and 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 rate between White Non-Hispanic groups and other groups is often referenced as the equity gap. Even if more students from other ethnic groups are getting through, with declining 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*

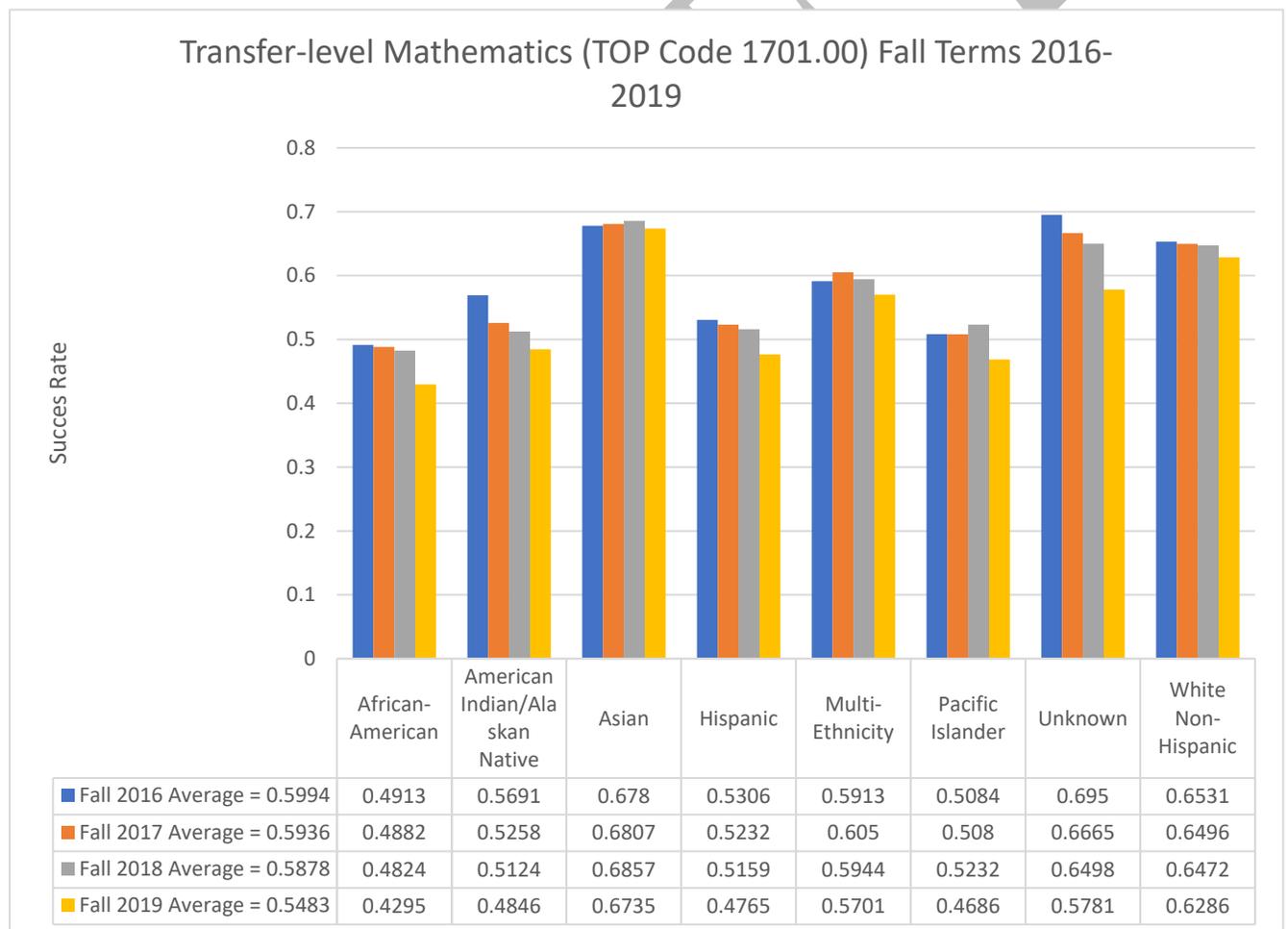


Figure 10 Trends in Statewide Success Rate Gap (as defined by the difference in success rates between the White Non-Hispanic ethnic group and each of the other ethnic groups) in Transfer-Level English Courses from fall 2016 to fall 2019, Disaggregated by Ethnicity.

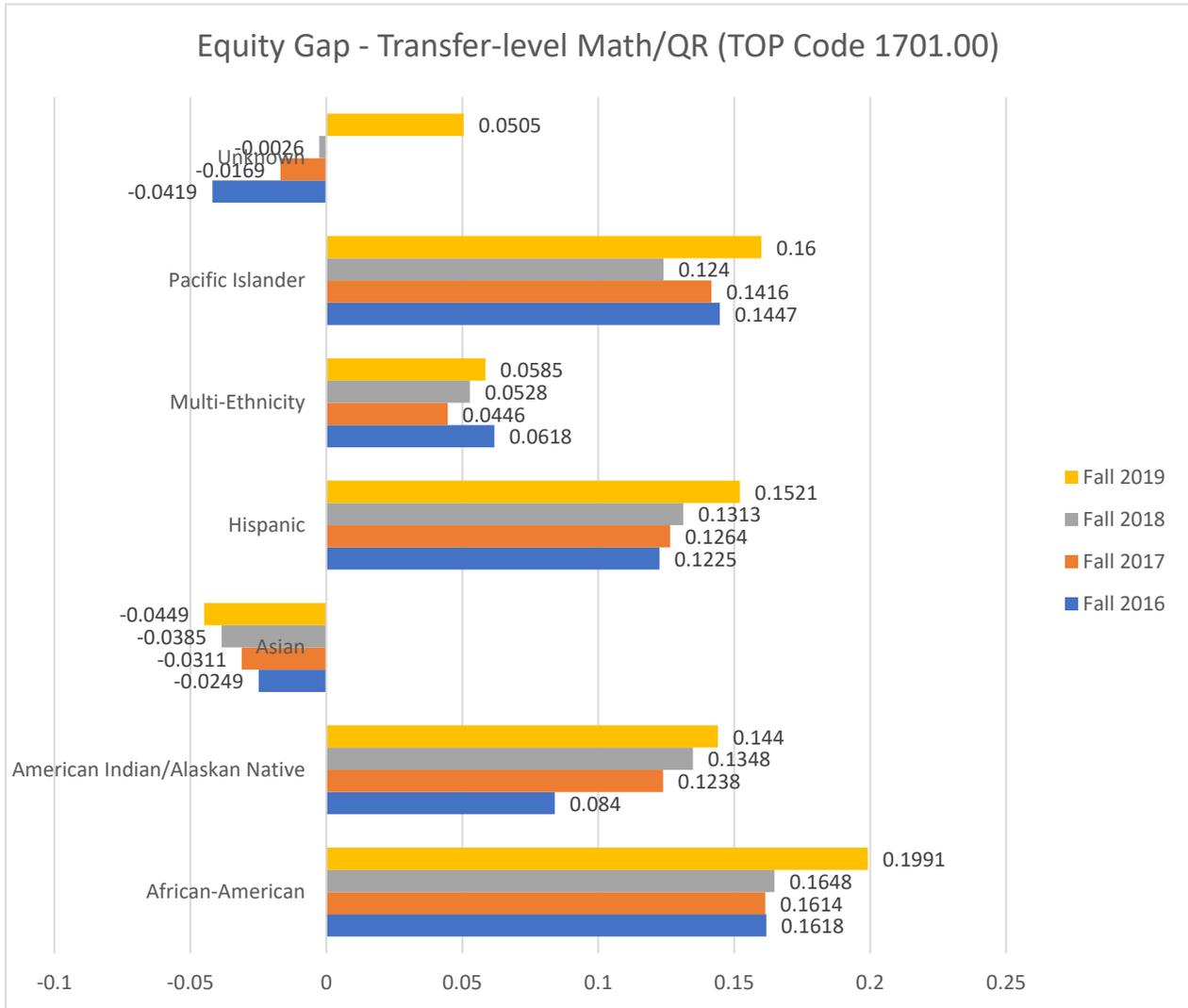


Figure 11 below describes the factors behind the declining success rates and growing equity gaps indicating the percent changes in enrollment count, success count, and unsuccessful attempt count by ethnicity between fall 2016 and fall 2019. As unsuccessful attempts outpace successful attempts equity gaps enlarge even despite the increased throughput. These data should lead us to celebrate increased enrollment and increased numbers throughput while challenging us 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%. A limitation of these data is that it does not include the quantitative reasoning 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 to 2019 in Enrollment Success, and Unsuccessful Attempts

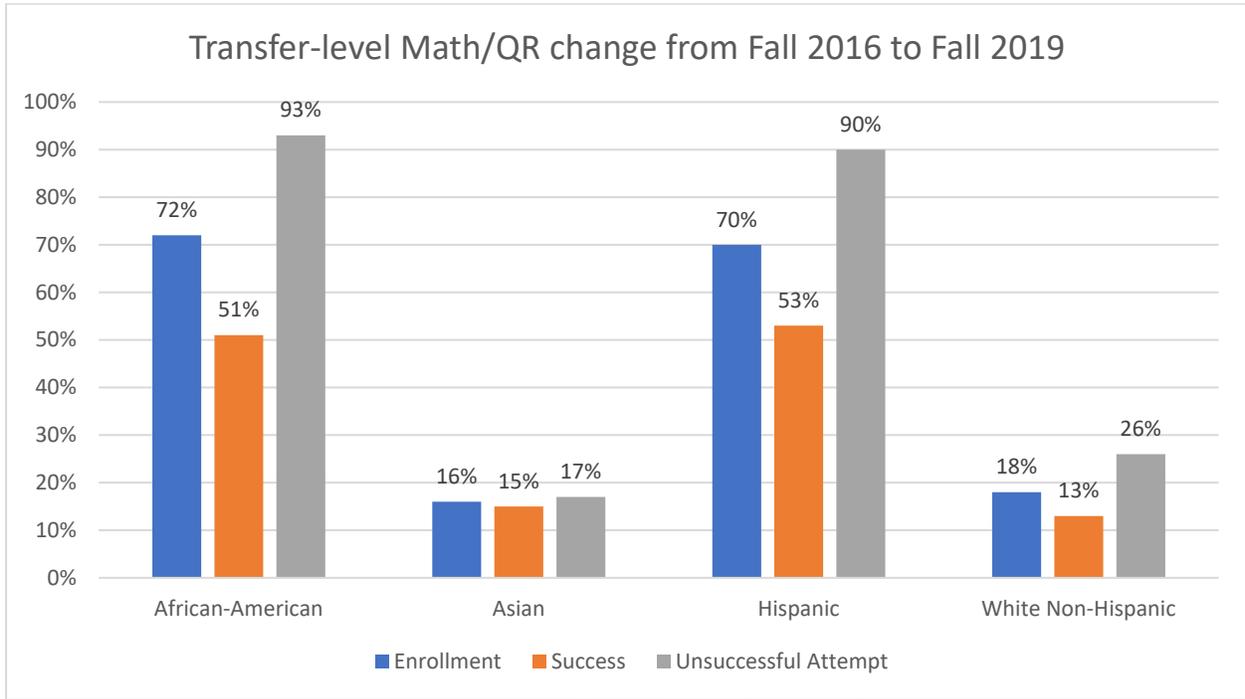


Figure 12 African Americans Numbers of enrollments, successes, and unsuccessful attempts for Fall 2016 and Fall 2019 for Transfer-level Mathematics.

