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The Relationship Between Equity Funding Levels and Success of African American Students at California Community Colleges

A Dissertation by

Yulian Ligioso

University of Massachusetts Global

Irvine, California

School of Education

Submitted in partial fulfillment of the requirements for the degree of

Doctor of Education in Organizational Leadership

September 2022

Committee in charge:

Phillip Pendley, Ed.D., Committee Chair

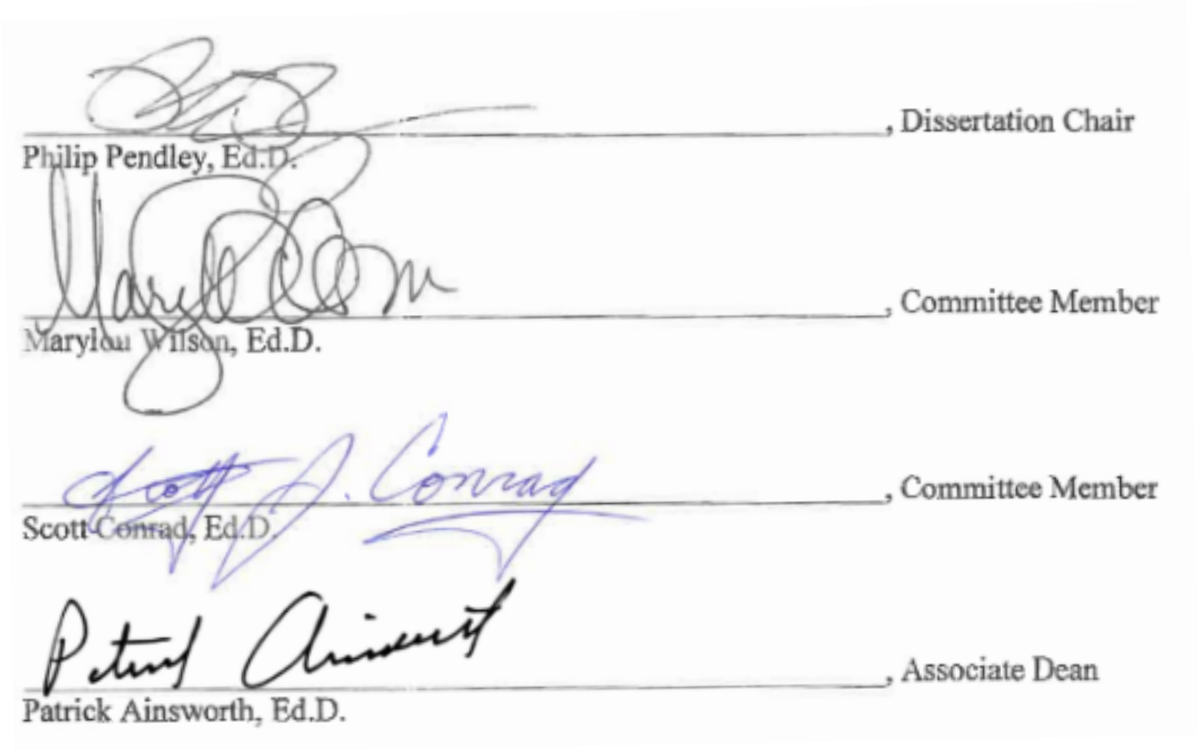
Marylou Wilson, Ed.D.

Scott Conrad, Ed.D.

UNIVERSITY OF MASSACHUSETTS GLOBAL

Doctor of Education in Organizational Leadership

The dissertation of Yulian Ligioso is approved.



September 2022

The Relationship Between Equity Funding Levels and Success of African American Students at California Community Colleges

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ABSTRACT

The Relationship Between Equity Funding Levels and Success of African American Students at California Community Colleges

by Yulian Ligioso

Purpose. The purpose of this quantitative study was to determine what relationship exists between equity fund spending and the student success measures of graduation rates, associate degrees and certificates awarded, and transfers completed by African American students in single college community college districts in California.

Methodology. This study employed a quantitative research design using archival data. Correlation and regression analysis was performed to determine the relationship between funding and student success outcomes. The study population was the California community college (CCC) system, and the sample was 49 single college districts.

Findings: As expected, funding was positively correlated with total number of students, including the number of African American students. In some years, funding also correlated to success measures, although the strongest correlation existed between the number of African American students and the number of degrees and certificates awarded to African American students. Similar results were found for the regression analysis.

Conclusions: The data revealed relationships between funding and total student enrollment, as well as between the number of African American students and success metrics for African American students. As expected, the number of success metrics attained by African American students increased with the number of African American pupils. This was supported by the regression analysis, which revealed the number of African American students was the most significant predictor of African American

students' degrees, certificates, and transfers. Funding, however, did not provide significant forecasts of student success.

Recommendations: Institutions should evaluate the outcomes of each state-funded activity in light of student group needs to determine the success of each activity. These activities must cover the social, emotional, economic, and psychological aspects of each group and extend beyond on-campus activities. Also, as the number of enrolled African American students had the strongest association to their success, funding should be allocated for outreach and recruitment of African American students. Efforts to increase the number of African American students enrolled in a school should be coupled with a greater emphasis on educating faculty in culturally relevant pedagogy to further improve outcomes.

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CHAPTER I: INTRODUCTION

Education is the foundation to individual and societal development, yet around the world, millions of children lack access to education. Although the global number of out-of-school children and youth declined from 192 million to 122 million from 2000 to 2011, the trend began to reverse (UNESCO Institute for Statistics, 2015). Only two years later in 2013, the number of children and youth not enrolled in school was on the rise, approaching 124 million (UNESCO Institute for Statistics, 2015). This lack of access to schooling extends to higher education, which varied widely around the globe. As college and university access became widespread, researchers agreed access to higher education remains a privilege reserved for a few (Gomes, 2007; Maoláin, 2013).

Arne Duncan, former U.S. Secretary of Education, indicated the nation's higher education system was unable to satisfy the needs of many students despite higher education becoming more widely available and an increased number of students graduating from college (U.S. Department of Education [ED], 2015). Duncan stated a tertiary education system optimizing student success was crucial to a nation's economic strength. This delivery letdown is driven by high costs and prolonged times to completion and elicits questions about academic degrees relevant to providing entry to a meaningful career (ED, 2015). However, it is widely accepted that higher levels of educational accomplishment created pathways to better jobs and earnings, a belief supported by U.S. Census statistics showing a strong correlation between educational attainment levels and earnings potential (Julian, 2012; Julian & Kominski, 2011; U.S. Census Bureau, 2000, 2010). Many students intent on pursuing a college education look

to community colleges, which provide the greatest access to higher education throughout the nation.

With college graduation rates on the rise, it became increasingly difficult for institutions of higher education to meet the needs of a population rapidly becoming more diverse, as evidenced by the achievement gaps between students of color and their Caucasian counterparts. The disparity in educational outcomes of historically underserved groups was studied extensively and findings led to many initiatives designed to narrow the achievement gap. Despite numerous examples of success stories, the struggle to close the achievement gap continues (Bensimon, 2005; Billig, Jaime, Abrams, Fitzpatrick, & Kendrick, 2005).

Background

The California community colleges (CCC) system is the nation's largest system of higher education, comprised of 116 colleges providing instruction to 1.8 million students (California Community Colleges Chancellor's Office [CCCCO], n.d.-b). The CCC system accounts for nearly 25% of all community college students in the U.S. (CCCCO, n.d.-b). As such, it provides the greatest access to higher education, offering associate degrees, transfer degrees, job training, and certicates in more than 175 different fields. Although the CCC system provides remarkable opportunities and pathways for students to reach their educational goals, the California Legislature for many years expressed concerns about low completion rates. The California Community Colleges Student Success Task Force (2012) reported:

- 53.6% of students achieve a certificate, degree, or transfer preparation, with 42% for African-American and 43% for Latino students

- 46.2% of students who enter one level below transfer level in math achieve a certificate, degree, or transfer preparation
- 41% of students transfer to a four-year university, with 34% for African Americans and 31% for Latinos students

In response to bleak completion rates, the Legislature directed the Board of Governors (BOG), the CCC's governing body, to develop and implement a strategy to improve student achievement (M. Taylor, 2014). This led to the formation of the Student Success Task Force a year later, a group that worked with state and national experts to improve educational outcomes and better prepare students for the workforce. In 2012, the BOG adopted the eight Task Force recommendations for implementation to improve student success. Senate Bill (SB) 1456, commonly known as the Student Success Act (SSA) of 2012, was passed as a result of this effort. This Act established the Student Success and Support Program (SSSP), which provides a variety of intake and guidance services to kids in order to detect and close access and achievement disparities among students from different demographic groups (M. Taylor, 2014).

Student Success and Support Program

As an outgrowth of the SSA of 2012, the state recast the Matriculation Program to SSSP. Although the former provided support services to assist students in setting and achieving an educational objective, the latter required students to complete assessment and placement exams, orientation, and education planning before they could enroll (M. Taylor, 2016). Core services remained the same, with an emphasis on assessment and placement, new student orientation, counseling, educational planning, and at-risk follow-up services intended to assist students achieve greater persistence and success in school.

Bolstering support services to advance successful results for community college students was supported by a modest body of research (Cooper, 2010).

As a result of SSA, funding changed from being based on enrollments to being based on services provided. SSSP became a performance-based grant, although the literature is divided. Performance measurement and funding in higher education had a long history where funding showed institutional stimulation to policies and practices to improve student outcomes (Dougherty et al., 2014). Critics argued traditional methods of assessing student outcomes were inadequate and such initiatives had not led to changes in institutional practices or effectiveness (Hayward, Jones, McGuinness, & Timar, 2004; Moore, Offenstein, & Shulock, 2011; Moore & Shulock, 2010; Shulock, 2011).

Performance-Based Funding

With overall declining graduation rates and increasing demands for more college-educated workers, the CCC system focus on access and enrollments was accompanied by an emphasis on completion. California, as with many other states, allocates community college funding based on enrollments; however, social and political climate demands to improved student outcomes set the stage for states to once again looking at performance-based funding (PBF; Miao, 2012; Shulock, 2011; Tschechtelin, 2011). However, M. F. Smith (2015) noted impediments to PBF include:

- Inconsistent student populations
- Limited performance measures
- Limited institutional capacity
- Limited state funding
- Limited knowledge and understanding of PBF

Shulock (2011) expressed PBF also compromised the open-access mission of community colleges because a focus on students likely to succeed could potentially discourage marginal students from enrolling. Addtionally, other aspects of student success, such as increased wages or improved skills, were not always measurable. Whereas PBF previously faltered and was abandoned, this new wave, sometimes labled PBF 2.0, found some successes. For example, in Pennsylvania graduation rates increased by 10% and persistence among Latino students increased 15% (Shulock, 2011). Although impressive, the approach's relatively short duration called into question long-term effectiveness, which has yet to be examined.

In PBF environments, completion priorities could overshadow access and the underrepresented and underserved student populations would be particularly vulnerable to dropping out or never enrolling (Cooper, 2010). This population includes immigrants, first-generation college students, and those from lower socioeconomic backgrounds. Success outcomes for underserved populations were low, particularly compared to students prepared for college (CCCCO, 2016). Moore et al. (2011) noted Calfornia's prosperity depends on closing performance gaps and advocated that doing so must become a state priority.

Addressing the Equity Gap

Low tuition and public subsidies from state and/or local taxes helped broaden access to community colleges, which historically allowed them to attract populations traditionally underrepresented in higher education– minoroty, part-time, first-generation, low income, and older students. However, Nelson and Braneman (1981) noted the commitment to equality of educational opportunities was lagging.

The introduction of enrollment fees for the CCCs in 1984 resulted in a precipitous decline in minority enrollments. Thus, the BOG and its Board Committee on Equity and Diversity crafted policies emphasizing transfer and retention of underpresented students, including those who were English language learners, needed basic skill instruction, and were interested in occupational programs (Guichard, 1992). The Extended Opportunity Programs and Services, policy statements encouraging equal access for women, the Disabled Student Programs and Services, the Cooperative Agency Resources for Education, and various matriculation programs constituted the early student services and special programs designed to improve student equity, access, retention, and persistence among students, as well as overall achievement and completion (Guichard, 2000; Scott-Skillman, 1992). In 1992, the BOG built on those existing programs and adopted a policy on student equity for CCCs intended to broaden access for success and transfer for historically underrepresented groups. This included developing student equity indicators to help colleges identify issues of equity and update goals accordingly (Guichard, 2000). This work assisted the Legislature in establishing a context for future higher education efforts and eventually led to the development of the Student Success Task Force in 2011. The Task Force in turn helped develop the SSSP and the Student Equity Plan, which included assessing district plans and their progress.

Student Equity Plan

To help close the achievement gap for underrepresented and often underserved community college student populations, the student equity plans (SEP) focused on increasing access, course completion, ESL and basic skills completion, and degrees or certificates awarded (CCCCO, 2012) These areas were measured by indicators linked to

the CCC Student Success Scorecard and other measures developed in consultation with local colleges. The SEP built on Title V of the California Code of Regulations, which identified underrepresented groups to include: American Indians or Alaskan natives, Asians or Pacific Islanders, Blacks, Hispanics, Whites, men, women, and persons with disabilities. SB860 then added requirements to address foster youth, veterans, and low income students. Success indicators are used to identify and measure areas for which the student populations may be impacted by issues of equal opportunity (CCCCO, 2012).

In looking at the SEP goals, the first one of access is largely driven by economics and although CCCs provide the greatest pathway to higher education, getting in the door and staying represent ongoing challenges. Thus, financial advising and funding are required to help alleviate these barriers. Without such financial assistance to help defray increases in tuition and costs of learning materials, college would not be an option for many low-income students (Johnson, 2014). Educational and governmental leaders as well as the legislature agree and the Obama administration made significant investments in this area to improve access (Camera, 2016).

Although these policies and procedures to close gaps and increase completion are encouraging, the work continues. Data from ED (as cited by Lynch, 2016) indicated a large difference remained in the achievement of Caucasian students from higher socioeconomic backgrounds compared to minority students and those from lower socioeconomic backgrounds.

Statement of the Research Problem

Although California is experiencing a rapidly growing and diverse population, the proportion of students enrolling in and graduating from CCCs does not mirror the state's

demographics (Freeling, 2015; Wells, 2008). CCCs are important in terms of providing access to higher education but are not without flaws. When it comes to course completion, degrees, certificates, and transfers to four-year universities, the CCCs still have a significant achievement gap (Bensimon, 2005; Bensimon, Hao, & Tomas-Bustillos, 2003; Billig et al., 2005; Darling-Hammond & Sutcher, 2016). California and the U.S. overall continue to struggle with this inequality in educational outcomes of historically underserved populations (Bensimon, 2005; Billig et al., 2005; Chavez, 1997). For example, 2000 to 2011, the disparity in academic performance between African American and Caucasian learners holding bachelor's degrees only narrowed by one percentage point (Camera, 2016; Frey, 2013). As underserved students are anticipated to be the primary driver of the new economy (Luster, 2010), more concerted efforts must be undertaken to close achievement gap.

Although throwing more money at a problem was counter to conventional wisdom, economists Kirabo-Jackson, Johnson, and Persico (2015) suggested for public education that was not the case. Supporting that notion, New York Governor Andrew Cuomo (as cited by Ehrenfreund, 2015), stated, "It ain't about the money. It's about how you spend it — and the results." Thus, the prevailing social and political climate demanding improved student outcomes set the stage for states to increase funding, and more specifically PBF, to address the achievement gap. PBF places emphasizes shifting from strictly inputs or enrollments to outcomes. Opinions on the effectiveness of PBF remain mixed. Cooper (2010) argued an institution's focus on completion could emphasize support for students deemed potentially successful while marginalizing services to populations community colleges were trying to better serve. C. P. Smith

(2015) agreed one unintended consequence of implementing PBF was decreased access, whereas Hillman (2016) contended PBF consistently failed in actual implementation. Miao (2012) on the other hand chronicled the development of PBF in several states and found in Pennsylvania that Hispanic students in public schools showed an increase of 10% for graduation rates and 15% for grade retention. Miao (2012) also highlighted Washington State, where college achievement increased by an average of 31%.

A more specialized form of PBF was adopted and codified by the California Legislature in 2012 via SB1456, which created the SSSP and Equity Programs and outlined a comprehensive plan for improving student success (Heiman & Metxker, 2016). Additional funding was provided via SB1456 to implement and support those programs, which included increased requirements for students to complete assessments, orientation, and education planning, as well as identification of how course offerings aligned with student educational goals. Equity Funds (allocated based on annual fulltime equivalent students, high need students, educational attainment, foster youth, participation, poverty, and unemployment rates of the college's service area) further attempted to improve completion of courses, basic skills training, associate degrees, certificates, and transfers (Heiman & Metxker, 2016).

Studies on the CCC system examined the impact of PBF, including assessments of obstacles and unintended consequences (Acfalle, 2015) and whether practices effectively met the goals of student equity (Luster, 2010). Also studied was the relationship between student services, Pell Grant funding, and completion rates at CCCs (Racioppi, 2014). However, limited research was conducted to analyze the impact of quasi-PBF policies, such as SSSP and Equity Programs, on student outcomes at CCCs,

including the relationship of funding on completion and graduation rates (Acfalle, 2015; Racioppi, 2014).

Purpose Statement

The purpose of this quantitative correlational study was to determine what relationship exists between equity fund spending and the student success measures of graduation rates, associate degrees and certificates awarded, and transfers completed in single college community college districts for African American students in California.

Research Questions

The following research questions guided this study:

1. What relationship exists between Equity Funds spending and associate degrees and certificates awarded for African American students?
2. What relationship exists between Equity Funds spending and transfers completed for African American students?

Significance of the Problem

This study examined PBF targeted to close the achievement gap in higher education, specifically for African American students. The African American student population was selected because these students had the lowest levels for completing transfer-level math and English courses compared to other race/ethnic groups. Among the 2019-20 cohort of a four-year longitudinal study, the CCCCO LaunchBoard showed an 8% success rate for African American and American Indian/Native American students, which were the lowest within the study (CCCCO, n.d.-a). As more data are available for African American students than American Indian/Native American students, the former group was selected for this study. By investigating the impact of PBF on

African American student outcomes in the CCC system, the study aimed to explore PBF policies on success rates. Specifically, the study assessed the relationship of Equity Funding on student completion, degrees, certificates, and transfers rates.

The California Legislature and the BOG could use the findings of this study to enhance public education policy. Specifically, results could inform funding levels and allocation benchmarks to enhance efforts to close the achievement gap. The data could also serve to leverage various state funding sources and approaches to better assist the state's underrepresented and underserved college student populations.

College administrators could use the study's conclusions to improve student success initiatives and activities funded through Equity Funds. Thus, the study's findings could influence student support interventions, such as advising, tutoring, counseling, and education planning, and also shape academic curricula in strengthening the desired success outcomes. As an added extension, the information could also serve college districts in streamlining student success resources with other categorical funding and career pathway grants to better address initiatives to serve its students and close the achievement gap.

Definitions

Associates degrees. It is necessary to complete 60 semester units to get an associate degree in arts (AA) or associate degree in science (AS). These units must be completed in a general education pattern consisting of 21 units in the specified major, 18 units in general education, and 21 units of electives.

Certificate of achievement. A certificate of achievement is offered for attaining a certain number of unit credits within a program and are grouped into two choices: B with 12-18 semester credits or C with more than 18 semester credits.

Completion. A student earning a certificate, two-year degree, or ready to transfer to a four-year institution; this is expressed as a completion rate based on total enrollment.

Equity Funds. In response to the SSSP, a program which financing is conditional on the development and adoption of a student equity plan to promote achievement for all students regardless of color, gender, age, disability, foster youth or veteran status, or economic circumstances.

Full-time Equivalent Students (FTES). Students in the CCC system do not always attend full-time as many are also working or supporting families. Thus, community colleges are funded by FTES as this indicates more accurately the workload of the students; for 2017-18, this workload measure was funded at $5,151.24 per credit FTE and $3,097.58 per non-credit FTE (CCCCO Fiscal Services, 2017).

Performance-Based Funding. PBF's funding structure incorporates both enrollment and performance metrics as incentives for colleges to continue to make progress on these objectives. Instead of allocating funding based solely on enrollment, a portion of a state's higher education budget is allocated according to specific performance measures such as course completion, credit attainment, and degree completion; this funding structure incorporates both enrollment and performance metrics as incentives for colleges to make progress on these objectives (Miao, 2012).

Transfer. The completion of a certain number of community college credits that allows the student to transfer into a four-year university in junior-level standing with the intention of obtaining a baccalaureate degree.

Delimitations

The study focused on public two-year community college districts in California, ranging in size from small colleges with fewer than 10,000 FTES to large colleges with FTES greater than 20,000. Additionally, the study was delimited to single college community college districts governed by locally elected officials, as opposed to districts operating multiple community colleges. Further, the study was delimited to examine student success measures for minority students, specifically looking at educational performance of African American students within the California community colleges.

Organization of the Study

The study is presented in five chapters. Chapter I introduced the study topic, background, purpose, definitions, and delimitations. Chapter II is a review of literature of educational outcomes and funding in the CCC system to find gaps in the literature. Chapter III presented the study methodology, including a study overview, participants, and sampling approaches. The findings and results of the analysis are found in Chapter IV. Finally, Chapter V reports recommendations for future research and conclusions.

CHAPTER II: REVIEW OF THE LITERATURE

Chapter II presents a review of literature pertinent to the study. It briefly reviews higher education enrollment trends worldwide, then provides a synopsis of student success initiatives in the California community college (CCC) system, examining access to higher education and student success metrics as measured by degree or certificate completion. As public and legislative demands for improved education outcomes heightened, this chapter reviews performance-based funding (PBF) to improve participation, completion, and accountability in CCCs.

Higher Education Worldwide

Access to Higher Education

In the past, few higher education institutions existed, most being in monasteries with the nucleus of education revolving around religion and training clergy (Roser & Esteban, 2020). Over time, access to education broadened, although it seemed to favor the more affluent. Low socioeconomic conditions affect education; teaching children regardless of where they come from is one of the biggest steps society can take toward ending extreme poverty (Giovetti, 2020). Multilateral partnerships, such as the Global Partnership for Education, are devoted to getting children into schools for a quality education. To make this happen, they work with a diverse group of governments, non-governmental and international organizations, the private sector, and teachers (Humme, 2012).

Socioeconomic disparity affects educational attainment (American Psychological Association, 2017). As enrollments in postsecondary education around the globe doubled between 2000 and 2014, in affluent nations 3 of 4 young adults enrolled in college

compared to 1 of 12 in poorer countries. Additionally, income levels impacted the length of time students stayed in school (K. R. Taylor, 2017). Twenty percent of the wealthiest students attended college for more than four years, compared to only 1% of students in the poorest nations. Further, minority groups and women in many parts of the world often fare worse in their ability to achieve higher educational outcomes than other populations (Bohanon, 2017). Although a basic education in the United States is a right as codified in Section 29 of the Constitution, higher education remains a privilege (Moola, 2015).

Privilege continues to provide many advantages where families of means are in a position to groom their children even as early as elementary school to be the most competitive college applicants (Leiva, 2019). In high school, such preparation includes involvement in student government, participation on the debate team, and playing varsity sports. Academic support by private tutors leads to improved grades and carefully edited personal essays to strengthen college applications. Legacy applicants have even more of a leg up (Leiva, 2019). Elite institutions are taking steps to broaden the diversity of their student groups, both in terms of race and economic background, to offset this tendency. Most elite universities made commitments in recent years, including financial aid, recruitment initiatives, and programs for high school students geared at increasing the number of low-income students enrolled (Nadworny, 2019).

Over the course of the last two centuries, global literacy rates increased, primarily because of rising rates of enrollment in elementary school. Secondary and tertiary education also experienced significant expansion, although countries in sub-Saharan Africa lag significantly (Darvas, 2017). A 2020 UNESCO IESALC study examining

higher education enrollments from 2000 through 2018 showed gross enrollment rates worldwide nearly doubling from 19% to 38% (Vieira, Mutize, & Roser Chinchilla, 2020). The study highlighted regional disparities with Southeast Asia, Latin America, and the Caribbean increasing by 30 points; North Africa and West Asia by 25 points; Europe and North America by 22 points, Central and South Asia and the Pacific region by 17 points each, with sub-Saharan Africa only increasing by 5 points. The author noted gaps between enrollment and graduation rates, cautioning countries to pay attention to drop-out rates and completion rates in higher education (Vieira et al., 2020). Despite literacy being a critical skill and indicator of a population's education, certain countries in sub-Saharan Africa still have literacy rates below 50% (Roser & Esteban, 2020). However, in recent years education in sub-Saharan Africa grew significantly and public universities expanded their capacity to help address increasing enrollments (Darvas, 2017).

Higher Education in the United States

A 2013 Princeton-Brookings study noted about 21 million individuals attending a post-secondary institution working toward a bachelor's degree or higher. Increased enrollments spawned public and private investments, greatly based on views this would lead to economic growth and minimize economic inequalities (Barrow, Brock, & Rouse, 2013; Giovetti, 2020). A multitude of factors determine how much money a person earns over the course of his or her career, but recent data revealed people with a bachelor's degree earn 50% more over the course of their careers than those with only a high school diploma (Barrow et al., 2013; Julian, 2012).

Circumstances such as race, ethnicity, and socioeconomic status impact one's ability to move up – children born into high-income families have twice the chance of

getting into the middle class or better in their adult life than those born into low-income families (Bailey & Dynarski, 2011; Sawhill, 2013). One way for children from lower economic strata to overcome poverty is a college education. Much growth and expansion of community colleges and other open access institutions, through public support by states and the Federal government, provided ways for lower income families to enter higher education (Barrow et al., 2013). Barrow et al. (2013) further noted improved access also translated into greater diversity of the college population, with increasing numbers of female, low-income, older, and minority students, as well as an increase in part-time students.