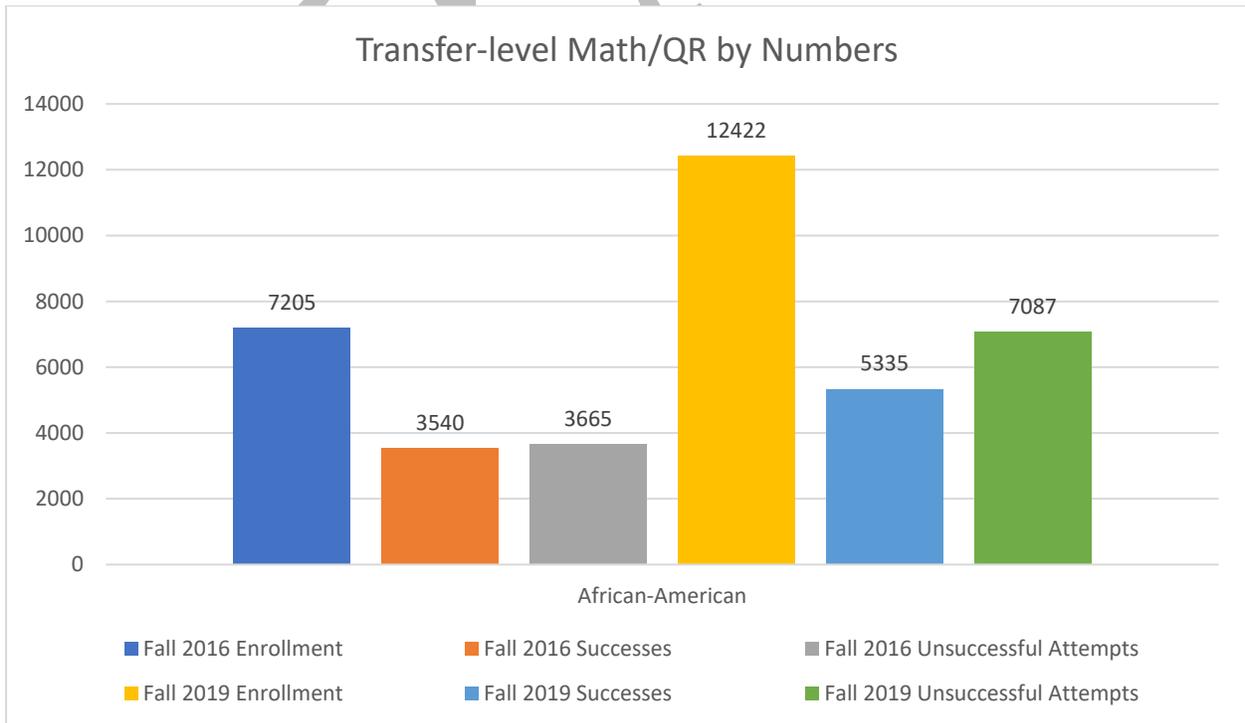


Figure 13 Hispanic Numbers of enrollments, successes, and unsuccessful attempts for Fall 2016 and Fall 2019 for Transfer-level Mathematics.

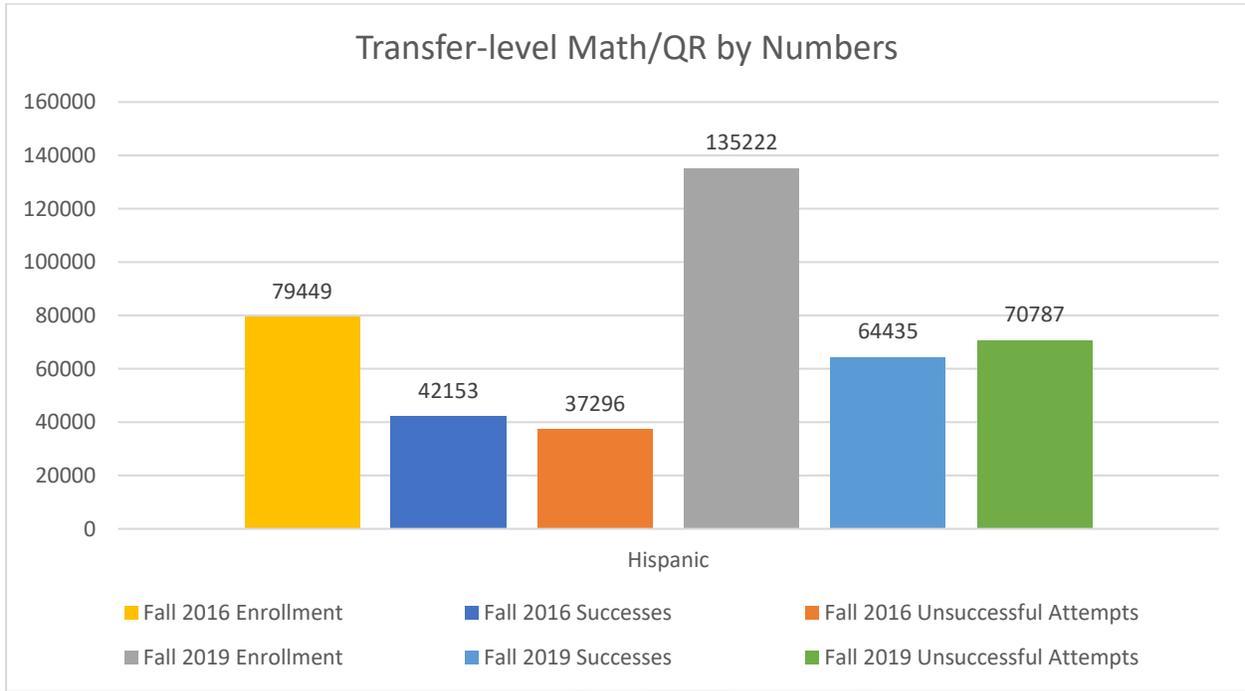


Figure 14 Asian Numbers of enrollments, successes, and unsuccessful attempts for Fall 2016 and Fall 2019 for Transfer-level Mathematics.

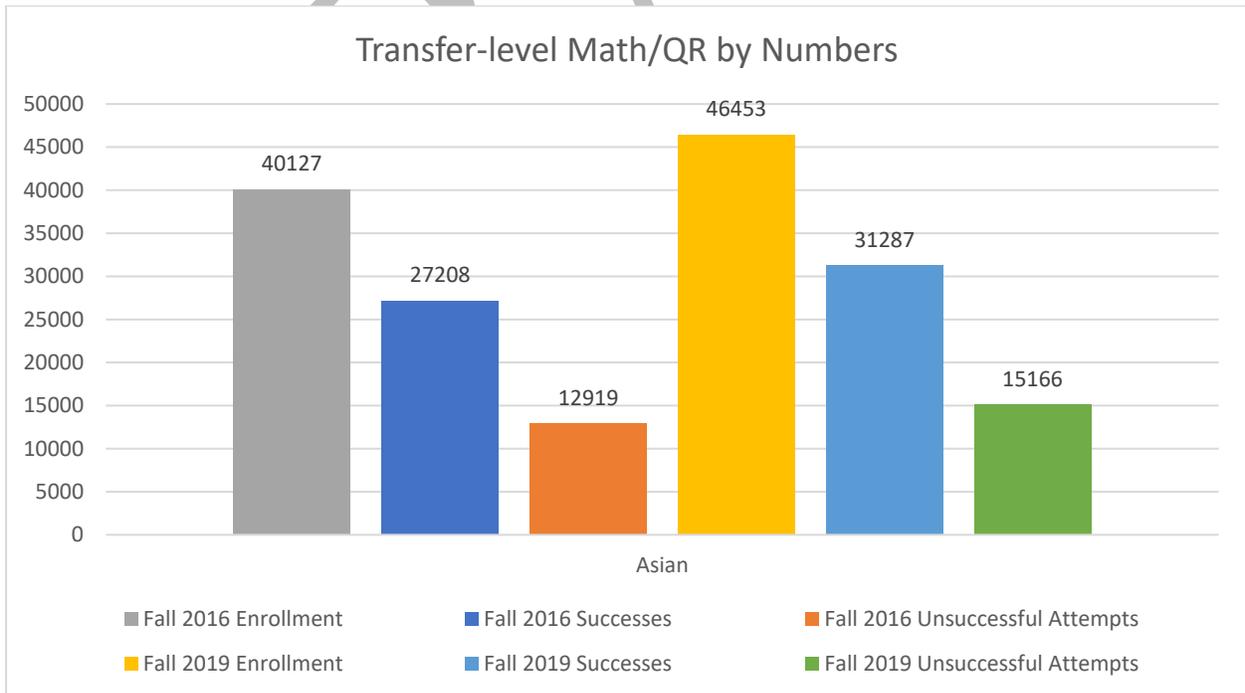
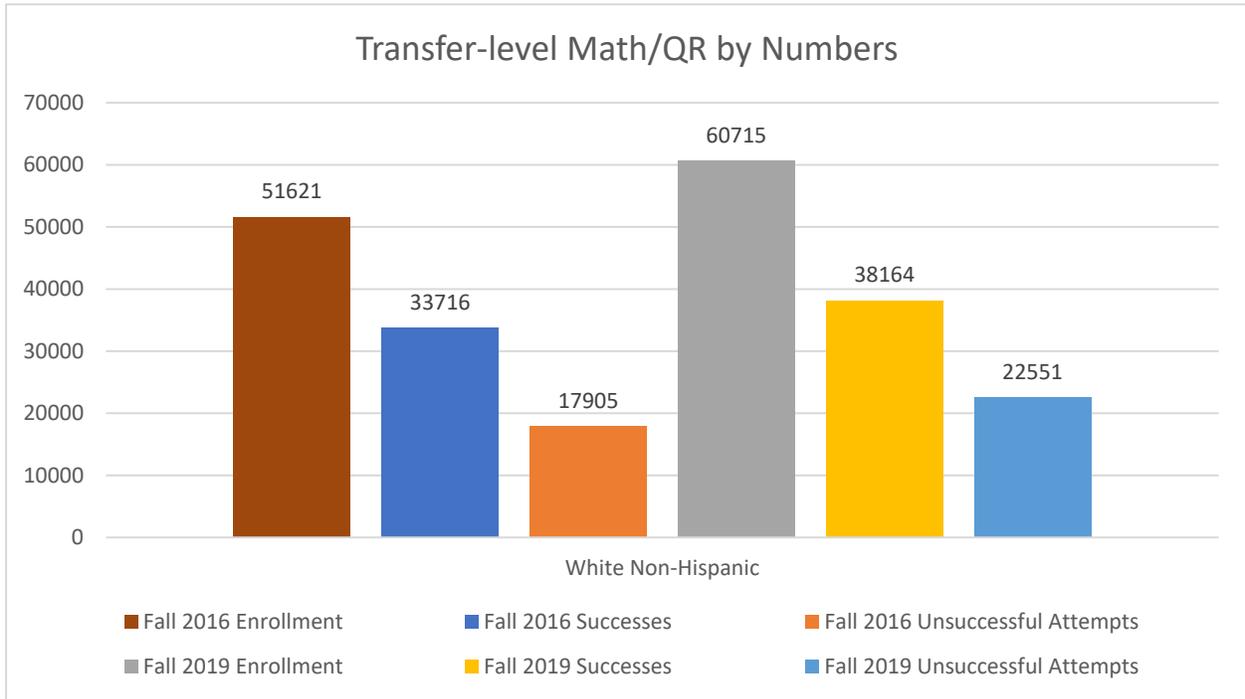
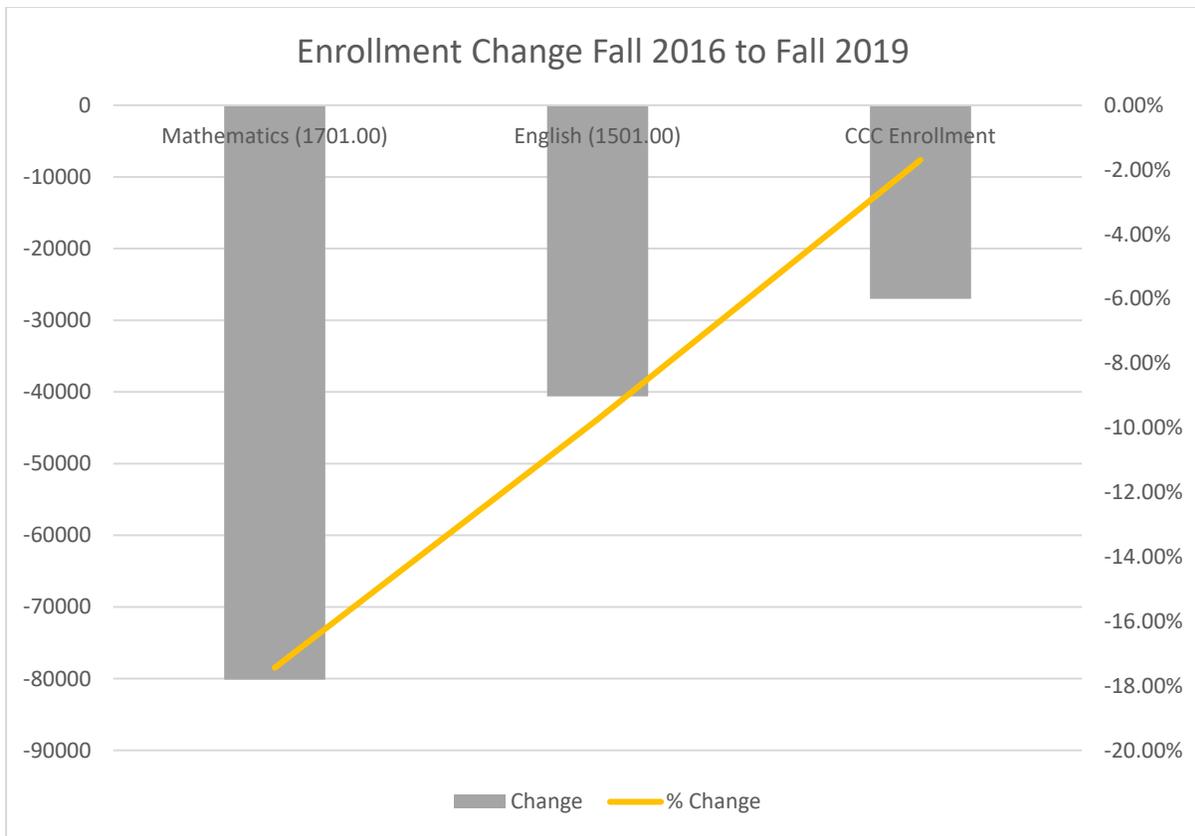


Figure 15 White Non-Hispanic Numbers of enrollments, successes, and unsuccessful attempts for Fall 2016 and Fall 2019 for Transfer-level Mathematics.