Community colleges are the foundation of the American higher education, enrolling nearly half of all college students and a majority of African American, indigenous, and people of color, as well as low-income, first-generation, and older students (Mintz, 2019). Community colleges offer academic and technical/vocational tracks with programs leading to associates degrees and certificates. They provide broad course offerings, are more affordable, have smaller classes sizes, ease the transfer to a four-year university, and provide for more job opportunities.

Despite greater access and improved state financing to support education, inequalities still exist in college completion and persistence (Bailey & Dynarski, 2011). The other side of the successful efforts to broaden access was many students enrolling but unprepared for the work (Barrow et al., 2013). That lack of preparation, combined with rising tuition, insufficient information available about, and demands of work and family, fueled a nearly 50% drop-out rate. Colleges recognized this and increased student aid, bolstered financial literacy, and fund remedial courses to help under-prepared students

succeed (Sawhill, 2013). To better meet the needs of growth and streamline offerings, California and other states systematized higher education.

California Higher Education System

The California Master Plan for Higher Education, established in 1960 with the passage of Senate Bill 33, called for a coherent system of postsecondary education that defined specific roles for the University of California (UC) system, the California State College system (now the California State University [CSU] system), and the California community colleges system (CCC). Clark Kerr, UC president from1958-1966, and one of the architects of the master plan, noted,

> Never before in the history of any state in the United States, or of any nation on the face of the planet, had a guarantee such as this been made: that every high school graduate or other qualified individual would be able to find a job waiting for them. (UC President's Office, 1999, p. 1)

Specifically, this master plan set the CCC's mission to deliver (1) standard collegiate courses for transfer to higher education institutions; (2) vocational and technical topics leading to employment; and (3) general or liberal arts coursework. Individuals who undertake studies in these fields may be eligible for the award of an associate in arts or an associate in science degree (UC President's Office, 1999).

Moving into the 21st century, college enrollments grew tremendously. The U.S. Department of Education (ED; 2015) estimated from 2000 to 2016, the number of undergraduate students increased 28% (from 13.2 million to 16.9 million). Part of this growth was attributed to the notion greater educational attainment led to better jobs and higher earnings (Julian, 2012; Julian & Kominski, 2011). However, Card (1998)

explained education plays a vital role in modern labor markets, which was pertinent during the transition to the 21st century. Thus, the growth trend is expected to continue with projected enrollment of 17.4 million by 2027 (ED, 2015).

As enrollments increased, an apparent achievement gap emerged, evidenced in the outcomes of African American, Latino, and other historically underrepresented students compared to their Caucasian counterparts (Bensimon et al., 2003; Camera, 2016; Darling-Hammond & Sutcher, 2016). Bensimon (2005) described inequitable outcomes for students of color as an urgent and intractable problem. Notwithstanding the improvements in college-going and completion rates of African American students over the past decade, a persistent achievement gap remains and is widening the graduation gap between African American and Caucasian students, particularly in California where African American students continue to be underrepresented in the public universities (Camera, 2016; Frey, 2013). This brought a heightened focus and emphasis to support underserved student populations and close the achievement gap (Billig et al., 2005; Johnson-McPhail, 2011).

Improving Student Success

Over the last 15 years, several initiatives to help students succeed emerged in the CCC system. In 2006, the College Opportunity Act, codified in SB1709, sought to renew California's commitment to provide a community college for every eligible student in the state, as originally outlined in the 1960 Master Plan for Higher Education. Although it was inteded to expand and extend college opportunities, this bill failed to garner sufficient votes to get out of committee.

Promoting student success requires a commitment to align financial aid incentives with characteristics of student success as an integral part of the completion agenda (Choroszy & Meek, 2020; O'Banion, 2011; Waiwaiole, 2017). As such, a year later in 2007, AB668 (the CCC Financial Aid Opportunity Act) was introduced to offer financial aid programs students could apply for to help with the cost of textbooks and living expenses, such as federal Pell grants, the Board of Governor's Fee Waiver, and CalGrant (Portantino, 2007). Ensuring students can pay for college, housing, food, and other basic needs, financial aid could broaden access and promote student success through encouraging persistence, degree completion, and financial literacy. This new law helped make college more affordable, particularly to low-income students, thus broadening access to those students who might otherwise be unable to attend college.

As economic conditions began to impact institutional budgets, higher education leaders were looking to improve retention and graduation rates by connecting college finances and academic performance as a key driver of student success (Klepfer, Cornett, Fletcher, & Webster, 2019). Linking up a combination of support services and financial resources helped students overcome many fiscal challenges college students encounter and showed measurable improvements in student success outcomes. Increasingly, college and universities are undertaking efforts to better understand that interplay of students' financial wellness to student success outcomes to help inform strategic planning and design programs (Klepfer et al., 2019). .

Klepfer et al. (2019) found a student debt crisis in community colleges. They reported 63% of community colleges students lacked sufficient funds in case of an emergency, 65% worried about paying for college, 23% were uncertain if they had funds

to pay for the next semester, 77% had run out of money at least once in the prior year, and 41% had borrowed money from family or friends. Additionally, 55% reported some level of food insecurity, 16% experienced homeless within the prior year, and 50% reported struggling to pay rent or utilities. The survey also asked instutional supprt and found 53% of students spoke to a financial aid advisor, 38% agreed their college was proactive in terms of financial aid planning, and 59% believed their college worked to make tuition more affordable (Klepfer et al., 2019).

The demand for financial assistance among students is increasing and research confirms financial aid helps students enroll and succeed in school (Campbell, Cochrane, Love, & Bruecker, 2017). College strategies implemented to address financial needs include providing clear information about the Federal Application for Student Aid (FAFSA) and guiding students through completing it so every eligible student applies. Waiwaiole (2017) noted connecting students to community and financial resources such as scholarships and public benefits such as nutrition assistance, transportation assistance, healthcare, and childcare was beneficial; however, he noted a need to reduce the stigma associated with obtaining such assistance. Lastly, it was necessary to ensure teachers and staff were aware of financial aid resources available to students in need and to educate students on financial literacy issues (Quinton, 2016; Waiwaiole, 2017).

In responding to increasing need of student financial support, several states offer scholarships and fee waivers to certain student populations, though the support often is not enough (Waiwaiole, 2017). Institutional efforts are being undertaken to raise student awareness of options and ensure students are taking advantage of available support with the ultimate goal being completion, as data showed a positive correlation between

completion and lower student loan defaults (McKibben, La Rocque, & Cochrane, 2014). However, students often leave college before completing a degree because of financial reasons, such as running out of monies due to unexpected expenditures; as such, colleges are further implementing emergency aid programs. Although student approaches to budgeting needs further exploration, colleges must also consider budgeting institutional financial resources and understand the impact of expenditure allocations for administrative, student support, and instructional activities on student success (El Fattal, 2014; Waiwaiole, 2017).

The CCCCO (n.d.-b) implemented the California College Promise Grant in 2008-09 (formerly known as the Board of Governor's Fee Waiver), which waives the enrollment fee provided students demonstrate financial need and maintain academic and progress standards. Additionally, many CCCs also adopted the college promise, which provides free tuition for two years irrespective of financial need if academic and progress standards are met.

Senate Bill 890 (Early Commitment to College Act) was passed by the California legislature in 2009, which secured college access and financial aid availability to students who signed a pledge to work hard, stay in school, and take all other actions necessary to make it to college. In addition to receiving widespread bipartisan support, this regulation, which is a voluntary program run by the Superintendent of Schools, also achieved widespread acceptance in the field. In accordance with Senate Bill 890 and to increase college readiness and enrollment rates for low-income students, the California Department of Education (CDE) collaborated with the California Education Round Table Intersegmental Coordinating Committee to develop a process for implementing Early

Commitment (Callas, 2020). The College Board (n.d.) endorsed the view that early choice and early action were beneficial to students, particularly if the student had thoroughly considered his or her college alternatives and narrowed it down to a desired institution before submitting their application.

The College Student Success Act of 2009, AB440, although held in committee and not passed, helped pave the way for the historic transfer reform efforts of SB1440 and AB2302 signed into law in 2010. Prior to this legislation, transfer students were not awarded an associate degree, leaving those who stopped their education with little to show for their work, limiting their marketability. This law was created to ensure students who successfully completed the general education transfer requirements to a four-year university with a minimum of 60 semester units received an associate of arts degree in transfer studies in recognition of their efforts.

AB2542, also referred to as Accelerated Student Success College of 2010, proposed to improve completion rates via increased local flexibility with funding, the beginnings of trying to tie performance to funding. The bill planned to award funding based on completion rather than students in seats in the third week of school or census. A further incentive of $1,000 per student was provided for those who completed an associate degree or certificate. However, this bill was held in committee and not passed.

Later in September 2010, Governor Schwarzenegger signed AB2302 into law, thereby establishing the Statewide Transfer Pathway Act (Fong, 2010). Specifically, it sought to strengthen the transfer mechanism established by SB1440. This bill proposed the UC system participate in the transfer reform campaign spearheaded by SB1440 by ensuring community college students pursuing an associate degree for transfer are

admitted to the UC system with junior status. Also confirmed was such transfers are efficient, student-centered, and do not prejudice students currently enrolled in a community college program, as mandated by the federal government (Fong, 2010).

Two years later in 2012, Governor Brown signed into law SB1456, the Student Success Act. This bill enacted key recommendations of the Student Success Task Force. It provided support services to students on the front-end of their educational experience by establishing policies to ensure all students receive orientation, create an education plan, and declare a program of study; the bill targeted student success and support funds for matriculation services to helping students progress toward their college goals and required campuses to participate in a common assessment and scorecard system as a condition for receiving student success categorical funding. This bill also aligned fee waiver requirements more closely with federal aid standards and authorized the BOG to define satisfactory academic progress and develop policies that provide statewide guidance to colleges on implementing an intervention and appeals process.

In 2014, SB1425 (the Degree Audit and Retroactive Awarding of Degrees Act) was authored but held in committee. This legislation would require CCCs to make a degree audit system available to students, college counselors, and other support staff to enable students to monitor progress toward completion of a certificate or degree, or for transfer to a CSU or UC. This bill would additionally require community college districts to identify students who completed degree, certificate, or transfer requirements and retroactively provide the student with the appropriate award.

Student Success

Debate on what constitutes student success is plentiful and although it might seem simple on the surface, paths students take to enroll, persist through terms, then advance to degree completion are seldom straight forward (Kim, 2017). Kim (2017) defined five common metrics to gauge student success: retention rates, graduation rate, time to completion, academic performance, and tracking educational goals.

Retention is crucial to community colleges from multiple perspectives, including an institution's faculty and administration, the public, and the legislature. Retention highlights a college's success rate and ties into revenues (Kim, 2017; Wild & Ebbers, 2002). Retention helps an institution assess student academic progress, understand why students leave, and assess adequacy of resource with improved retention possibly translating into more funding (Kim, 2017). Although retention rates are a crucial measure, student success should be viewed in combination with multiple metrics.

Graduation rates are closely tied to retention. Yet, different ways exist to gauge graduation rates with the federal definition being the percentage of a school's first-time, first-year undergraduate students who complete their program within 150% of the published time for the program (Kim, 2017; Student Aid Commission, n.d.). For example, for a four-year degree program, entering students who complete within six years are counted as graduates.

Another metric, known as time to completion, measures the amount of time it takes a student to complete his or her desired degree. This metric can also be expressed in terms of total credit accumulation. With this indicator, colleges and universities can determine whether students are taking longer than usual to complete their degree

programs. By looking at this metric, colleges can detect extra courses taken, identify access barriers to core courses that may result in greater expenses to both students and the university, and identify wasteful use of available financing resources (Student Aid Commission, n.d.). Such findings inform policies and procedures to improve student success (Kim, 2017).

Academic progress and achievement are readily measured by a student's grade point average, class standing, and performance in core subjects (Kim, 2017). Achievement of learning objectives and development of skills and competences can be measured at the course, program, and institutional levels. These metrics also show persistence through terms and are predictive of overall success (Kim, 2017). Tracking educational goals is of great importance and a requirement for certain funding sources.

Student Success Frameworks

The CCC system, the nation's largest system of higher education, provides remarkable opportunities and pathways for students to reach their educational goals. However, the California Legislature for many years expressed concerns about the low completion rates among CCC students. Thus a variety of frameworks emerged to track student outcomes among CCC cohorts.

Cohort tracking for higher education outcomes began in the 1980s and is now common practice throughout education. A cohort is a group of individuals with similar characteristics. In higher education, cohorts are most often comprised of students who enter a college, program, or series of courses at the same time (CCCCO, n.d.-c). Evaluating students within or across cohorts allows one to gauge how various aspects of the college experience relate to progress and completion outcomes. In the CCC system,

cohort tracking began in 2002 with the Partnership for Excellence (PFE) program to measure transfer for accountability purposes (CCCCO, n.d.-c).

The use of cohorts carried over to the subsequent accountability framework, introduced through AB1417 in 2004. As designed and implemented by the CCCCO, this comprehensive system was known as the Accountability Reporting for the Community Colleges (ARCC). ARCC methodology included college measures, peer groups, and self-assessment, comprised of the following performance indicators:

- Student Progress & Achievement
- Completed 30 or More Units
- Fall to Fall Persistence
- Vocational Course Completion
- Basic Skills Course Completion
- Basic Skills Course Improvement
- English as a Second Language (ESL)

A report on each of the indicators was required under ARCC, as was a college profile (i.e., enrollment demographics), a comparison of performance with a peer group (i.e., schools in similar contexts), and a self-assessment by each institution.

Despite implementation of ARCC, CCC degree and transfer rates were still deemed too low and had to increase or face losing state budget funds. As such Governor Schwarzenegger in September 2010 signed into state law SB1143. This bill required the state to adopt a plan for promoting and improving student success within the CCC and establish a taskforce – the Student Success Task Force (SSTF) – to examine specified best practices and models for accomplishing student success. The bill further required

the SSTF to develop and present recomendations to the BOG for incorporation into the plan to improve student success and completion within the CCC.

The SSTF recommendations collapsed the seven cohort metrics of the ARCC framerwork into a four-tiered accountability framework – namely, the Scorecard (CCCCO, n.d.-b). This framework is presented in Table 1.

Table 1

Revised ARCC Framework Components

System	Purpose
State of the System	• System metrics, wage study and enrollment report • All scorecard metrics at the system level
Scorecard/ARCC 2.0	• College metrics, including single demographic • The accountability report includes these metrics
Datamart 2.0	• College metrics from the scorecard by multiple crosstabs, ability to drill down • Includes course completion rates and transfer data
Data on Demand	• College metrics from the scorecard as unitary files • Each college has access to own data

Each system is designed with a specific audience or user in mind, with the first providing a high level overview for legislators and policymakers summarizing a number of data aggregations and annual performance at the system level. The second level, the Scorecard itself, provides indicators of progress and completion at each of the colleges that are involved. It includes metrics related to momentum points and presents metrics dissagregated by racial and ethnic groupings, age, gender, and level of college preparedness. The third level provides the opportunity to drill down further into the Scorecard metrics through the existing online query tool, Datamart. The fourth and most detailed level (Data-on-Demand) allows college researchers to download the data underlying the Scorecard metrics for their particular college (CCCCO, 2012).

In their report to the legislature, the SSTF outlined eight recommendations:

- Increase college and career readiness
- Strengthen support for entering students
- Incentivize successful student behaviors
- Align course offerings to meet student needs
- Improve the education of basic skills students
- Revitalize and re-envision professional development
- Enable efficient statewide leadership & increase coordination among colleges
- Align resources with student success recommendations

Closing the Achievement Gap

The National Center for Education Statistics defined achievement gaps as the disparity in academic achievement between minority and disadvantaged students and their Caucasian counterparts, as well as educational discrepancies that can be traced back to unequal treatment of different groups of students. Despite progress in eradicating racial educational disparities since the Supreme Court's 1954 judgment in Brown v. Board of Education that racial segregation in public schools was unconstitutional, progress has been gradual, inconsistent, and imperfect (Stanford, n.d.). Achievement gaps are one of the most commonly used criteria for assessing educational equity.

Although the achievement gap among K-12 students halved between 1970 and 1988, progress paused in 1990 and since widened (Haycock, 2001). However, according to the National Assessment of Educational Progress (NAEP), which provides an objective measure of the math and reading skills of American children, achievement gaps in every grade and subject have been shrinking since the 1990s, according to the National Center

for Education Statistics. Nelson and Braneman (1981) noted this achievement gap decline as the lagging commitment to equality of educational opportunities. Although everybody wanted to take credit for narrowing the gap, nobody wanted to take responsibility for widening it, so progress languished (Haycock, 2001).

Although standardized assessments measure achievement gaps among K-12 students, such tests do not exist for college-level students. Rather, community colleges track enrollment rates for 18 to 24 year olds, entry to four-year institutions, financial aid, persistence, and completion (Ross & Kena, 2012). Additionally, many community colleges also examine reasons for leaving college without completing, remedial coursework required, academic and social integration, student employment, graduation rates and degrees conferred, and educational attainment and employment. These areas often show persistent gaps in educational attainment between Caucasian males and males from other racial and ethinic backgrounds, and evidence suggests a growing gender gap (Ross & Kena, 2012). Additionally, despite increases in college attendance and completion rates for disadvantaged students, particularly black students, African American students still have the lowest completion rates across all three higher education systems in California (Frey, 2013).

Contrary to what was previously written about student development, Bensimon (2005) contended the theory and process of organizational learning could assist researchers and practitioners in understanding and addressing structural and cultural obstacles preventing colleges and universities from providing an equitable educational. In her opinion, organizations could benefit from organizational learning because it allows the intangible and undiscussable to become discussable. For example, disaggregating

student outcome data by race and ethnicity is one of many factors they may help organizations improve interpreting situations (Bensimon, 2005). However, others argued equity needs to be a top-of-mind priority rather than an afterthought (Camera, 2016). For example, Boggs and Johnson-McPhail (2017) stated leadership preparation should include suitable policies and procedures, culturally relevant curricula and support services, and highly qualified faculty members. They anticipated this would aid in closing achievement gaps. Studying four comprehensive public high schools successful in closing the achievement gap, researchers looked at teaching and learning practices in curriculum areas, culture and school climate issues, leadership for change, and the change process (Billig et al., 2005). Boggs and Johnson-McPhail (2017) noted to help overcome some disconnects between college policies and procedures and student success, improved student engagement in and outside of class was needed by changing the institutional focus from access to completion and making smarter decisions about how to use available resources. Others cited the funding gap as a contentious issue impacting the achivement gap emphasizing quality of education (Azzam, 2005). Smaller institutional budgets generally mean small classes or better programs cannot be offered, thus seeing lower student achievement (American University School of Education, 2020). On the opposite side, literature on school spending and student outcomes showed sustained increases in per-pupil annual spending increased test scores (Kirabo, 2018).

An increasing body of evidence indicated greater expenditure on education and per-pupil spending are positively associated with improved student outcomes, despite the fact monies must be spent properly to reap the benefits of increased spending (Baker, 2017). While acknowledging money alone is not the solution to all educational

problems, Baker (2017) stated "more equitable and appropriate allocation of financial inputs to schools" is an underlying condition for increasing the equity and adequateness of outcomes (p. vii). In addition, more money called for greater accountability and expectations schools raise achievement for all students with funding tied to performance.

Performance-Based Funding

Over the last 50 years, jobs requiring college diplomas or certificates have more than doubled, driving considerable enrollment growth in two- and four-year institutions. Despite increased matriculation, graduation rates remained low and too deficient to meet employer needs (Altstadt, 2012). This is marshalling national and state efforts to improve college completion. However, contracting budgets coupled with competing resource demands is prompting the public's desire for prudent spending and greater institutional accountability (Miao, 2012; Zarkesh & Beas, 2004).

For several decades, policymakers voiced concerns and a need to improve higher education performance in light of strained state finances and the increasing importance of higher education to economic development (Dougherty & Natow, 2015). One approach state government employed to improve higher education outcomes was to link resource allocation to performance through performance-based funding (PBF). Although funding was previously based on enrollments to broaden college access, allocations began to shift to specific performance because enrollments were poor predictors of institutional effectiveness. Increasingly course completion and degree/certificate completion began influencing funding allocations instead of allocations based solely on enrollments (Miao, 2012; Zarkesh & Beas, 2004). This change in funding methodology incentivized both college access and completion.

PBF was first implemented in Tennessee, followed by nearly three dozen states. Under PBF, resouce allocations are tied to an institution's performance on student outcomes such as persistence, completion, degrees awarded, and job placement (Dougherty & Reddy, 2013). Thus, PBF was a popular means of measuring institutional effectiveness in higher education and moving toward greater accountability (Zarkesh & Beas, 2004). Accountability measures, essentially reassurance of well-spent tax dollars, even received support from some public college officials who saw PBF as a way to garner additional funding for higher education (Schmidt, 1996).

This focus on accountability drew both supporters and critics with the former contending PBF will increase institutional effectiveness whereas the latter claimed it unnecessarily burdened institutions and success was not guaranteed (McKinney & Hagedorn, 2017; Zarkesh & Beas, 2004). This was echoed by Dougherty and Reedy (2013) who posited PBF fueled policies and practices for better student outcomes, yet it was unclear whether it improved student outcomes and avoid harmful side effects. As a result of PBF, some universities may increasingly focus on students more likely to succeed, potentially coaching marginal prospects away from enrolling (McKinney & Hagedorn, 2017; Shulock, 2011). With PBF, institutions serving a higher proportion of at-risk students may find themselves losing funds, making it even more difficult to improve student outcomes (Bailey & Morest, 2006; McKinney & Hagedorn, 2017). Zarkesh and Beas (2004) noted ill-designed incentive formulas led to the abandonment of many initial PDF systems because efforts failed to produce the intended results. Of the 26 states implementing performance metrics into funding formulas between 1979 and

2007, the majority eventually discontinued them (Dougherty & Natow, 2015; Miao, 2012).

After the first wave of ineffective models, PBF acceptance began to surge again as several states instituted PBF 2.0, incorporating it into funding mechanisms in the 2010s (Dougherty & Natow, 2015). PBF 2.0 metrics considered institutional structure and mission, which helped produced more desirable outcomes for community colleges. PBF 2.0 metrics included enrollment, retention, and time to completion or transfer. However, like its predecessor, PBF 2.0 also had the potential to create unintended consequences for institutions, particularly open access community colleges (Smith, 2015). Smith (2015) noted several studies found accountability policies favored students closer to the passing threshold at the expense of other students and said college leadership collaborating with their constituent groups in developing and implementing mission and student-driven metrics could make strides in optimizing desirable outcomes while minimizing undesirable ones. Another PBF critic, Nicholas Hillman (2016), asserted pay-for-performance was a powerful concept, but was proven unsuccessful in yielding positive results in actual implementation. Despite the skepticism of PBF, many states continued to support this policy as a way to hold colleges accountable in terms of closing the achievement gap (Hu, 2019). For example, California embraced accountability policies in its implementation of student equity funds.

Student Equity Funds

Mónica Henestroza, Special Advisor to Assembly Speaker Toni Atkins, requested the Center for Urban Education draft a student equality plan (SEP) summary in 2015.

The summary provided a brief historical background and development of the SEP (Table 2).

Table 2

Student Equity Plan Timeline 1985-2014

Year	Activity
1985	The CCC Board of Governors (BOG) symposium—Enrollment, Retention, and Transfer of Minority Students—was held
1989	BOG establishes Board Committee on Equity and Diversity
1991	California Legislature requires public institutions of higher education provide educationally equitable environments regardless of ethnic origin, race, gender, age, disability, or economic circumstance
1992	BOG introduces Student Equity Policy
1996	BOG makes state funding contingent on having an SEP
2002	BOG requires community colleges to develop SEPs
2005	BOG requires community colleges to update and complete SEPs
2008	BOG suspends SEP requirement
2010	Academic Senate of the California Community Colleges (ASCCC) releases updated guidelines for developing SEPs
2011	BOG creates Student Success Task Force (SSTF)
2012	Student Success Act of 2012 (SB 1456) passes; requires coordination of Student Success and Support Program and SEPs
2013	California Community College Chancellor's Office (CCCCO) convenes Student Equity Workgroup
2014	CCCCO releases revised SEP guidelines and Governor's 2014-2015 budget provides $70 million to support SEPs

Note. Source: Center for Urban Education (2015)

Student equity funding was established in 2014 to offer equal educational opportunities and to promote student success regardless of race, gender, age, disability, or economic circumstances. Despite schools obligated to develop SEPs since 1996, this was the first-time state resources were available to support efforts to achieve plan goals. To assist colleges in reaching student success goals for all students, funding for the Student Success and Support Program was doubled.

Developments in student achievement are monitored and assessed to guide changes and restructure services to better meet the needs of students and close access and

achievement gaps among underrepresented student groups. In the Student Success Disparity Initiative, Title 5 (sections 54220 and 51026) defines student equity success indicators that must be measured, monitored, and remedied as needed, and SEPs are then integrated with the Student Success and Support Program (SSSP) plans. Title 5 requires colleges to review data related to access, course completion, ESL and basic skills completion, degree and certificate completion, and transfer rates.

California earmarked $70 million in 2014 to address inequities in access and success for underrepresented student groups as identified in local SEPs. In 2015, the Governor approved an additional $70 million for student equality financing to plan programs with fair educational opportunities and encourage student success regardless of color, gender, handicap, or economic circumstances. Students must achieve equal results on success indicators as compared to their own percentage of the community or college student population, or to other student groups, to achieve student equity (Noldon, 2015). In June 2014, the Governor and Legislature enacted new regulations (Education Code 78220 – 78221) identifying additional student populations that must be included in equity plans (Henestroza, 2015). At a minimum, colleges must reach out to students regardless of ethnic and racial groupings. In addition, SEPs must address students regardless of their gender, income level, or disability status. Further, plans must identify students classified as current or former foster youth or military personnel. Since 2012, the Student Success Act (SB1456), which enacted Section 78216 of the Education Code, obliged universities to collaborate with other equity-related programs and services. Additional requirements for coordination with other programs were imposed by the State Budget Act of 2014 (SB860).