**Implications Reduced Enrollment with Mathematics and English Credit Courses**

Enrollments statewide in credit mathematics courses (TOP Code 1701.00) went from 459,606 in fall 2016 to 378,429 in fall 2019. Credit English (TOP Code 1501.00) enrollments statewide went from 416,982 in fall 2016 to 376,362 in fall 2019. Total enrollment in the California community colleges credit courses was 1,591,276 in fall 2016 and 1,564,273 in fall 2019. (duplicated Fig.1)



There has been a reduction in the overall numbers of students taking credit English and mathematics 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. There are important considerations for students who opted not to enroll in English or mathematics early in their college career. 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 which 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 is consistent with research on Guided Self Placement at the CSUs and other studies<sup>26</sup> included in the GSP resources at ASCCC. Colleges must analyze these data to determine if this 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 they used these lower level courses as an opportunity for a warmup or to gain momentum and would like the opportunity to register in these courses.

The introduction of support or corequisite courses now taken within the same semester, were identified as concerns by students and institutions. Scheduling support is a challenge as well as

<sup>26</sup> ASCCC Guided Self Placement (GSP) resources <https://tinyurl.com/ASCCC-GSP>

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 which required 5-9 units and hours more. Students expressed confusion with support courses, scheduling and time. In addition, what would have been counted as one enrollment in the past English Composition, may now be counted as two enrollments, English Composition plus support. Thus, it is crucial to access this data using the newly created Course Basic (CB)<sup>27</sup> 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**

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 success/unsuccessful attempt data beyond throughput, included a more thorough examination of:

- 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

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

There were unintended consequences for students that desired or needed preparation for a transfer-level course, and where adding in a support or corequisite course confounded the issue. Corequisite support in many colleges resulted in coursework that carried total unit loads in one subject area of 5-9 units, or if units were not increased, the time commitment needed to learn the material was equivalent. The created pressure on a federal regulation requiring students must maintain satisfactory academic progress (34 CFR 668.34)<sup>28</sup> 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 that at least meets or exceeds the 66.7% success requirement. Students not achieving the required GPA, or not successfully completing his or her educational program at the required pace, are no longer eligible to receive assistance under the 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

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<sup>27</sup> CCCCO Data Element Dictionary: <https://webdata.cccco.edu/ded/ded.htm>

<sup>28</sup> Government Regulations § 668.34 - Satisfactory academic progress  
<https://www.govregs.com/regulations/34/668.34>

examine whether financial aid factors disproportionately impacted student populations, student's ability to continue their pathway, and other student success outcomes. A sub-standard grade<sup>29</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. Whereas failure in basic skills or pretransfer coursework does not permanently impact a transfer record. 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 majors. CSU GE requirements in Written Communication, Oral Communication, Critical Thinking and Mathematics/Quantitative Reasoning must be passed with a C or better. CSU's 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."<sup>30</sup> 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 entrance into the more selective campuses such as Berkeley, UCLA and UCSB necessitating a higher GPA.<sup>31</sup> A substandard grade in a transfer-level English or mathematics course will impact transfer. Later, in this paper will be a discussion of the rate of transfer among students who successfully completed a remedial or basic skills course.

Furthermore, receiving a sub-standard grade in the student's first course, especially at the transfer-level, may heavily impact student persistence to continue to pursue their 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**

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 were specific to those intended falling 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 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

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<sup>29</sup> A sub-standard grade is a D, F, W, or NP

<sup>30</sup> <https://www2.calstate.edu/apply/transfer/Pages/upper-division-transfer.aspx>

<sup>31</sup> UC Transfer Data from California Community Colleges UCOP  
<https://admission.universityofcalifornia.edu/counselors/files/uc-transfer-application-data.pdf>

first academic year. These colleges also provided important qualitative data in survey feedback from students and faculty regarding areas of success and ones needing improvement.

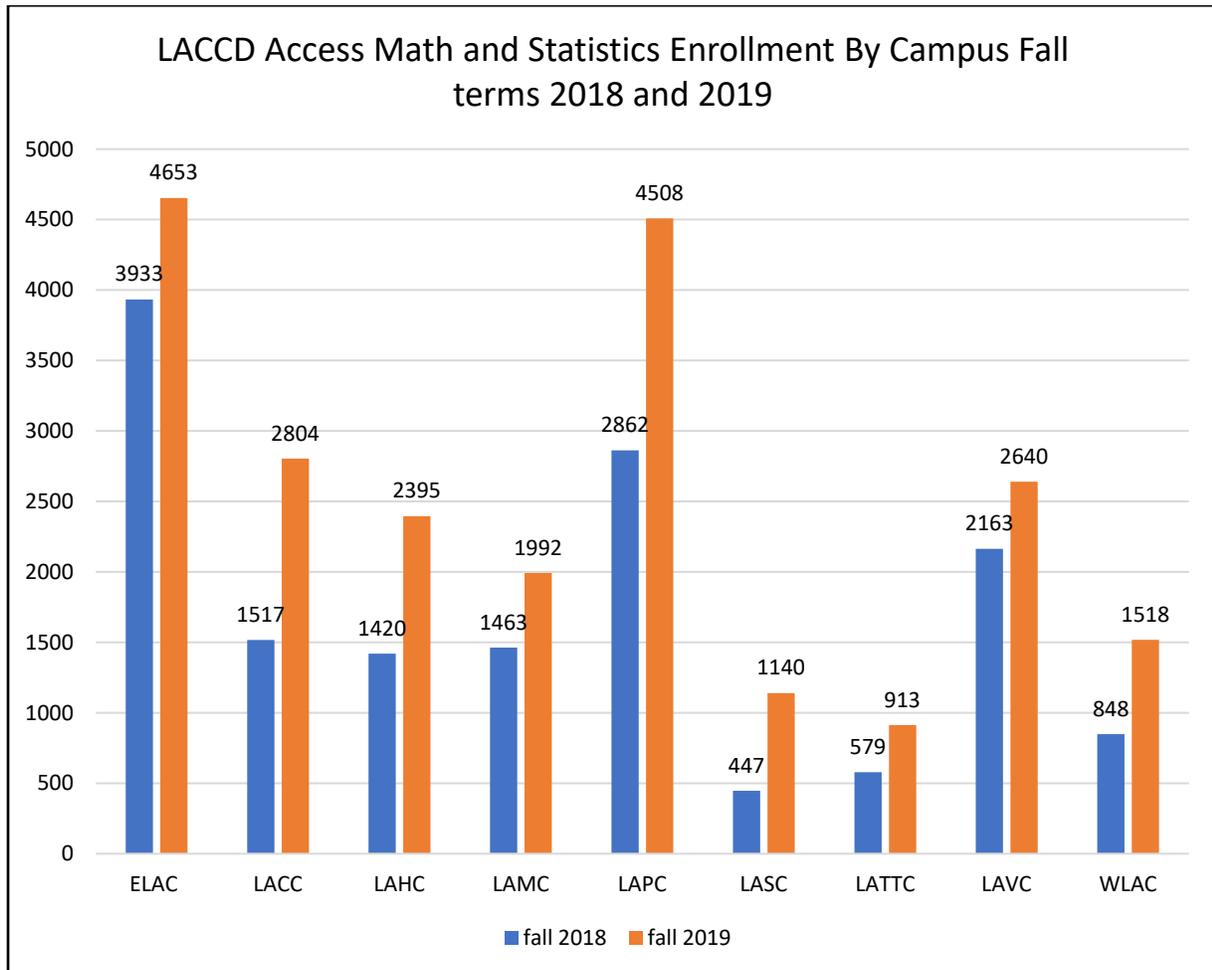
Case studies exploring local college data included diverse colleges: Colleges making up the Los Angeles Community College District (LACCD) and Glendale Community College (GCC). These local data mirrored statewide data confirming more students were succeeding in transfer level English and mathematics. As a group of colleges, 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, fall 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 previous years. LACCD data was comprehensive and represents 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 is evidence is presentative of the move state-wide 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 size, location and student population. Located in different communities within 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), West LA College (WLAC). The LACCD District Academic Senate (DAS) President indicated that in Fall 2019, LACCD had approximately 31,000 students enrolled in English and 29,000 enrolled in mathematics/quantitative reasoning courses without placement through an assessment exam, and without access to many pretransfer or remedial courses that had been previously offered at the nine colleges. The faculty felt it was clear that former placement processes were flawed and more students should have had 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 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, increased throughput in some courses but also lower success rates and widening equity gaps for key Mathematics, Statistics, and English courses.

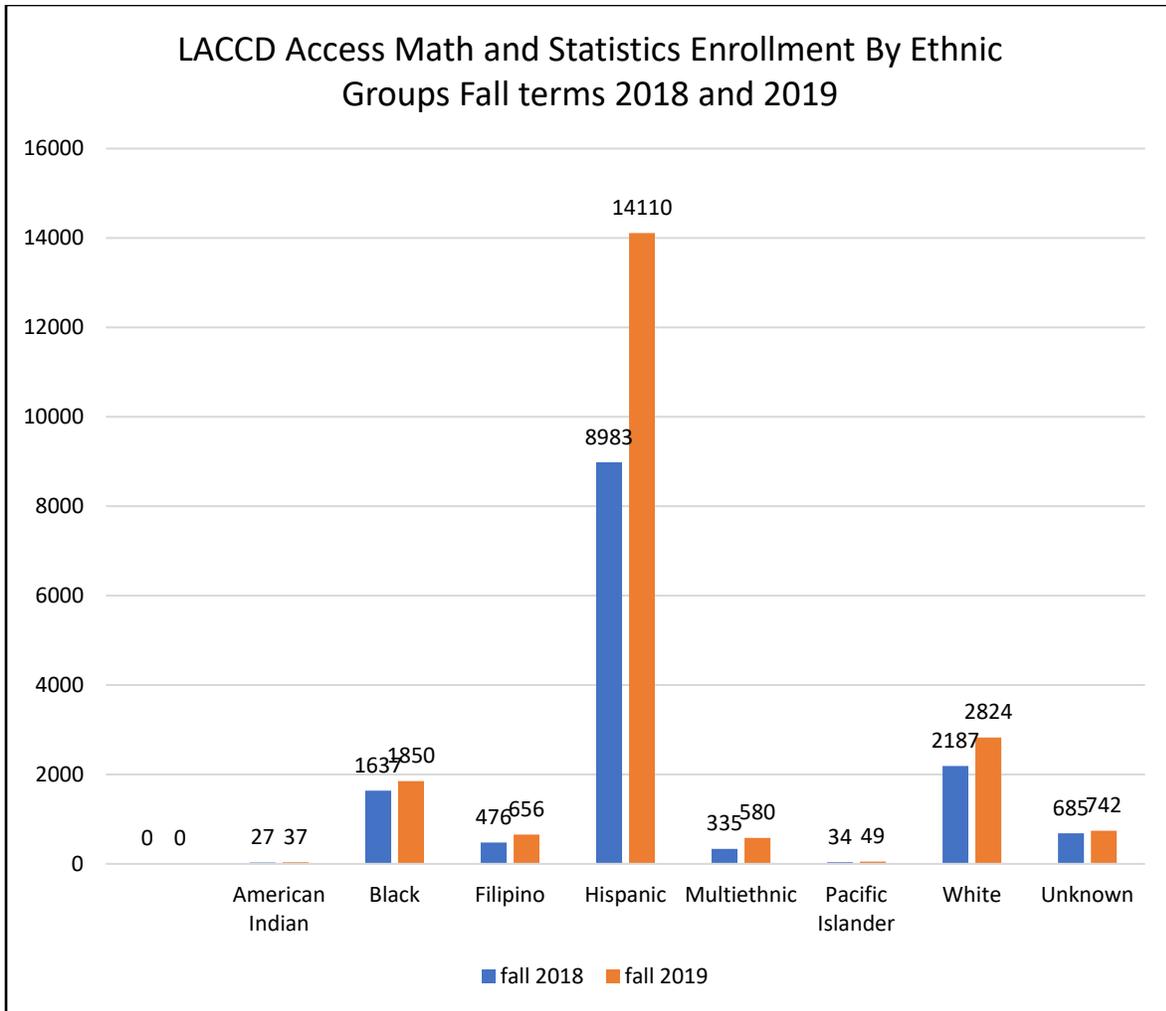
Figure 16 indicates overall access increase [to transfer-level mathematics courses](#) as measured by enrollment increases from 15,232 to 22,563 (+7331 or 48.1%). The largest increases in enrollment were at Southwest College (155%) and LA City College (85%).

Figure 16 Increased enrollment counts in transfer-level mathematics by ethnicity in the Nine LACCD colleges from Fall 2018 to Fall 2019.



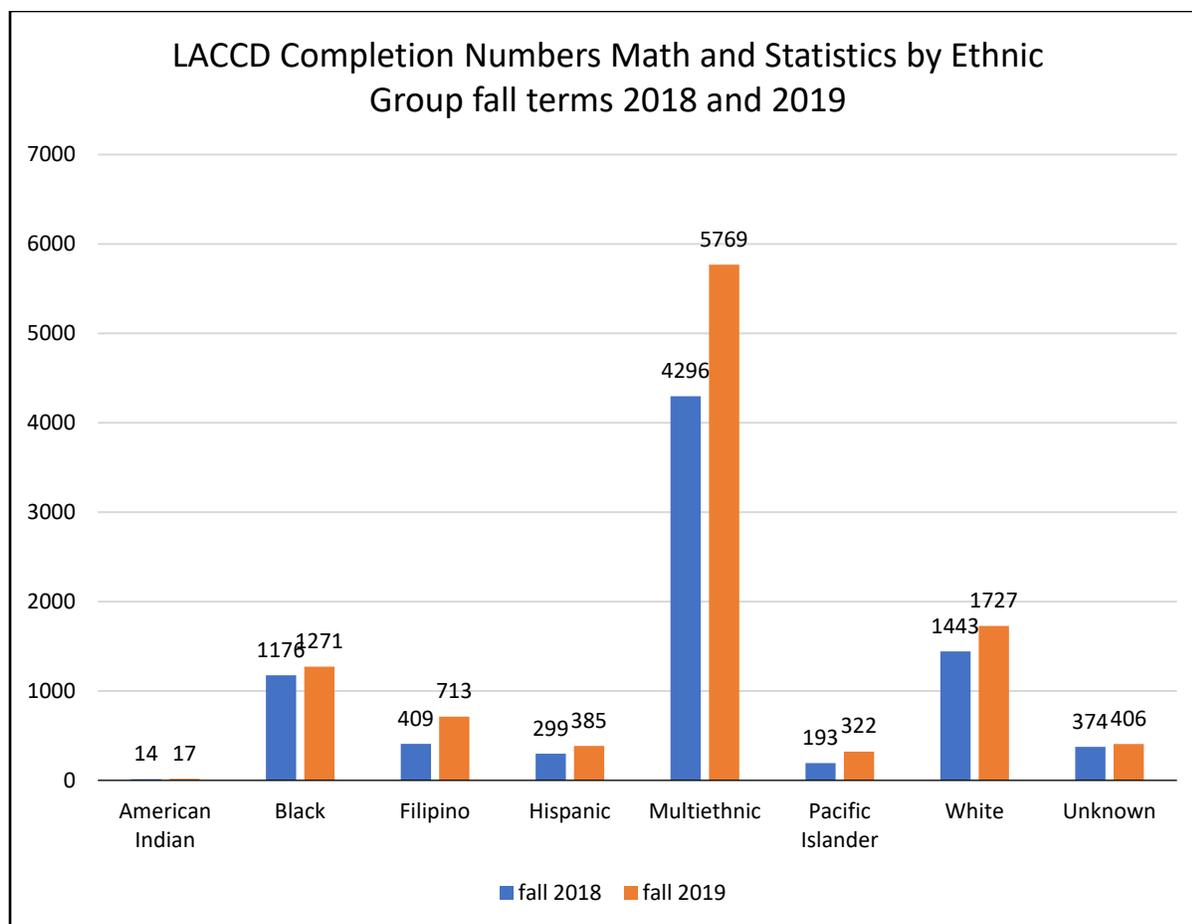
When disaggregated by ethnic groups, enrollment increases were observed in Africans Americans (97.6%), Multiethnic (73.1%) and Hispanic (57.1%) ethnic groups. Large increases in access were observed in under 20-year old (79.1%) and over 55-year old (61.9%), females (54.3%), first-time students (117%), 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%), 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 and Valley. The enrollment in Statistics 101 increased more than 250% in Fall of 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 an option to students who might benefit from additional support and preparation. In the Fall of 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	Math 134 Accelerated Elem. & Int. Algebra	Math 227 Statistics	Math 227-S Statistics	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 3). Due to both lower enrollment and 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 many LACCD students were able to enroll in, 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 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. **Overall Success Rate for all Students in Transfer-Level Math 227 (Statistics) declined by 15.5%.** A decline in success rates were 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.

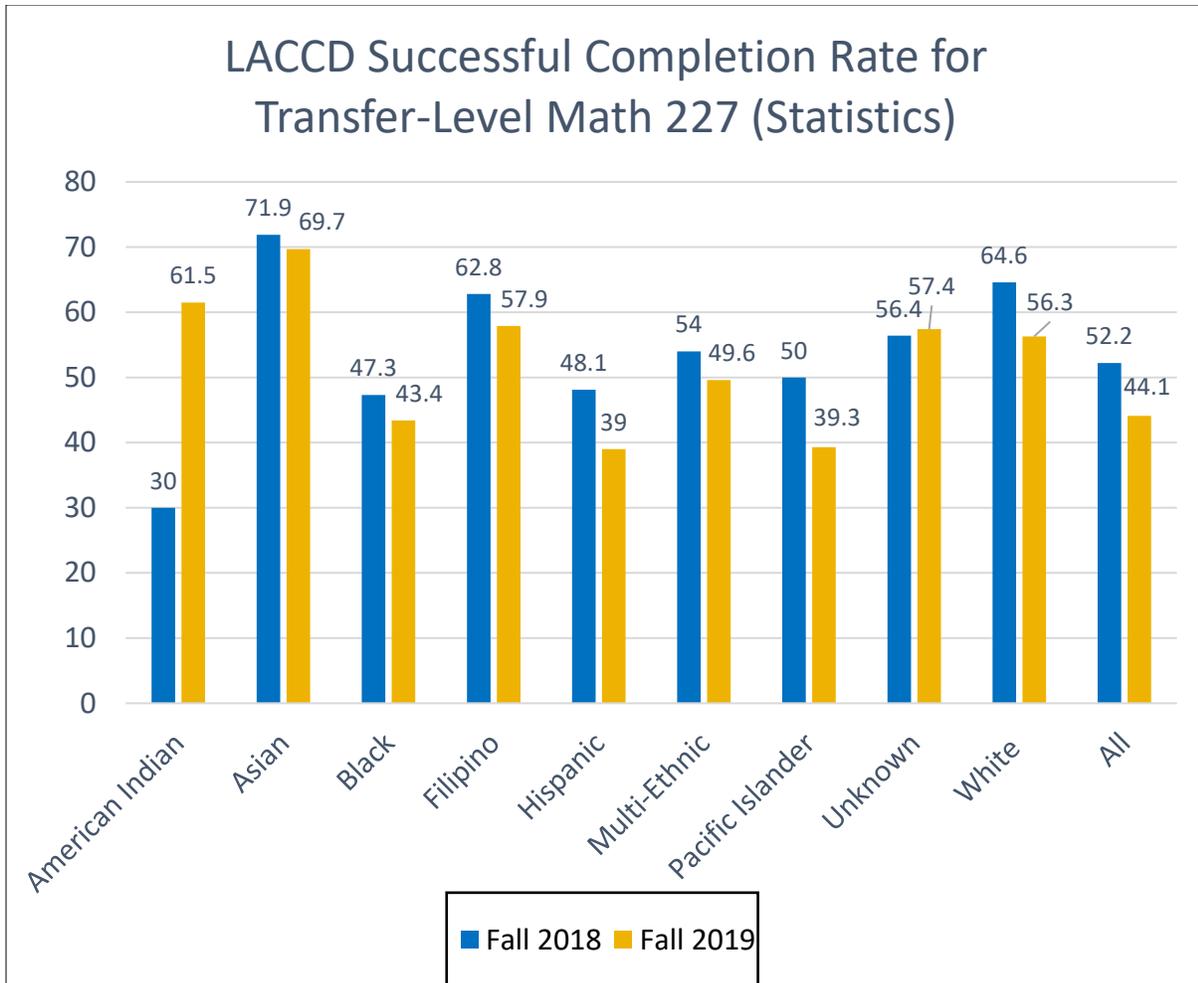


Table 3 Districtwide Success Rates in Selected English Courses (LACCD, Fall 2018 versus Fall 2019)

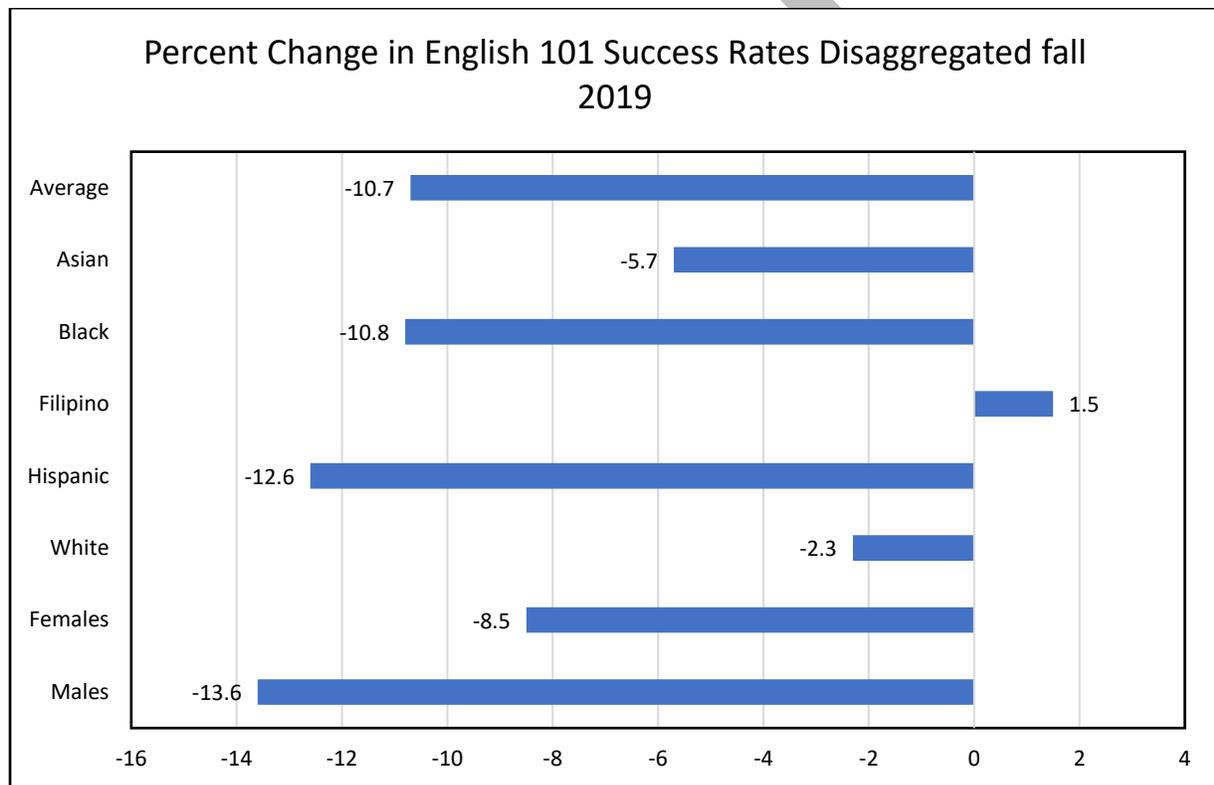
Term	English 100 Accelerated Prep CB21A	English 28 Basic Skills CB 21A	English 101 Transfer-level	English 102 Transfer-level	English 103 Transfer-level	English 72* Supplemental Support	English 104* Supplemental Support	All English
Fall 2018	58.6	59.6	59.5	66.6	68.3	N/A	N/A	60.9%
Fall 2019	49.1	58.0	53.1	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

As seen in Table 3 above the average success rate for all LACCD English courses taken in the District 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 (transfer-level course) dropped from 59.5% to 53.1%. \*English 72 (English Bridge) and 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%.