Student Equity Plans

SB860 is extremely prescriptive, and colleges must develop SEPs to receive funding from the SSSP. According to SB860, to ensure equal educational opportunities and promote student success regardless of race, gender, age, disability, or economic circumstances, the governing board of each community college district shall maintain an SEP that includes:

- Campus-based research as to the extent of student equity by gender, current or former foster youth, students with disabilities, low-income students, veterans, and racial background
- A determination of activities most likely to be effective in increasing access to and completion of basic skills, career technical education and workforce training, and transfer courses for all students
- Whether significant underrepresentation exists and plans for addressing disparities, implementing activities designed to achieve the goals, adopting evidence-based models of remediation, implementing placement tests and policies more accurately predicting student success, identifying student remedial needs, and coordinating efforts of the various stakeholders

Funding allocation. In California, funding is contingent upon the adoption of an SEP and is then allocated using a formula with allotments based on seven factors:

- Factor 1: Annual FTES
- Factor 2: High Need Students
- Factor 3: Educational Attainment of Residential Zip Code
- Factor 4: Foster Youth

- Factor 5: Participation Rate
- Factor 6: Poverty Rate
- Factor 7: Unemployment Rate

Whereas funding for factors 1-4 is distributed proportionally, funding for factors 5-7 is distributed based on values using methodologies outlined in Section 1125 of the H.R. 6 Improving America's Schools Act of 1994, Title I—Helping Disadvantaged Children Meet High Standards (CCCCO, 2015).

Expenditure guidelines. In August 2015, the CCCCO released *Student Equity Expenditure Guidelines*, which defined what constitutes acceptable and unacceptable uses of student equity funds. Specifically, the Student Equity Success Indicators, as specified in Title 5 sections 54220 and 51026, are intended to assess access, course completion, ESL and basic skills completion, degree/certificate completion, and transfer rates. General criteria for expending equity fund explains that expenditures must be directed toward people and activities identified as priorities in the SEP and the results of a disproportionate impact study must be used to prioritize targeted demographics, goals, and activities. Additionally, funds must fulfill the aim of student equity and be necessary and reasonable in implementation. In contrast, expenditures may not be used for general purposes. Eligible and ineligible expenditures are shown in Table 3.

Table 3

Eligible and Ineligible SEP Expenditures

Eligible Expenses	Ineligible Expenses
▪ Targeted outreach to potential student groups and communities identified in the SEP from disproportionately impacted groups, including targeted publications and outreach materials ▪ Student services and categorical programs directly supporting improved outcomes on success indicators for target populations ▪ Research and evaluation related to improving student equity ▪ Hiring a student equity program coordinator and staff directly supporting and implementing student equity activities ▪ Support for student equity planning processes ▪ Food and beverages for equity-related planning meetings, professional development, or student gatherings ▪ Professional development and consultants to educate faculty and staff on equity-related topics ▪ Developing/adapting academic or career-related programs, curriculum and courses to improve student outcomes ▪ Providing tutoring, counseling support for learning communities, and other instructional support services ▪ Related in-state travel ▪ Computers and peripherals used by students, excluding large scale projects ▪ Other direct student support including books, supplies and materials, transportation, and childcare	▪ Construction, maintenance, remodeling, renovation, or purchase of buildings ▪ Gifts or monetary awards of any kind ▪ Student stipends for participation in student equity activities ▪ Computers, technology, office supplies, and furniture to be used primarily by faculty and staff ▪ Rental of off-campus space ▪ Political or professional dues, memberships, or contributions ▪ Other administrative, faculty, or staff salaries and benefits not directly support student equity ▪ Unrelated travel costs ▪ Indirect costs (e.g., heat, electricity, janitorial services) ▪ Courses, tutoring, or supplemental instruction that generate FTES ▪ Vehicles ▪ Clothing (with the exception of required work uniforms for students) ▪ Unrelated research ▪ Supplanting general or state categorical funds ▪ Legal and audit expenses

Note. The list of eligible and ineligible uses of student equity funds expenditure guidelines have been replaced by the Student Equity and Achievement (SEA) Program Expenditure Guidelines (CCCCO, 2018).

Challenges with SEPs. Having to simultaneously address the achievement gap and overall student success for local student populations, faculty in particular expressed concern about meeting various student success mandates and deadlines of several plans, including the SSSP, the Basic Skills Initiative, and now the SEP. Student achievement was the primary focus of their work and they identified effective participation and clearly defined shared governance methods to achieve it. Taking this approach would require deliberation among constituent groups to address local success gaps while attempting to develop best practices to assist all students in achieving their educational objectives. Concerns were also raised about how state-allocated equity money would be spent, with a focus on areas where the greatest success gaps were observed while avoiding negative consequences for other student groups (Todd, Holcroft, & Evett, 2014).

Although coordination among equity related programs and services help improve student support, colleges were still hampered by multiple grant requirements limiting streamlining of resources to programs. One of the most significant issues was monies from the Basic Skills Initiative, the Student Equity Initiative, and the SSSP could not be transferred between programs. As a result, the CCCCO developed the Student Education Achievement (SEA) program in 2018, which integrated three financial initiatives: the SSSP, the Basic Skills Initiative, and the Student Equity Initiative. The SEA program is an attempt to allow institutions to fund the activities encouraged by these initiatives. The goal of combining these initiatives into a single program was to close the achievement gap among historically underrepresented and nontraditional groups (CCCCO, 2018). The new model expanded expenditure rules to cover all initiatives relevant to student equity and delegated responsibility for allocating funds to local districts (CCCCO, 2018).

Funding Constraints

A unique requirement in California community college funding is the 50% law, which requires all colleges spend at least half of the of their education expenses for classroom instructor salaries (Ed Code section 84362). Counselors nor librarians are not included on the instructional side of the law, only fulltime and part-time classroom instructors as well as instructional aides.

This requirement hampers colleges from putting more funds toward support services to improve student success outcomes as those expenditures are in the denominator rather than the numerator of the ratio calculation. This constraint was recognized by the Legislative Analyst Office (LAO), which in 2010 recommended the modification of the 50% law to give districts more ability to hire faculty who provide direct support services to students by including expenditures on counselors and librarians as part of instructional costs (LAO, 2010). The impact of the 50% law and implications on student success was not researched in depth for this study.

Research Gap

At the time of this study, little could be found to determine the impact of PBF on student performance in general, and more specifically, the impact of PBF on African American students. This study examined PBF targeted to close the achievement gap in higher education specifically among African American students. The African American student population was selected because these students had the lowest levels for completing transfer-level math and English courses compared to other race/ethnic groups. Among the 2019-20 cohort of a four-year longitudinal study, the CCCCO Launch Board showed an 8% success rate for African American and American Indian/Native American

students, which were the lowest within the study (CCCCO, n.d.-a). As more data are available for African American students than American Indian/Native American students, the former group was selected for this study. By investigating the impact of PBF on African American student outcomes in the CCC system, the study aimed to explore PBF policies on success rates. Specifically, the study assessed the relationship of equity funding to student completion, degrees, certificates, and transfers rates.

Summary

The literature review provided a brief account on background and access to higher education worldwide and in the United States, then delved into California's higher education system focusing particularly on community colleges. While enrollments grew significantly, completion and graduation rates were unable to keep pace nor fulfill industry needs. Furthermore, despite greater access and improved state finances to support education, disparities widened, creating a bigger chasm in educational attainment between underrepresented or underserved student populations, especially between African American and Caucasian students.

Multiple equity-related efforts emerged in the CCC system, including new student success frameworks and support services, to remedy and close achievement gap. The CCCs initiated PBF models, which provided funding based on access and outcome criteria. PBF included the student equity funds, which prescribed institutional adoption of an SEP to ensure educational opportunities and promote student success for all students, regardless of race, gender, age, disability, or economic circumstance. Chapter III presents the methodology used for this study.

CHAPTER III: METHODOLOGY

California began funding community college matriculation services through the Seymour Campbell Matriculation Act of 1986. This financing via SB1456 was made available to schools to improve the application for admission process, orientation and pre-orientation services, assessment, and counseling as part of the enrollment process, and post-enrollment evaluation of student progress. Updated in 2012, the Seymour Campbell Student Success Act broadened implementation of these core services, expanding on educational planning and follow up for at-risk students. As data collection improved, the success gap between ethnic and socioeconomic groups became progressively evident. Thus, Governor Brown pushed for his equity program initiative and in 2014 Student Support and Success Program (SSSP) funding was augmented with $70 million in additional funding, which came with elevated requirements and made student equity plans a condition of SSSP funding.

Chapter III presents the methodology for this research study. It starts by reiterating the purpose statement and research questions. This is followed by an explanation of the research design, study population and sample, instrumentation, data collection and analysis, and limitations of the study. A summary concludes the chapter.

Purpose Statement

The purpose of this quantitative correlational study was to determine what relationship exists between equity fund spending and the student success measures of graduation rates, associate degrees and certificates awarded, and transfers completed in single community college districts for African American students in California.

Research Questions

The following research questions guided this study:

1. What relationship exists between Equity Funds spending and associate degrees and certificates awarded for African American students?
2. What relationship exists between Equity Funds spending and transfers completed for African American students?

Research Design

A quantitative research design was used in this investigation. Quantitative research gathers numeric data that are analyzed with statistical techniques. A correlational research design was used in this study. Correlational research is a non-experimental research strategy using statistical analysis to investigate the relationship between two or more variables (Creswell 2003; Williams, 2011).

This study aimed to determine the relationship of Equity Fund spending and student success outcomes in terms of course completion, degrees and certificates awarded, and transfers to four-year institutions. Research typically employs quantitative or qualitative methods, or a combination of the two. For this study, the use of archival data to understand a relationship between the variables required use of a quantitative, correlational research method.

Student success data for the study came from the California Community College Chancellor's Office (CCCCO) through the LaunchBoard, a statewide data system. LaunchBoard is a compilation of the college success metrics data submitted to the CCCCO as part of their periodic updates via their institutional management information systems (MIS). Additionally, the integrated postsecondary education data system

(IPEDS), a collection of interconnected surveys conducted annually by the National Center for Educational Statistics (NCES), was used to determine student success outcomes. Colleges and universities participating in federal financial aid programs are required to report data on enrollment, program completion, graduation rates, faculty and staff, finances, institutional prices, and student financial aid, as mandated by the Higher Education Act of 1965 (as amended by the Every Student Succeeds Act in 2015). Equity funding information by college was also obtained from the CCCCO via their annual apportionment reports for the recalculation period, the final financial accounting report of the fiscal year. Beginning in 2018, equity funds were merged into the Student Equity and Achievement Program (SEAP) and tracked through the annual apportionment reports. All the data sources for this study were public access sources, so no permissions to use the data were required for the study.

Population

A population is a group meeting specific criteria to which research results can be generalized (McMillan & Schumacher, 2010). The California community college (CCC) system, comprised of 73 college districts with 116 colleges as of the 2018-19 academic year, was the population of this study. This population included 23 multi-college districts (representing 66 colleges) and 49 single college districts. Total statewide enrollments for the 2018-19 academic year exceeded 2.1 million full-time equivalent students (CCCCO - Fiscal Services, 2017) and over a 2.3 million student headcount (CCCCO - Data Mart, n.d.). These college districts included rural to urban institutions and spanned in size from small size colleges serving fewer than 10,000 students to large colleges with more than

20,000 students. The population for this study was all students enrolled in a CCC in the 2018-19 academic year.

Sampling Frame

A sampling frame is defined as "the actual list of sampling units from which the sample is selected" (Creswell, 2014, p. 393). Also called a target population, the sampling frame is the complete group of subjects selected from the population for whom the study data can be used to draw conclusions and generalize findings. It is critical that sampling frames precisely define the goals of a research project before proceeding (McMillan & Schumacher, 2010). Due to time and financial constraints, it is often not practical to examine huge groups; as a result, researchers select samples from within a larger group.

The sampling frame for this study was African American students enrolled in CCC districts that received equity funds between the 2014-15 and 2016-2017 academic year. In the 2016-17 academic year, the CCCCO allocated $137.5 million in equity funds, nearly doubling the $70 million in fiscal year 2014-15 (CCCCO - Fiscal Services, 2017). Seventy-two CCC districts received equity funds between the 2014-15 and 2016-2017 academic years. In 2017-18, the CCCCO combined SSSP, Student Equity, and Basic Skills Initiative funds, which in 2018-19 became known as the Student Equity Achievement (SEA) grant. Approximately 1.45 million students were enrolled in the 72 colleges receiving Equity Funding. About 8% of the California population is African American, so the target population was estimated to be 116,000 African American students enrolled at CCCs receiving equity funding.

Sample

When conducting a study, a sample is a set of individuals chosen from the target population from whom the researcher aims to generalize the findings. McMillan and Schumacher (2010) defined a sample as a "group of individuals from whom data is collected" (p. 129). Similar to Patton (2015) and Creswell (2003), they defined a sample as a subset of the target population representing the entire population.