The percentage of students who received a grade of D (9.2%), 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%) and 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.

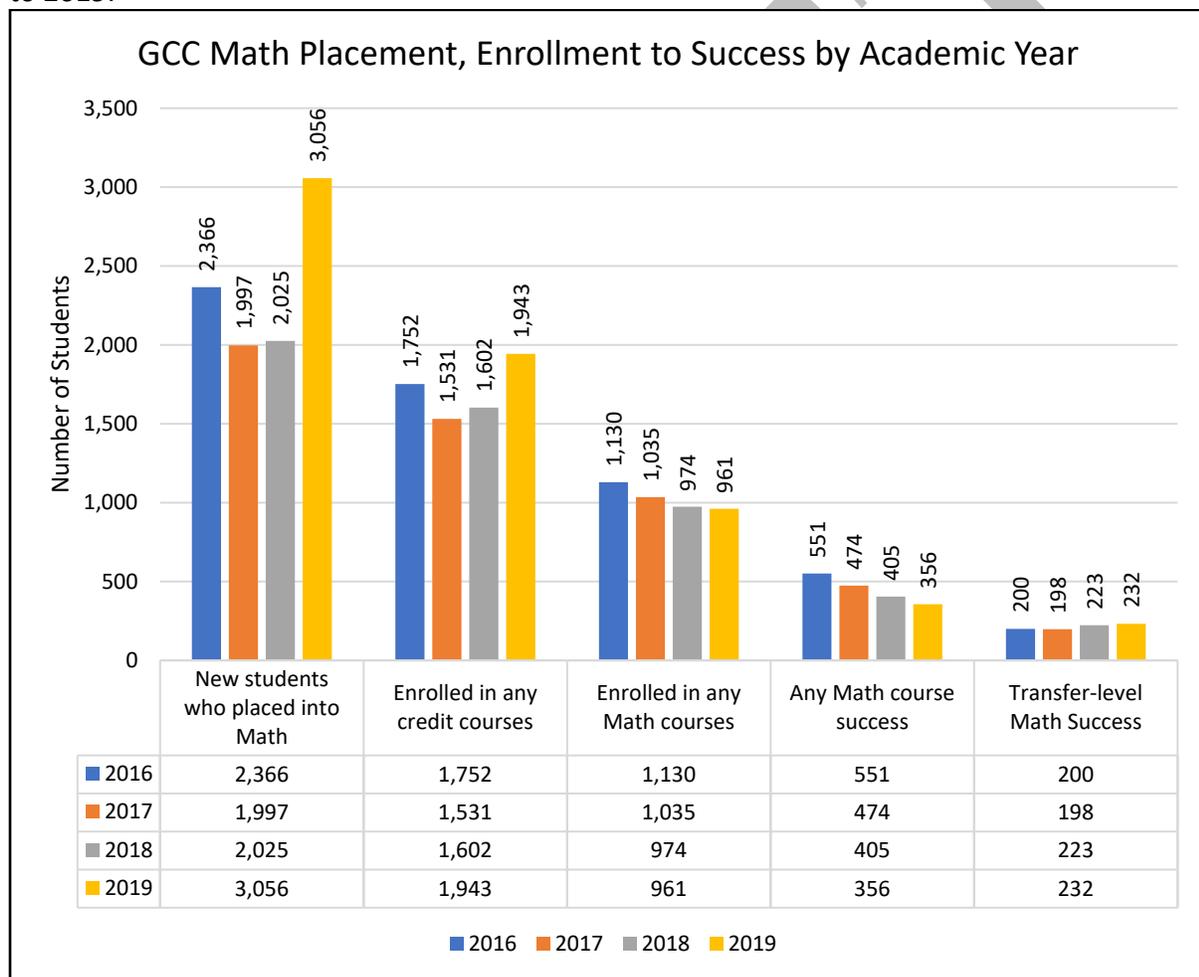


LACCD Colleges implemented varied approaches to Math and English placement and course work. LACCD also noted growing disparity in outcomes among the nine LACCD colleges.

**Case Study: Local Data from Glendale Community College (GCC) Placement, Enrollment, and Success**

Glendale Community College (GCC) examined placement, enrollment in any credit course, enrollment in math and/or English and success in any math or English class and enrollment in transfer-level math or English. 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 enroll in any courses at the college and success outcomes for any enrolled in the Math. Success numbers and rates include success in any math or English 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.

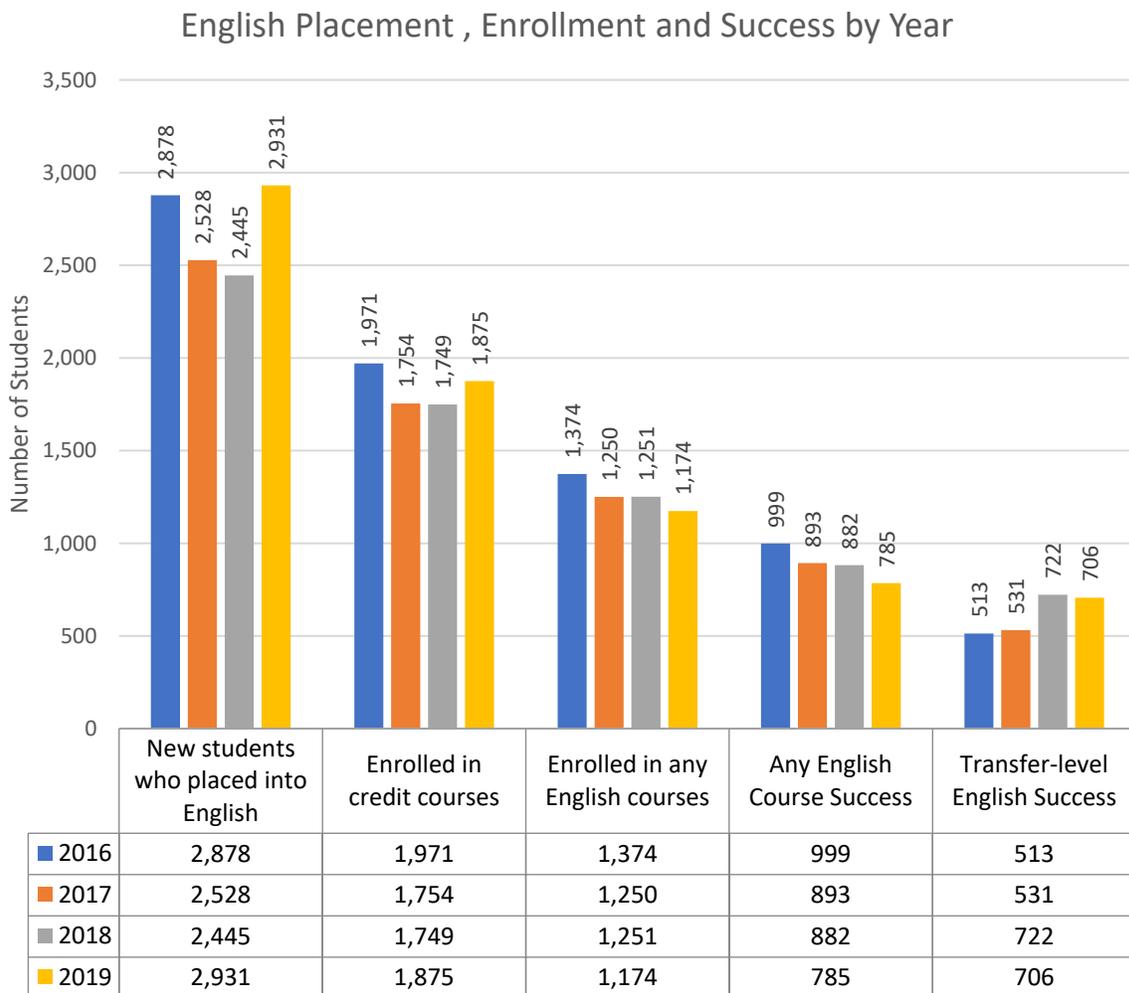


Although transfer throughput increased by 32 students 2016 to 2019, only 9 students additional students passed transfer level math between 2018 and 2019. GCC math success rates overall have fallen 11.8 percentage points between 2016 and 2019 and 4.6 percentage points between 2018 and 2019.

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 in transfer-level English success decreased from 722 to 706. Unsuccessful English attempts have increased 5.8 percentage points from

2016 to 2019. From GCC’s Program Review Summary: 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 is not completely surprising. Success rates for 101 and 101+ courses in 2019-2020 are higher than the average of what the California Acceleration Project (CAP) reports from their 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 required requisites are lower than what we saw at GCC. CAP reports seeing an average success rate of 66% for courses analogous to 101 and 60% for courses analogous to 101+.<sup>32</sup> (follow up with GCC)

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 is examining the gaps from placement to enrollment and from enrollment to success for both English and Math. Glendale makes Guided Self Placement available for students. Initial data on those that chose GSP shows promising results.

**Unintended Consequences for Special Populations (data source from the CCCCCO Datamart data for fall semesters 2016, 2017, 2018, 2019)**

Special populations<sup>33</sup> are students identified with specific characteristics that increase the need to carefully track and cohort students to serve them better. Some of the 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 and/or socioeconomic status, others are grouped by characteristics such as incarcerated, middle college or foster youth. The description and coding for these special populations are found in Appendix A. Reporting these student characteristics are mandatory. The coding (SG) and descriptions are included on Appendix B. Mathematics data cannot be truly disaggregated by special populations without access to the CB coding to specifically identify these populations within the courses and should be a high priority of local colleges that serve these populations. For this reason, the special populations have been examined for English outcomes only.

<sup>32</sup> CAP Gazette: [https://accelerationproject.org/Portals/0/Documents/Cap\\_Gazette\\_2020\\_Jul\\_Web.pdf](https://accelerationproject.org/Portals/0/Documents/Cap_Gazette_2020_Jul_Web.pdf)

<sup>33</sup> See appendix A for descriptions of special populations

However, statewide data using TOP code 1501.00 for transfer-level English courses when disaggregated by special populations raises significant questions and opportunities to better understand the kind of support and resources that contribute to success. The data indicate 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. What factors can inform our placement to better optimize success for these populations?<sup>34</sup>

Puente data indicates a little reduction in basic skills placement but a 5-fold (500%) increase in transfer placement. The data indicates no declines in transfer success (76.88% success rate in 2019), an increase in overall success rates and significantly 1214 successful English completions and only 365 English failures.

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

<b>Puente Transfer-level English (TOP 1501.00) Enrollment, Success and Success Rate and Changes</b>			
<b>Special Population - Puente</b>	<b>transfer-level Enrollment Count</b>	<b>transfer-level Success Count</b>	<b>transfer-level Success Rate</b>
<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*

<sup>34</sup> See appendix B for definitions of special populations

## Puente Enrollment, Success and Unsuccessful Attempts Transfer -level English TOP code 1501.00 Fall terms 2016-2019

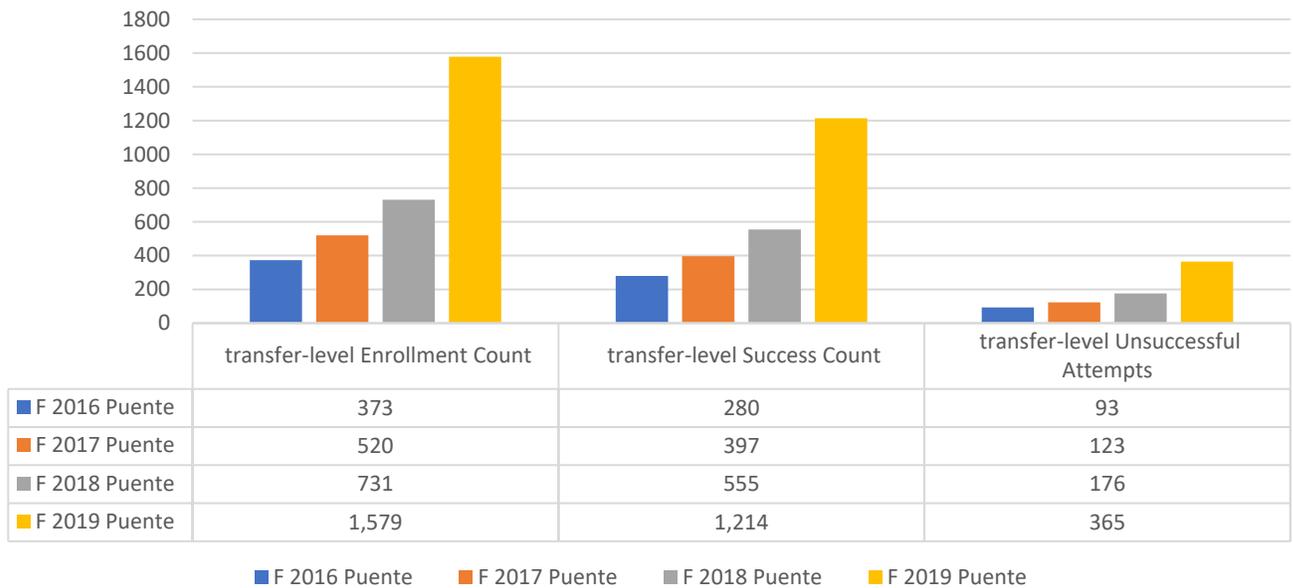


Table 7 shows data for Disabled Students Programs & Services (DSPS) populations which are very diverse. A student enters this special population with varying disabilities ranging from learning disabilities to physical disabilities and traumatic brain injuries to various genetic or other conditions. In 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 and 14,594 DSPS students in transfer-level English. Throughput of 2,603 additional students should be aligned with higher number of unsuccessful attempts (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 a student's goals and abilities with courses to optimize their success. The success rates for DSPS students has decrease of 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

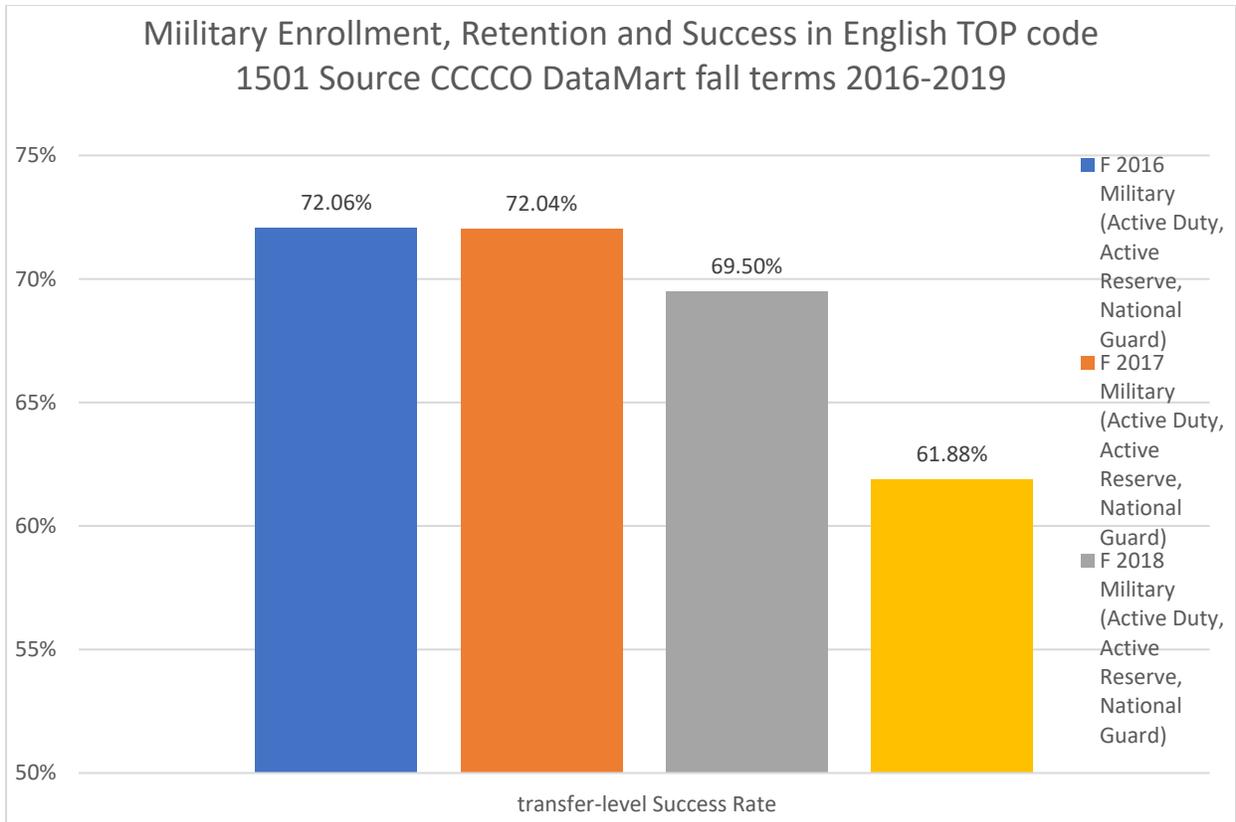
<b>F 2016 DSPS</b>	9,373	6,546	2,827	69.84%
<b>F 2017 DSPS</b>	9,863	6,902	2,961	69.98%
<b>F 2018 DSPS</b>	11,319	7,606	3,713	67.20%
<b>F 2019 DSPS</b>	14,594	9,149	5,445	62.69%
<b>change</b>	5,221	2,603	2,618	-7.15%

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

*Table 8 Military Enrollment, Success and Unsuccessful Attempts*

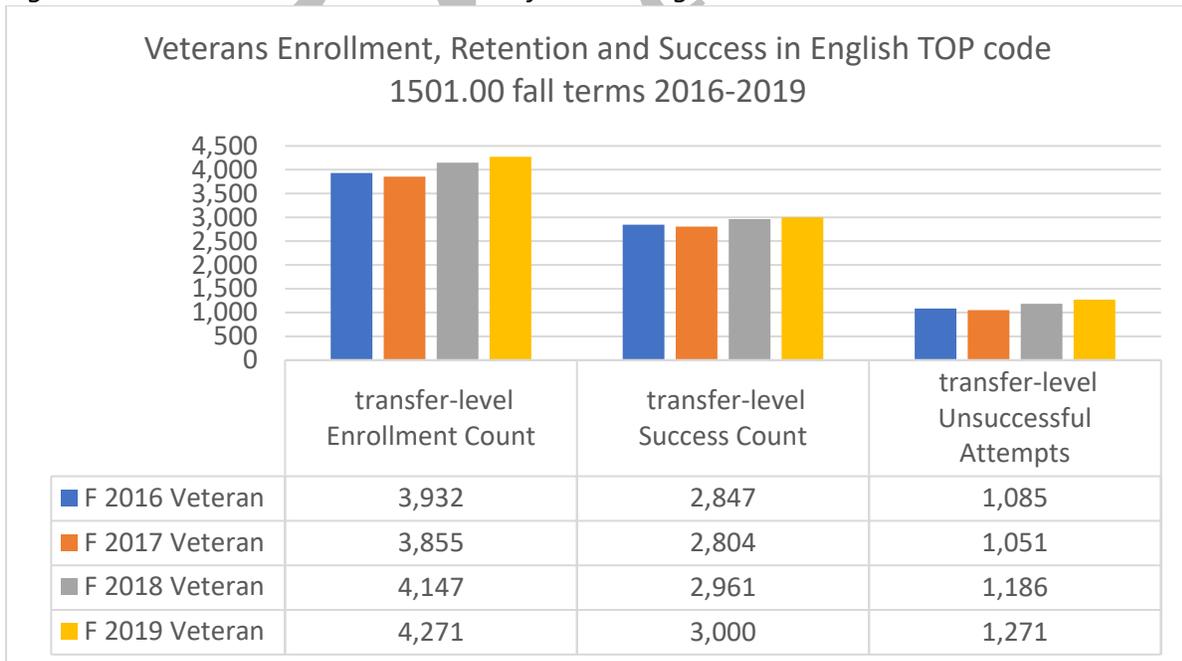
<b>Special Population - Military (Active Duty, Active Reserve, National Guard)</b>				
<b>Transfer-Level English TOP code 1501.00 Fall terms 2016-2019</b>				
<b>Fall Term</b>	<b>Enrollment Count</b>	<b>Success Count</b>	<b>Unsuccessful attempts</b>	<b>Success Rate</b>
<b>F 2016</b>	1,396	1,006	390	72.06%
<b>F 2017</b>	905	652	253	72.04%
<b>F 2018</b>	754	524	230	69.50%
<b>F 2019</b>	2,243	1,388	855	61.88%
<b>Change</b>	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 CAYFES students placed into transfer-level increased by 5-fold (500 times) with 199 successful completions in F2019 but 340 unsuccessful attempts. The success rate decreased by 17.65 percentage points.