Equity funding is allocated at the district-level rather than the college-level within a multi-college district, whereas student success statistics are reported at the college level. Therefore, this study focused solely on single college districts. The sample for this study was selected using a non-probability, purposive method. The criteria for selection were:

1. Must be a member of the approximately 78,950 African American students in the 49 single CCC districts
2. Must come from a single CCC district
3. Must have received Equity Funds between the 2014-15 and 2016-17 academic years
4. Must have received SEA grants through 2019-20

Data Collection

Archival data were collected for this study. College student success data were obtained from the LaunchBoard, a statewide data system supported by the CCCCO that provides data about CCCs on progress, employment, and earning outcomes for students. All data in these systems and used in this study were public access data so no permission to acquire and use them was required. The primary data source was the Strong Workforce Program Metrics that track course enrollments, credit hours completed,

degrees and certificates, transfers, and various employment and earnings data. These data were obtained for the 2011-12 through 2018-19 fiscal years.

The second data source also came from the CCCCO where enrollments were garnered from the *Recalculation State General Apportionment Reports* for the 2014-15 through 2016-17 fiscal years. These reports detailed apportionment funding based on full-time equivalent students. Equity funding allocations were obtained from the *Recalculation Reports* for fiscal years 2014-15 through 2016-17. Again, all data sources were public access so permission to use the data was not required.

Data Analysis

Both descriptive and inferential statistics were used to provide a more complete picture of the nature of the data and the relationships within them.

Descriptive Analysis

SPSS was used to run descriptive statistics to depict the basic features of the data and analyze them for any recognizable patterns. First, the data were visually explored for errors and outliers. These observations included reviewing the measures of central tendencies – mean, median, mode – and looking at the spread of values such as range and the standard deviation. To show the data spread, values were further grouped into categories, creating frequency distribution charts or histograms. Using this approach helped visualize this specific data set. Tables displaying the descriptive data were created to enhance analysis and understanding and are presented in Chapter IV.

Inferential Analysis

Following data cleanup and a review of the descriptive statistics, inferential statistics were used to determine the level of the relationship between the variables. The

research questions aimed to determine the strength of the relationship between equity funding and the student success measures of course completion, number of degrees and certificates awarded, and the number of transfers to a four-year institution. The study examined the data sets over a period of three years, beginning on fiscal year 2014-15 through fiscal year 2016-17.

Per pupil spending vis-à-vis the student success outcomes was calculated, tabulated, and ranked based on highest level of achievements. This calculation was then repeated for the three fiscal years and the annual sets then studied using a multiple regression analysis to determine the relationships between funding levels and student success outcomes, or in other words determine the relationship of funding to outcomes. Rather than performing Pearson product moment relationship calculations on each pair of data sets individually, the multiple regression analysis provided the level of relationship for each independent variable (student success measures) to the dependent variable (funding) as well as the order of relationship. Multiple regression considers the relationship between multiple independent variables and the dependent variable simultaneously (McMillan & Schumacher, 2010).

Limitations

There were three limitations in the study. The first was that the research only covered single college districts and did not analyze multi-college districts because of funding at the district-level whereas performance data were at the college-level. As such, results may be constrained and may not be generalize to the entire CCC system. Second, whereas other under-represented groups face similar equity gaps, the cohorts examined were African American students. This narrow focus may further inhibit wide ranging

application to the student population. Lastly, there are other institutional factors not included in the study that might impact student success outcomes, such as the level of direct counseling support (e.g., tracking and advising students to degree/certificate completion); the degree of integration of Basic Skills, SSSP, and Equity Funds; campus demographics; and other characteristics that may influence student success.

Summary

This study sought to explore the relationship between equity funding and student outcomes in terms of course completion, certificates and degrees awarded, and transfers to a four-year institution. The study population consisted of 49 single college districts within the CCC system, representing approximately half a million students.

Three years of archival data were retrieved from the CCCCO with equity funding information coming from the annual apportionment reports and student performance metrics from the LaunchBoard. To answer the research questions, the study applied quantitative research methods to the archival data sets. Descriptive statistics were used to depict the basic features of the data and analyze them for any recognizable patterns. Following that, inferential statistics were used to determine correlation of equity funding to student success outcomes.

CHAPTER IV: FINDINGS

Chapter IV presents the study findings, included a review of data acquired from the California Community Colleges Chancellor's Office (CCCCO) apportionment reports for financing and the LaunchBoard and IPEDS for student success measures. The first section of the chapter reiterates the study purpose, research questions, and data collection procedures. Following that is a review of the findings by research question and the chapter finishes with an overview of the research findings.

Purpose Statement

The purpose of this quantitative correlational study was to determine what relationship exists between equity fund spending and the student success measures of associate degrees and certificates awarded, and transfers completed in single college community college districts for African American students in California.

Research Questions

Two main research questions guided the study:

1. What relationship exists between Equity Funds spending and associate degrees and certificates awarded to African American students?
2. What relationship exists between Equity Funds spending and transfers completed by African American students?

Data Overview

To provide a broad overview of the data, several demographic data are presented related to funding, population, study sample, and proportionate ratios of the study population relative to the total population in terms of enrollments and success measures. Statewide increases, study college, and study population patterns were consistent over the

six-year period – increases/decreases of the populations mirrored those seen at the statewide level. No data points in the charts were noted to be nonconforming or more extreme but lined up with the statewide trends.

The first data reviewed were the equity funds, looking at funding levels beginning in 2014-15 (SB 1456) to improve student success by focusing on student equity. These funds were allocated in tandem with the Student Success and Support Program (SSSP), which were targeted to help underrepresented student groups close access and achievement gaps in schools. In 2018, the SSSP, the Student Equity Funds (SEF), and the Basic Skills Initiative (BSI) were combined, and all funded through the Student Equity and Achievement Program (SEAP), placing all efforts under one program to help reach the goals of closing the performance gap between students from traditionally underrepresented groups. Given the focus on this study on equity funding, Figure 1 presents the trend of funding across all community colleges in the state.

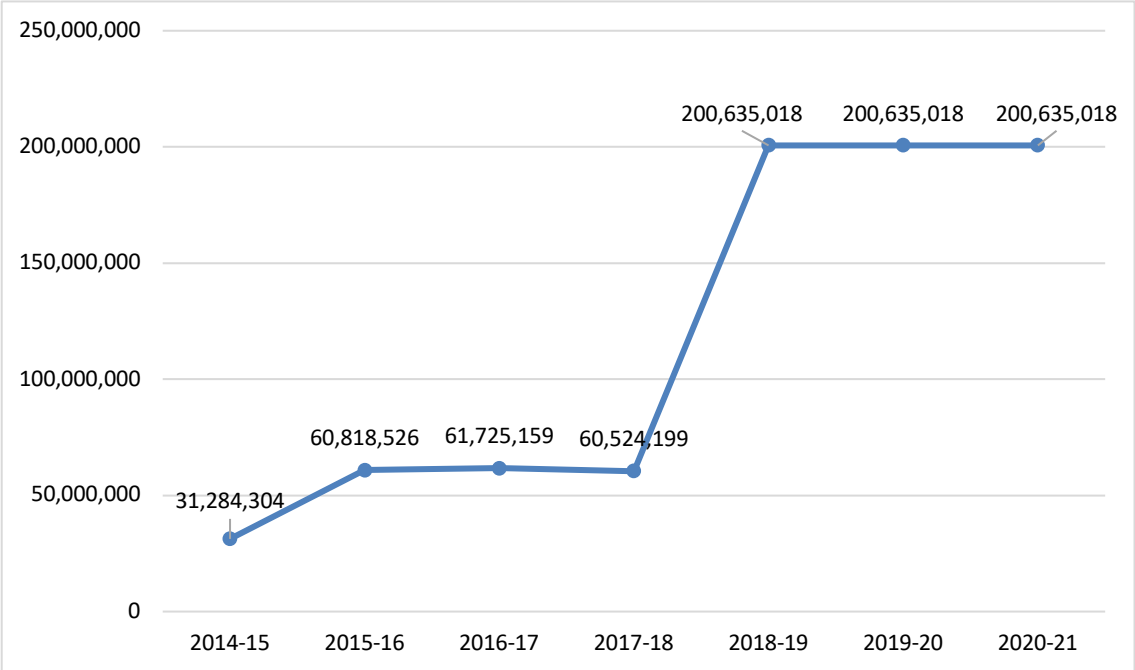

Figure 1. Equity funds available from 2015 to 2020.

Figure 2 shows overall enrollments in the CCC system as compared to the enrollments in the study colleges, with slightly less than half of the statewide enrollments generated by the latter. Although overall student enrollments declined by about 6.1% from 1,061,069 in 2014-15 down to 995,788 in 2020-21, it only dropped by about 4% for the study colleges in that same period from 478,267 to 459,035.

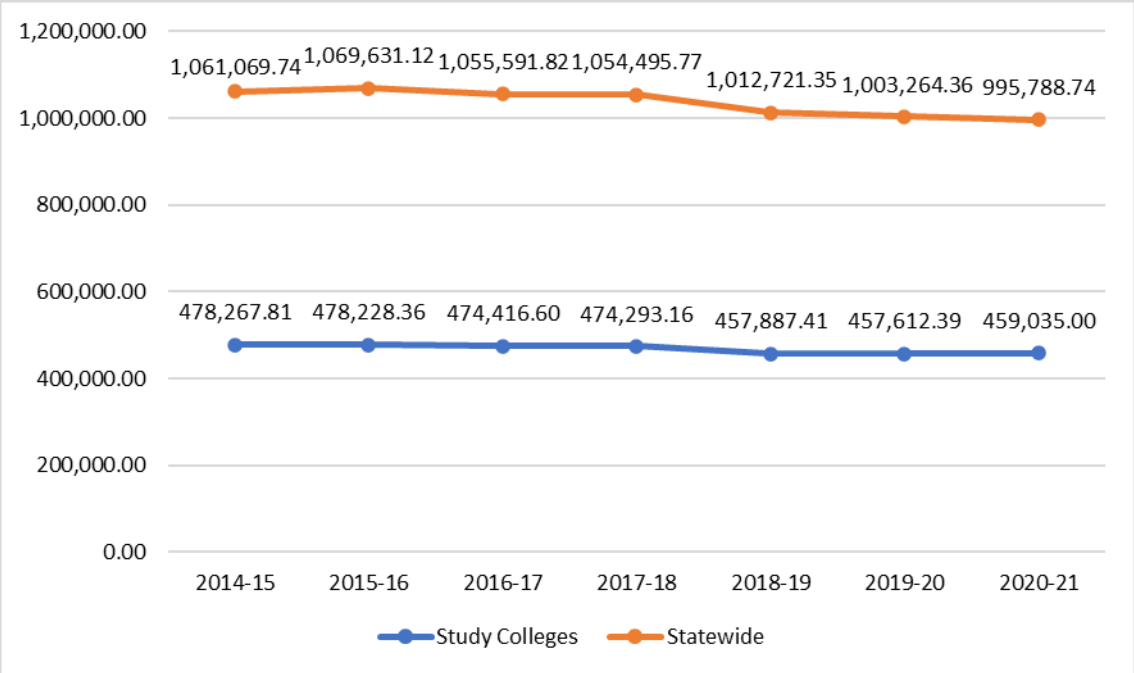

Figure 2. Student enrollment from 2015 to 2021.

Over half of California's residents reside in five counties: Los Angeles, Orange, Riverside, San Diego, and San Bernardino Counties, with the state's 10 largest cities by population being Los Angeles, San Diego, San Jose, San Francisco, Fresno, Sacramento, Long Beach, Oakland, Bakersfield, and Anaheim. Consistent with the state's population density, Figure 3 shows how the single district community colleges in the study also clustered around the state's population centers; the map shows broad distribution of the single college districts throughout California, with greater concentration in the urban areas such as the greater Bay Area, Los Angeles, and San Diego.