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

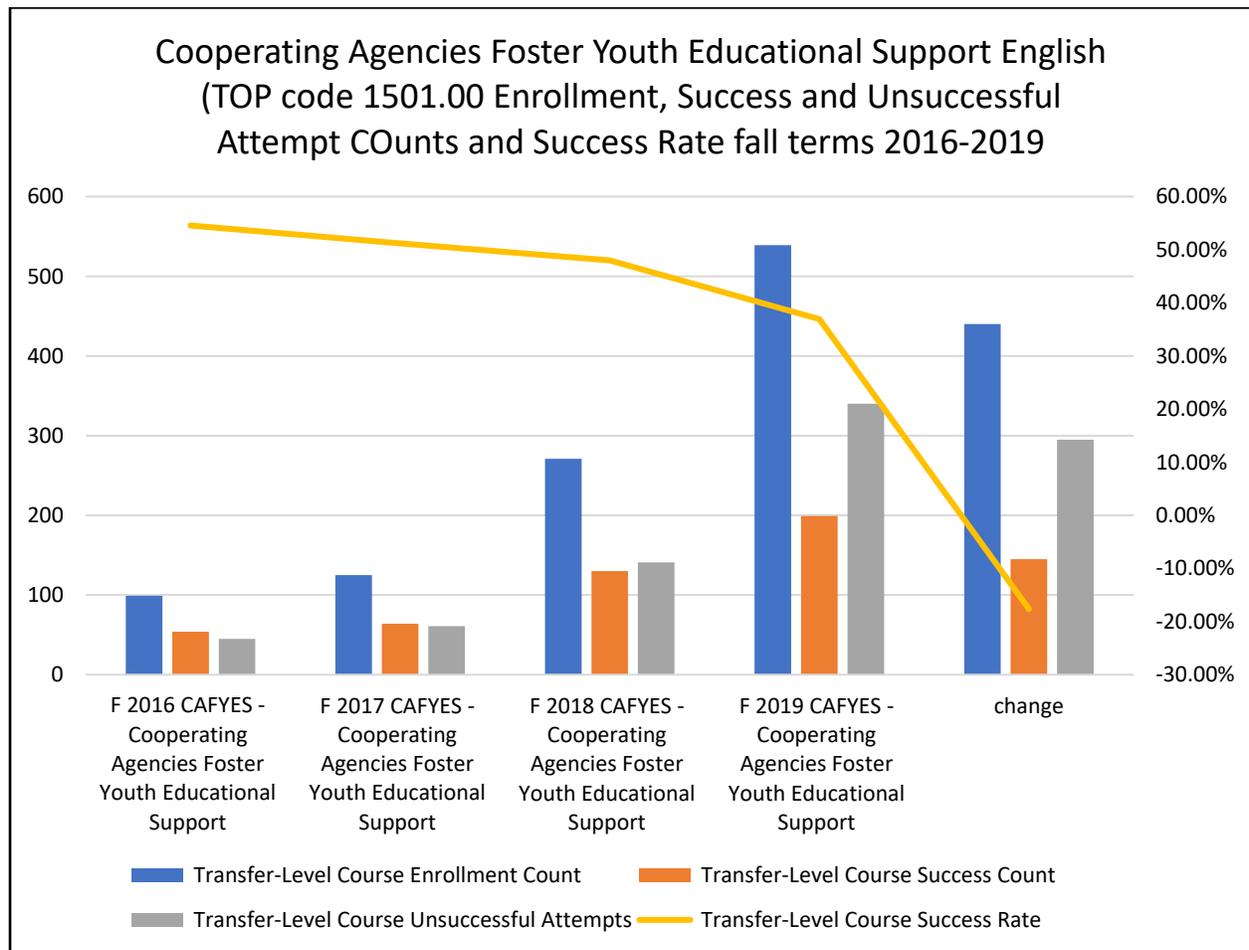


Table 9 CAFYES English 1501 Data fall terms 2016 to 2019

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
<b>F 2016 CAFYES</b>	99	54	45	54.55%
<b>F 2017 CAFYES</b>	125	64	61	51.20%
<b>F 2018 CAFYES</b>	271	130	141	47.97%
<b>F 2019 CAFYES</b>	539	199	340	36.92%
<b>change</b>	440	145	295	-17.63%

Figure 27 Foster Youth Transfer-level English data fall terms 2016-2019

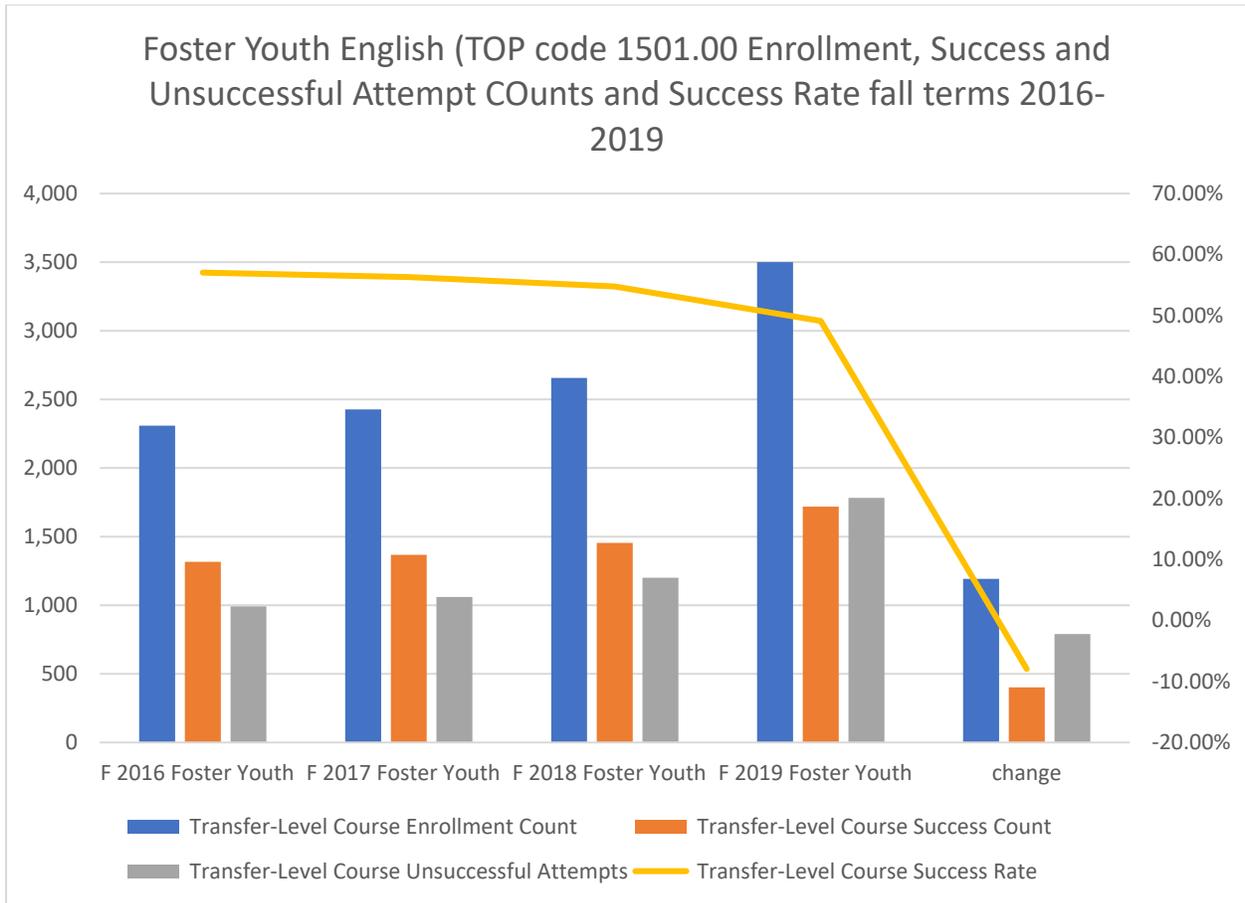


Table 19 Foster Youth Transfer -level English Data fall terms 2016-2019

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. In fall 2019, that success gap expanded to 26 points (49.10% success rate for foster youth as compared to 75.28% success in fall 2019). This equity gap between White Non-Hispanic (75.28%) and CAFYES was 38 percentage points. Is this success rate optimizing success for our Foster Youth and CAFYES students? Or should we consider different variables?

## What Strategies and Support Models Show Promise?

Providing students self-agency, which means options over which they have a choice, allows them to adjust for personal factors in their life that are not included in placement rules. Glendale Community College and other colleges used opportunities to implement Guided Self Placement into a variety of courses. Initial data from Glendale College based upon student self-placement into statistics indicates that when students have the opportunity to select the course they feel prepared for, they tend to complete at a higher rate than students placed primarily on GPA. While the N 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 in transfer-level coursework. Examples of this are Asian ethnic groups and Puente, and MESA 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 became 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 English and mathematics/quantitative reasoning to the 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, and 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 CCC is and how important it is to align strategies with the local student population. The data below describes Mount San Antonio College and Glendale College noncredit programs. Two colleges that have effectively used noncredit strategies and have experience developing curriculum, implementing noncredit and integrating 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. Introduction into basic vocabulary and concepts of statistics. Emphasis 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. Emphasizes critical reading of academic material for college coursework.

The specific competencies addressed in each of the classes are detailed in the 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 course, succeeding at 71% as shown in Table XXX and mathematics success of 70%. These strategies address those students who find they want to opt for better preparation prior to being placed into transfer level coursework.

Table 20 AIME Noncredit English Preparation Data from Mount San Antonion 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
<b>AIME English Students</b>	133	79	<b>59%</b>	56	<b>71%</b>

Table 21 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
<b>AIME Math Students</b>	214	61	<b>29%</b>	43	<b>70%</b>

Feedback collected from students includes the comments seen in Figure 29 indicates 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 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 Glendale

College 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 in college math and English. GCC research indicates that students who take noncredit courses outperform students beginning in credit, not only in the initial course, but also in subsequent courses.

Table 22 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 22 Comparison of Credit and Non-credit and Student English Success at GCC*

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

Table 23 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 has further connected the importance of language learning in mat proficiency and stimulated specific ESL coursework and collaboration integrated with transfer -level math courses.

*Table 23 Comparison of Credit and Non-credit and Student Math Success at GCC*

<b>GCC Credit and Non-credit Course taking Success in Specific Mathematics Courses and Subsequent Courses</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>	<b>2019-20*</b>
<b>Math 155/255 - Arithmetic &amp; Pre-Algebra Math Success Credit Only</b>	39.60%	45.30%	48.50%	--
<b>Math 155/255 - Arithmetic &amp; Pre-Algebra Math Success From Noncredit</b>	66.50%	70.10%	72.40%	--
<b>Math 141/145/146/245/246 – Elementary Algebra Math Success Credit Only</b>	48.80%	45.10%	40.20%	40.00%

<b>Math 141/145/146/245/246 – Elementary Algebra Math Success From Noncredit</b>	66.80%	69.50%	62.10%	67.90%
<b>Math 101/119/120/219/220 – Intermediate Algebra Math Success Credit Only</b>	50.70%	46.70%	44.00%	65.70%
<b>Math 101/119/120/219/220 – Intermediate Algebra Math Success From Noncredit</b>	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 not having enough time in the semester to take a co-requisite class and is quite different from mandated remedial courses.

After full implementation of AB 705 for ESL has begun, a follow up report to address the innovative ESL strategies and case studies such as the ESL milestone certificates at colleges like Cerritos that have enabled students to get the proficiencies they need to gain English language skills. In addition, adoption of ESL coursework that meets GE requirements and are transferable have 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.”<sup>35</sup> In addition, case studies at Glendale College that combine ESL support courses for mathematics, particularly statistics, have shown positive results and shown how important language acquisition is with regards to mathematics.

While many new support models have presented additional successful strategies, often students juggle high unit loads and time commitments and for some that poses a difficulty. Successful co-requisite models have been described by Accelerated Learning Program (ALP) and the authors below as small, 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 CCCCO rolled the Basic Skills 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 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 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

<sup>35</sup> Rodriguez, O et al (April 2019) English as a Second Language in California’s Community Colleges. PPIC <https://www.ppic.org/publication/english-as-a-second-language-in-californias-community-colleges/>

the cost considerably. In addition, increased tutoring and counseling support present additional costs. Although corequisite support developed by CCBC (Community College of Baltimore County) used the strategy successfully and many colleges nationally adopted their concept of co-requisites, a recently updated article by Goudas March 2017 (Updated May 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>36</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.

The quote above was not included to accuse colleges of malicious intent. Rather, to describe many narratives state-wide and nation-wide in moving forward in analyzing English and mathematics pathways and placement and address any possible or perceived pitfalls with a goal to improve programs offered to students and optimize success.

The additional cost associated with units or load may break even with the traditional model since successful students are done 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 colleges make choices on what programs to support and how to support students in a virtual world.

LACCD Analysis of student drops and withdrawals early in the Fall 2019 semester (week 6) compared to patterns in the previous fall semester caused them to create a survey tool for students which elicited helpful information from the students’ perspective.