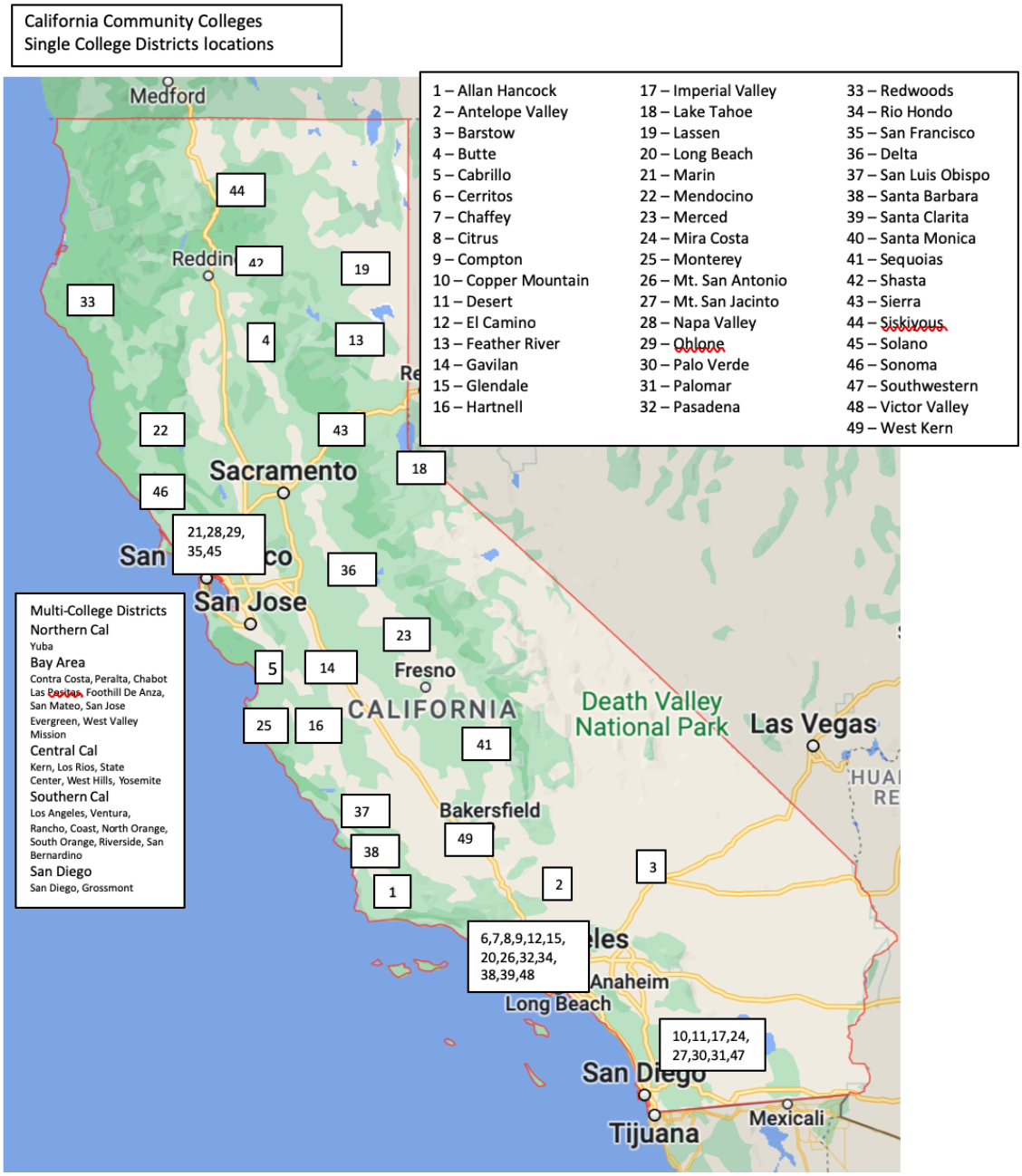

Figure 3. Distribution of study schools across the state.

The remaining demographic tables focus on data from the 49 single school community college districts that were the focus of this study. Figure 4 shows the total student enrollments within the study colleges (blue line) and the enrollments of African American students (orange line). As seen in the chart, overall enrollments from 2015 to 2020 declined by 20,656 or 4.3% whereas enrollments of African American students

dropped by 9,355 or 15.3%, a loss rate 3.5 times greater than the overall student enrollments for the study colleges in the same period.

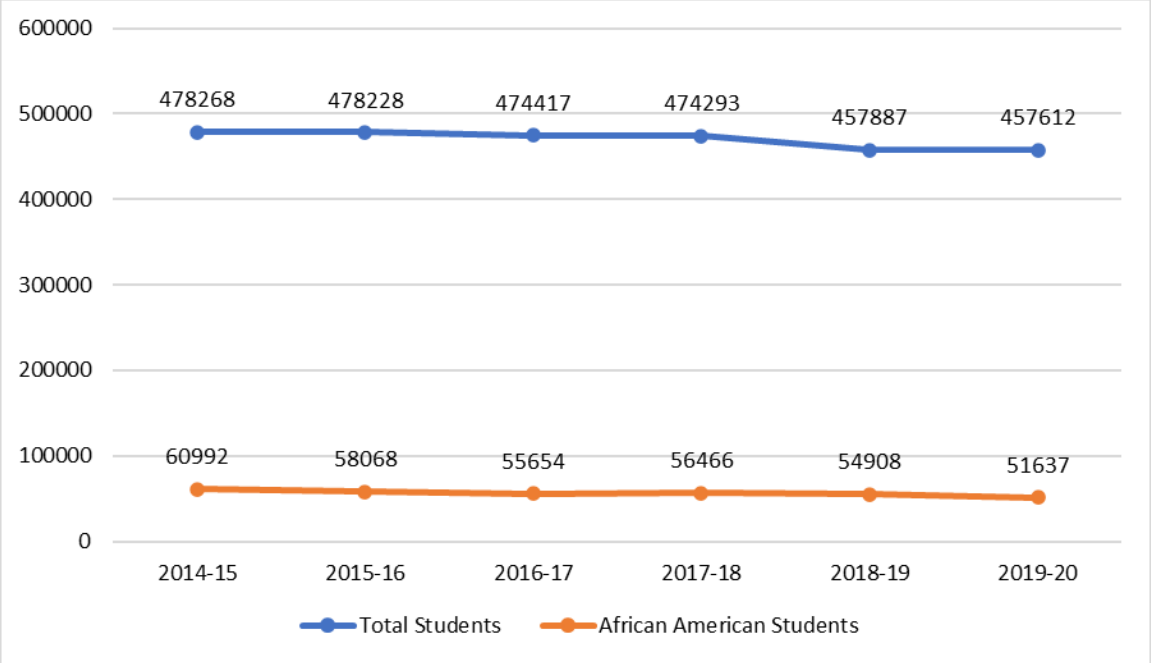

Figure 4. Enrollment trends for African Americans compared to all students.

The proportion of African American student enrollments was also compared to the overall student enrollments at the study institutions, showing the enrollment declines noted in above in relation to the total enrollments. In 2014-15, African Americans comprised 12.75% of the total student population, and the proportion decreased to 11.28% by the 2019-20 school year (Figure 5).

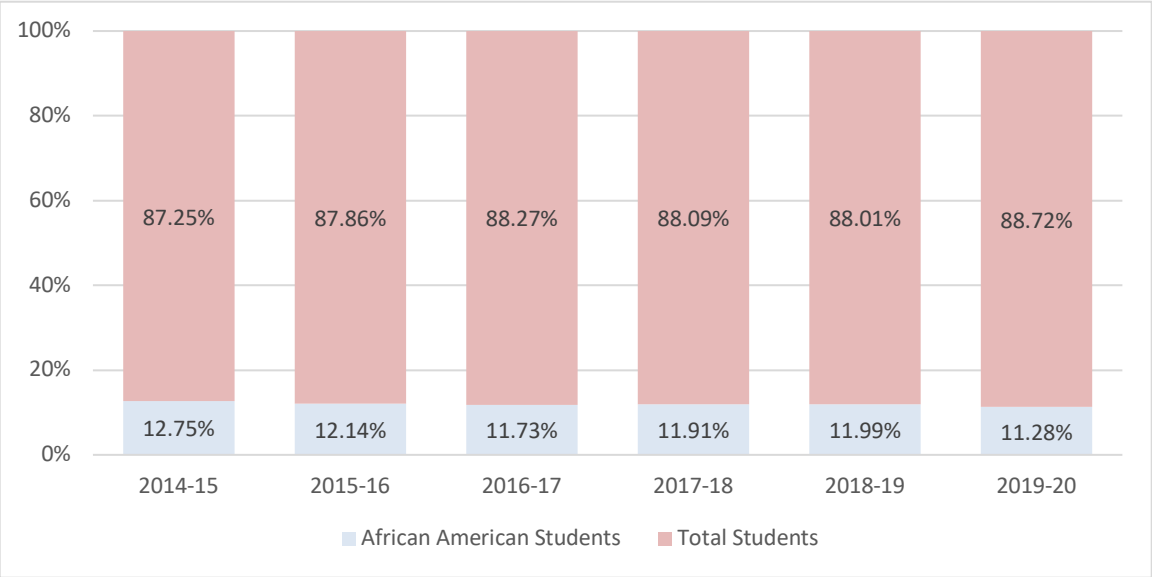

Figure 5. Proportion of African American student enrollment.

Despite the systemwide student enrollment declines between 2014-15 to 2019-20, including among African American students, the number of degrees and certificates awarded increased during that same period. Degrees and certificates awarded at the study colleges rose from just under 54,000 in 2014-15 to 75,654 in 2019-20, with those conferred to African American students increasing from 2,845 to 3,414. Looking across years, large increases occurred from 2014-15 to 2015-16 where degrees and certificates for total students increased 8.7%, then again between 2016-17 and 2018-19, which saw a 26.7% increase before declining about 1% in 2019-20. For African American students, the increase from 2014-15 to 2018-19 was 24.3%, then dropping about 3.5% in 2019-20 (Figure 6).

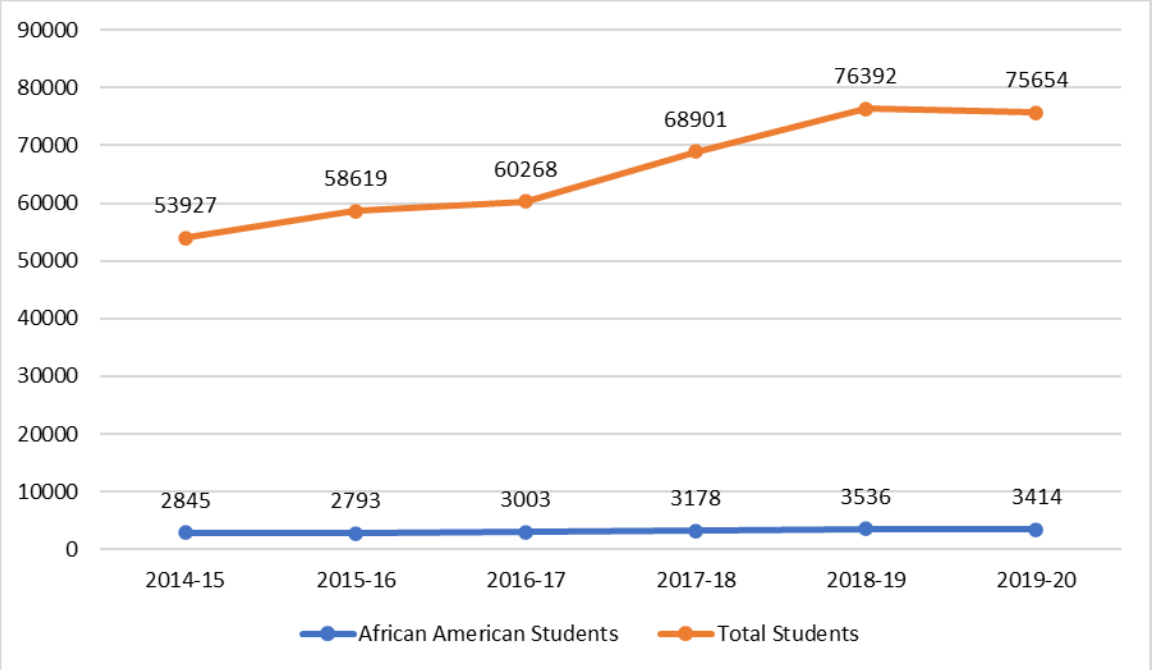

Figure 6. Degrees and certificates awarded from 2015 to 2020

Similar to above, Figure 7 shows the proportion of degrees and certificates awarded to African Americans compared to total student enrollments. The data show the proportion of degrees and certificates awarded to African American students declined from 5.28% in 2014-15 to 4.51% by 2019-20. When compared to total African Americans enrolled, fewer than half of those enrolled went on to earn a degree or certificate.

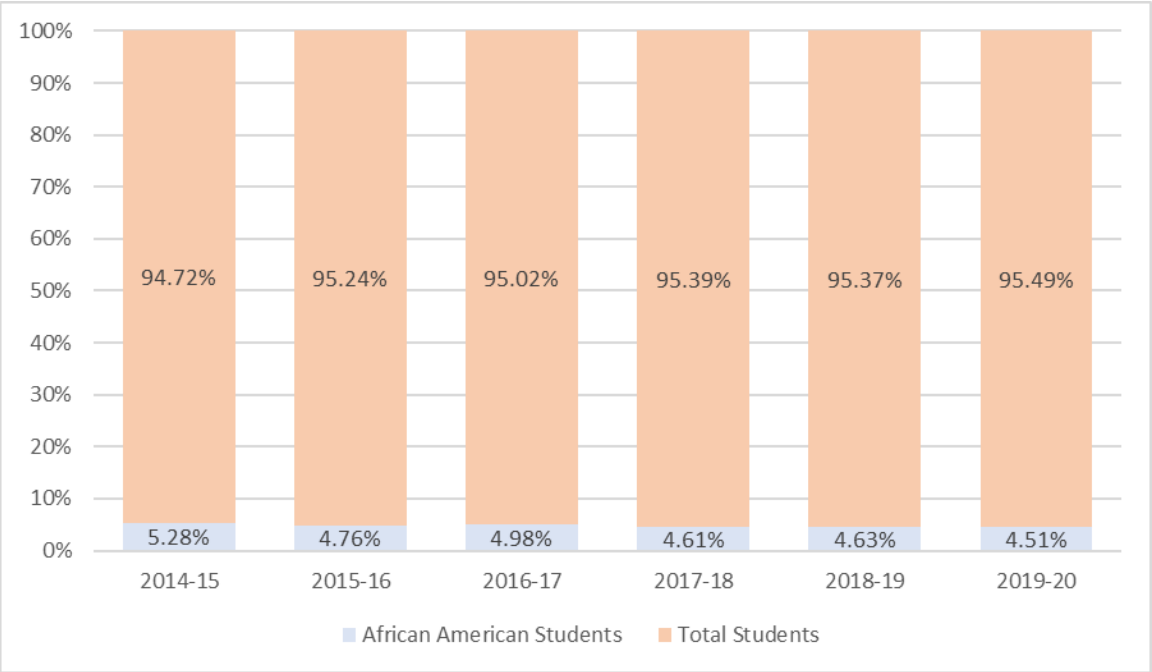

Figure 7. Proportion of degrees and certificates awarded to African Americans.