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<sup>36</sup> Accelerated Learning Program (ALP) at the Community College of Baltimore County <https://alpedevd.org/>

Figure 29 LACCD Student Initiated Drops and Withdrawals on English and Math fall 2019

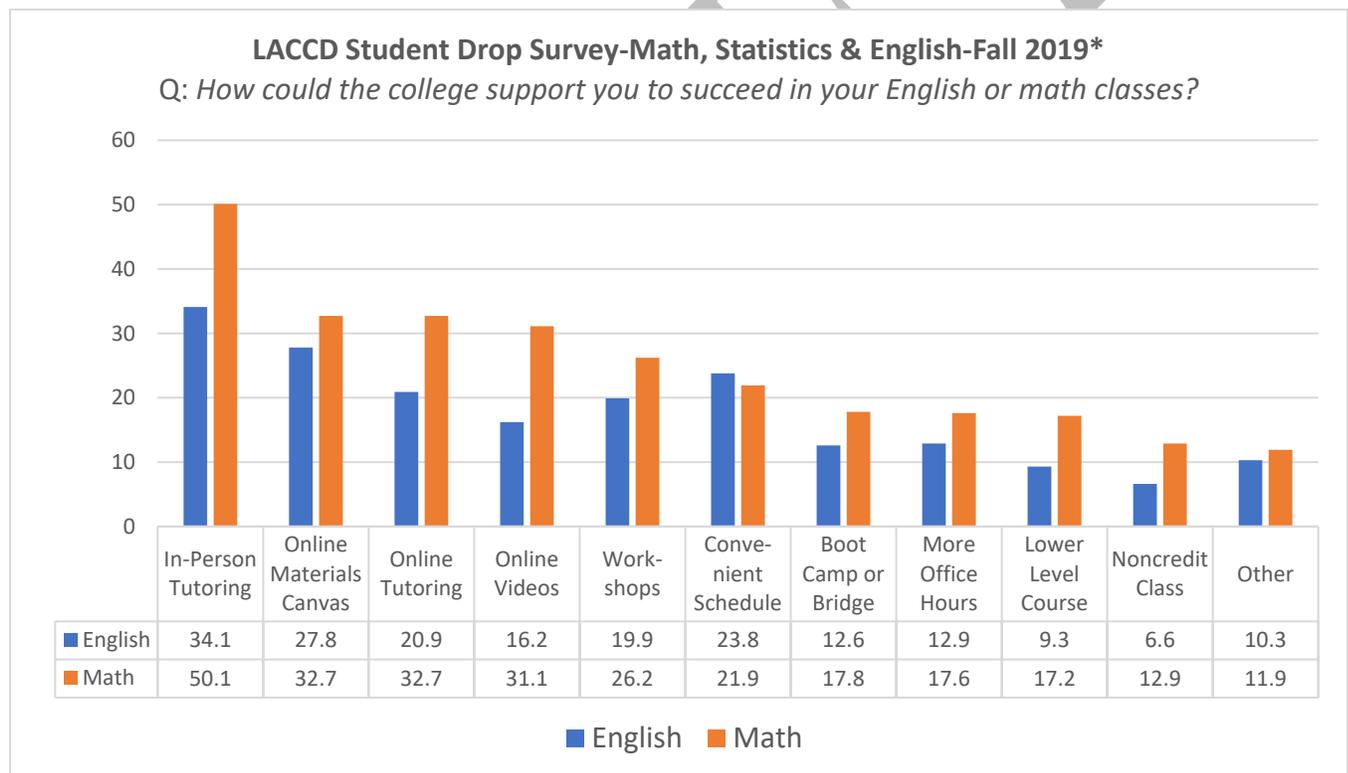
**Student Initiated Drops and Withdrawals in Selected English, Math and STAT Classes (through the end of Week 6)**

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	1255	0	660	660	N/A	0	188		22.2%
MATH	2275	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 Initiated Drops or Ws  
 Prepared on: 10/07/2019

The fall 2019 survey of students who dropped mathematics, statistics, or English classes, 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.

Figure 30 LACCD Student Drop Survey on Success Strategies



### Considering the Educational Needs and Preparation of the Local Student Population

When determining how best to reform a college’s placement protocols in compliance with AB 705 or Ed Code section 78213, it is crucial to 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 high value, it is also important to make sure students are taking the courses that prepare them for the best chance of success in their self-determined

educational goal such as course work 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 it may be more beneficial to colleges for both financial and state-wide data goals to place a student in a liberal arts mathematics pathway as opposed to a STEM pathway, it is still important to consider the student's self-determined goals. Liberal Arts pathways (which means Statistics at many colleges, but also includes other valuable course options) is very different from the STEM or BSTEM mathematics pathway, and a student who is not properly placed initially may face an even longer time in the mathematics pathway had they been appropriately placed in the beginning? Currently, African Americans, Latinx, and women are under-represented in STEM fields, where there is high demand 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 our 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 the colleges, as it was determined by the Legislative Analyst's Office (LAO) that AB 705 was not an unfunded mandate. Fortunately, the CCCCO permits colleges to use a small portion Student Equity and Achievement (SEA) 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 administration directed as much funds as they could to implement AB 705. Faculty were provided with reassigned time or stipends to study and overhaul their placement protocols and redesign curriculum, if 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 means pre-transfer basic skills coursework requiring a prior semester. Remediation includes both corequisite support, accelerated or stretch coursework and pre-degree applicable coursework, many would interpret remediation as exclusively the latter. Some colleges are struggling with English and mathematics prerequisites in other non-sequential courses, and some are concluding that a student who is placed in a transfer-level course with a corequisite have met the prerequisite of a transfer-level course. Some disagree and think that placement into a corequisite is not the same level of preparation.

Just as there are numerous studies that support the disadvantages of remediation, there are numerous studies that support the advantages of remediation. In this section, there are references to several research projects with both pros and cons of remediation. The reader should investigate the studies and share with colleagues while evaluating and refining local placement protocols.

Atwell, Lavin, and Thurston 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.”<sup>37</sup>

These same conclusions do not hold true with four-year institutions where remediation does not contribute to final degree completion, but 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:

- Accelerated Learning Program (ALP) which mainstreams remedial students, enrolling them in college-level courses with non-remedial students and a required corequisite course, with the same instructor
- 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 DLA (Directed Learning Activities)
- Accelerate 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 the best strategy to provide a lasting skill set for educational pathways. In addition, consideration of college completion rates should be included. The CCRC [long-term study the Tennessee corequisite](#) strategy concluded, “We found no significant impacts of placement into corequisite remediation on enrollment persistence,

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<sup>37</sup> New Evidence on College Remediation Paul A. Attewell, David E. Lavin, Thurston Domina, Tania Levey The Journal of Higher Education, Volume 77, Number 5, September/October 2006, pp. 886-924 (Article) Published by The Ohio State University Press DOI: For additional information about this article [ This content has been declared free to read by the publisher during the COVID-19 pandemic.] <https://doi.org/10.1353/jhe.2006.0037>

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.”<sup>38</sup>

## Conclusion

Faculty, statewide should be commended for their efforts to implement AB 705, creating pathways, evaluating and improving instruction methods, and designing support structures for their students. Successful implementation of AB 705 now statute in CA Ed 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. It is of utmost importance that community colleges recognize their student population and their mission to successfully enable California community college students to reach their educational goals. In fact, due to the large number of under-represented and minoritized (URM) students and populations that are disproportionately impacted by our (U.S.) educational systems, 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 the 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 their goal. In order to support this important mission, AB 705 (Irwin, 2017) was enacted with a goal to ensure that prepared students did not face undue barriers to their educational goals and specifically, were not placed into remedial education unless they are highly unlikely to succeed in transfer-level coursework. Readers should reference the actual legislation to understand the goal and evaluate implementation success per the intent of the legislature, and the needs of their local student populations and communities.

The implementation guidelines<sup>39</sup> stated, “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.” The data above from Data Mart concerning special populations indicates a need to re-examine practices and continue collaboration with the MMAP team. There are many variables to consider for optimizing student success.

Even if students are more likely to pass a transfer-level course by direct placement, it is still crucial that more than one variable, such GPA through 11<sup>th</sup> grade or junior year in high school be considered when evaluating and optimizing (maximizing) student success, such as the

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<sup>38</sup> Ran, F. X., & Lin, Y. (2019). *The effects of corequisite remediation: Evidence from a statewide reform in Tennessee* (CCRC Working Paper No. 115). Community College Research Center, Teachers College, Columbia University. <https://ccrc.tc.columbia.edu/media/k2/attachments/effects-corequisite-remediation-tennessee.pdf>

<sup>39</sup> Memo A19-19 AB 705 Implementation Guidelines <https://static1.squarespace.com/static/5a565796692ebefb3ec5526e/t/5b6ccfc46d2a73e48620d759/1533857732982/07.18+AB+705+Implementation+Memorandum.pdf.pdf>

likelihood that a student will actually successfully complete the course, and if the student is unsuccessful, the chances that the student will persist, to name just a couple.

The Public Policy Institute of California considered transfer level placement implementation data, pre-AB 705 at some CCC's (Oct 2019)<sup>40</sup>. Their findings included higher percentages of placement into transfer-level English and mathematics, broadening access to transfer-level courses and resulting in more students completing in one semester. They found course success numbers increased, yet equity gaps remained and that students with co-requisite support had higher completion rates than in traditional courses. 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.”

The California community colleges through their Guided Pathways frameworks, are working to “meet the students where they (the students) are”. 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. And, more students are accruing unsuccessful attempts in those transfer-level courses, 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, there is support and momentum in the California community college system 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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<sup>40</sup> What Happens When Colleges Broaden Access to Transfer-Level Courses? Evidence from California's Community Colleges: <https://www.ppic.org/publication/what-happens-when-colleges-broaden-access-to-transfer-level-courses-evidence-from-californias-community-colleges/>

## 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 CCCCO: Datamart)

Characteristic	Fall 2016	Fall 2019
<b>Part-time (less than 12 units)</b>	68.3%	67.8%
<b>Part-time (less than 15 units)</b>	91.1%	89.8%
<b>Ethnicity</b>		
<b>African-American</b>	5.87 %	5.37 %
<b>American Indian/Alaskan Native</b>	0.43 %	0.35 %
<b>Asian</b>	10.83 %	10.83 %
<b>Filipino</b>	2.88 %	2.65 %
<b>Hispanic</b>	45.01 %	47.30 %
<b>Multi-Ethnicity</b>	3.76 %	3.76 %
<b>Pacific Islander</b>	0.41 %	0.40 %
<b>Unknown</b>	4.35 %	5.93 %
<b>White Non-Hispanic</b>	26.47 %	23.41 %
<b>Special Populations</b>		
<b>CalWORKs</b>	1.3%	0.9%
<b>DSPS (Disabled Students Program &amp; Services)</b>	5.8%	6%
<b>EOPS</b>	4.8%	5%
<b>Foster Youth</b>	1.2%	1.2%
<b>First Generation</b>	28.2%	31.8%
<b>Incarcerated</b>	.48%	.81%
<b>Veteran</b>	2.1%	2%
<b>Enrollment status</b>		
<b>First-Time Student</b>	17.27 %	15.91 %
<b>First-Time Transfer Student</b>	7.75 %	7.00 %
<b>Returning Student</b>	10.98 %	10.92 %
<b>Continuing Student</b>	57.20 %	55.74 %
<b>Uncollected/Unreported</b>	2.87 %	3.82 %
<b>Special Admit Student</b>	3.93 %	6.61 %
<b>Previous Education</b>		
<b>Received College Degree</b>	9.4% (62.7% bachelor's degree; 37.3% AA)	10.6% (64% Bachelor's degree; 36% AA)
<b>High School Graduate w/o college degree</b>	81.2%	76.7%
<b>Foreign Secondary School Degree</b>	4.2%	3.9%
<b>Passed GED</b>	4.3%	3.3%
<b>Received CA HS proficiency</b>	1.6%	1.1%
<b>Not a HS graduate</b>	2%	1.78%
<b>Special Admit – currently in HS</b>	4.2%	7.2%
<b>Ages</b>		
<b>19 years old or Less</b>	26.67 %	30.55 %
<b>20 to 24</b>	32.70 %	29.34 %
<b>25 to 29</b>	13.56 %	12.80 %
<b>30 to 34</b>	7.37 %	7.43 %
<b>35 to 39</b>	4.94 %	5.07 %
<b>40 to 49</b>	6.49 %	6.37 %
<b>50 +</b>	8.25 %	8.43 %
<b>Day/Evening enrollment</b>		
<b>Day</b>	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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RP Group AB 705 Research and Analysis Ideas for Collaboration between Researchers and Faculty, January 2020

[https://rpgroup.org/Portals/0/Documents/Projects/MultipleMeasures/Publications/AB705\\_Faculty\\_IR\\_Collaboration\\_FINAL.pdf?ver=2020-01-16-073919-530](https://rpgroup.org/Portals/0/Documents/Projects/MultipleMeasures/Publications/AB705_Faculty_IR_Collaboration_FINAL.pdf?ver=2020-01-16-073919-530)

RP Group Validating Placement

<https://rpgroup.org/Portals/0/Documents/Projects/MultipleMeasures/Presentations/ValidatingPlacementSystems.pdf>

UC Transfer Data from California Community Colleges UCOP

<https://admission.universityofcalifornia.edu/counselors/files/uc-transfer-application-data.pdf>

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