In addition to looking at degrees and certificates awarded, the study also looked at transfer rates to universities. Figure 8 shows the number of transfers declined by 19% for overall students compared to a versus a nearly 33% decline for African American students from 2014-15 to 2019-20. Specifically, the number of transfers went from 4,787 to 3,876 for total students and from 547 to 368 transfers for African American students.

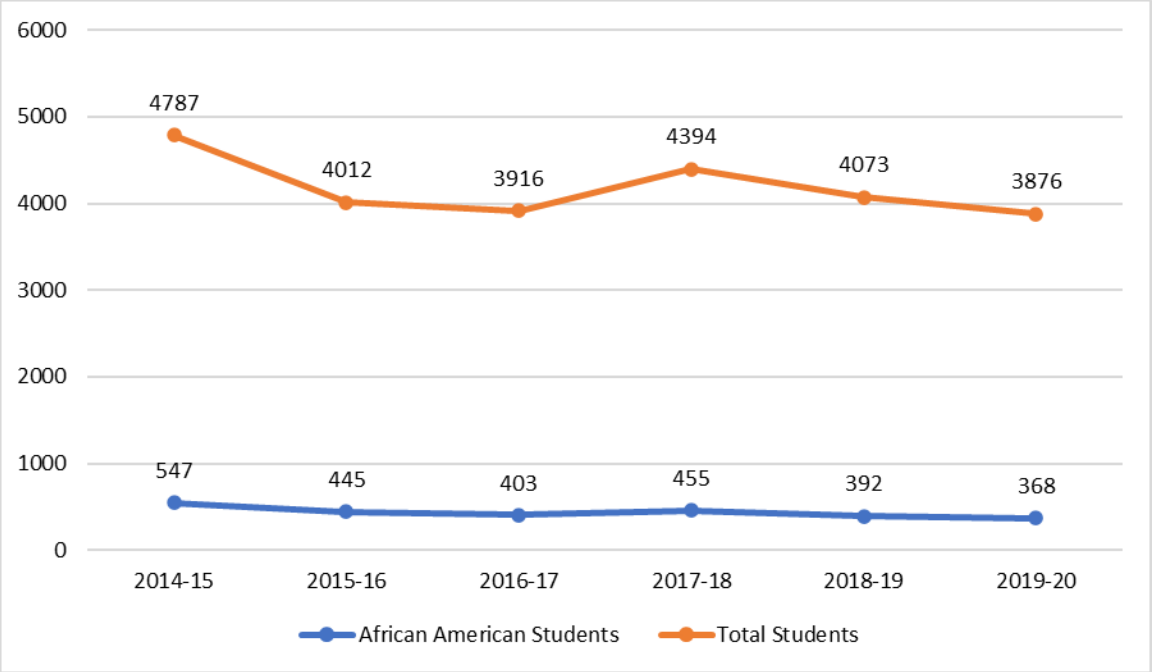

Figure 8. Transfers to universities from 2015 to 2020.

Figure 9 depicts the proportion of transfers among African American students to total students at the study colleges, which fell from 11.43% down to 9.49%.

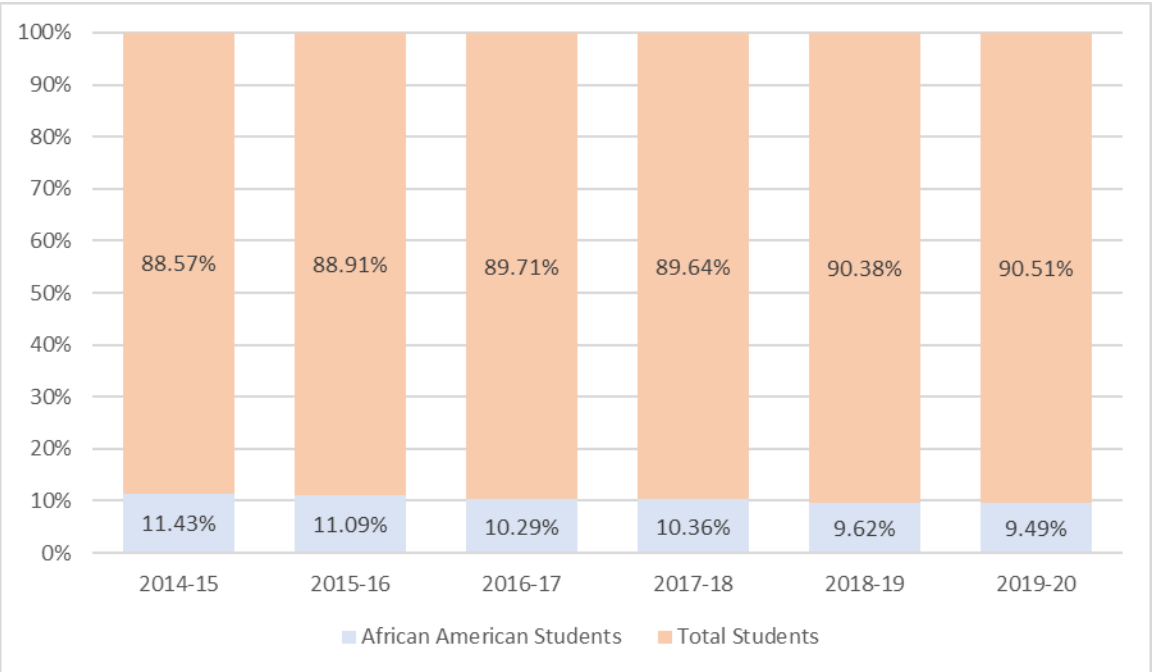

Figure 9. Proportion of transfers to universities from 2015 to 2020.

Findings for the Research Questions

The research questions looked at the relationship between equity funding and degrees and certificates awarded to as well as transfers completed by African American students. This was done by correlating funding to total students, total African American students, and success measures over six academic years: 2014-15 through 2019-20.

Table 4 shows the results of the Pearson correlation used to compare the relationships between funding, total students, Black students, degrees, and transfers, depicted annually over a six-year span, 2014-15 to 2019-20. The total number of students showed a strong positive correlation over the years, ranging from .90 to .95. This was expected given funding was directly proportionate to total student enrollment. Funding also showed a moderate positive correlation with Black student enrollment, with correlation coefficients between .53 and .58 in for the same period. For the success measures, degrees and certificates correlated moderately with funding, ranging from .62 to .69, and transfers ranged from .44 to .70. The correlations are consistent in that the greater the number of students, the greater the funding, and the greater the number of African American students, the greater success measures for African American students.

Looking at the total of African American students enrolled compared to the number of degrees and certificates awarded to African American students, there was a strong correlation ranging between .93 to .97, which was slightly lower with transfers ranging between .75 to .85. The success measures for African American students in relation to the number of African American students is also consistent – as African American student enrollment increases, the number of degrees awarded to and transfers by African American students also increases.

Table 4

Correlation by Years

	Funding	Total Students	Black Students	Degrees	Transfers
2014-15					
Funding	1	.90**	.57**	.69**	.70**
Total Students		1	.57**	.63**	.66**
Black Students			1	.93**	.83**
Degrees				1	.87**
Transfers					1
2015-16					
Funding	1	.92**	.53**	.62**	.55**
Total Students		1	.58**	.66**	.63**
Black Students			1	.97**	.79**
Degrees				1	.77**
Transfers					1
2016-17					
Funding	1	.91**	.56**	.62**	.57**
Total Students		1	.57**	.61**	.57**
Black Students			1	.93**	.81**
Degrees				1	.77**
Transfers					1
2017-18					
Funding	1	.91**	.58**	.67**	.49**
Total Students		1	.57**	.62**	.51**
Black Students			1	.95**	.75**
Degrees				1	.65**
Transfers					1
2018-19					
Funding	1	.95**	.57**	.66**	.44**
Total Students		1	.60**	.65**	.56**
Black Students			1	.93**	.75**
Degrees				1	.66**
Transfers					1
2019-20					
Funding	1	.95**	.58**	.63**	.47**
Total Students		1	.61**	.63**	.59**
Black Students			1	.94**	.86**
Degrees				1	.78**
Transfers					1

Note. The degrees and transfers are specific for African American students and not the total number of degrees and transfers for the college campus.

Given the strength of the correlations, regression was used to determine if the variables of funding, total students, and total Black students could serve as predictors for the degrees and certificates awarded and the number of transfers. Table 5 presents the models calculated by each study year. The R^2 values ranged between .81 to .92, meaning these variables accounted for a large proportion of the variance among the number of degrees and certificates awarded. Looking across the years, the number of Black students enrolled was consistently significant with a *p*-value less than .001, meaning the number of African American students is the best predictor of the number of degrees and certificates awarded to African American students. Funding also appeared significant (with a *p*-value of .05 or less) in 2014-15, 2017-18, and 2018-19.

Table 5

Regression by Year for Degrees/Certificates Awarded

	B	*SE*	*t*	*p*	95% CI
2014-15					
Constant	-3.28	4.978	-.658	.514	[-13.30, 6.75]
Funding	<.001	.000	3.533	<.001	[.00, .00]
Total Students	-.002	.001	-1.554	.127	[-.001, .00]
Black Students	.034	.002	14.127	<.001	[.03, .04]
R^2	.90				
2015-16					
Constant	-5.06	4.688	-1.079	.286	[-14.50, 4.38]
Funding	<.001	.000	.817	.418	[.00, .00]
Total Students	.001	.001	.768	.447	[-.001, .003]
Black Students	.039	.002	16.063	<.001	[.03, .04]
R^2	.92				
2016-17					
Constant	-2.98	6.031	-.494	.623	[-15.13, 9.17]
Funding	<.001	.000	1.451	.154	[.00, .00]
Total Students	.000	.001	-.300	.766	[-.003, .002]
Black Students	.044	.003	13.481	<.001	[.04, .05]
R^2	.81				
2017-18					
Constant	-11.65	5.496	-2.120	.040	[-22.72, -.59]
Funding	<.000	.000	3.058	.004	[.00, .00]
Total Students	-.002	.001	-1.595	.118	[-.01, .00]
Black Students	.051	.003	16.632	<.001	[.05, .05]
R^2	.92				
2018-19					
Constant	-15.50	7.29	-2.125	.039	[-30.19, -.81]
Funding	<.000	.000	2.285	.027	[.00, .00]
Total Students	-.002	.002	-1.155	.254	[-.01, .00]
Black Students	.058	.004	13.457	<.001	[.05, .07]
R^2	.88				
2019-20					
Constant	-9.01	6.968	-1.293	.202	[-23.05, 5.02]
Funding	<.000	.000	1.739	.089	[.00, .00]
Total Students	-.002	.002	-1.000	.323	[-.01, .00]
Black Students	.062	.004	13.758	<.001	[.05, .07]
R^2	.89				

This pattern was similar for transfer rates. The R^2 values ranged from .57 to .79. A *p*-value of less than .001 was consistent for the total number of African American

students across all years. Funding was also significant in the 2014-15 and 2019-20 school years, and total students was also significant for 2018-19 and 2019-20 (Table 6).

Table 6

Regression by Year for Transfers

	B	*SE*	*t*	*p*	95% CI
2014-15					
Constant	-1.04	1.599	-.648	.520	[-4.26, 2.18]
Funding	<.001	.000	2.262	.029	[.00, .00]
Total Students	<.001	.000	-.183	.856	[-.001, .001]
Black Students	.006	.001	7.340	<.001	[.004, .007]
R^2	.77				
2015-16					
Constant	-1.57	2.168	-.72	.473	[-5.94, 2.80]
Funding	<.001	.000	-.76	.454	[.00, .00]
Total Students	.001	.000	1.84	.73	[0.00, .002]
Black Students	.007	.001	6.17	<.001	[.005, .009]
R^2	.68				
2016-17					
Constant	.58	1.698	.341	.735	[-2.86, 4.02]
Funding	<.001	.000	.295	.769	[.00, .00]
Total Students	.000	.000	.532	.598	[-.001, .001]
Black Students	.006	.001	6.559	<.001	[.004, .008]
R^2	.69				
2017-18					
Constant	.89	2.240	.397	.693	[-3.65, 5.43]
Funding	<.000	.000	-.082	.935	[.00, .00]
Total Students	.000	.000	.413	.682	[-.01, .001]
Black Students	.007	.001	5.161	<.001	[.004, .01]
R^2	.57				
2018-19					
Constant	2.53	2.125	1.192	.241	[-1.77, 6.84]
Funding	<.000	.000	-1.902	.065	[.00, .00]
Total Students	.001	.000	2.208	.034	[.00, .002]
Black Students	.006	.001	4.840	<.001	[.004, .009]
R^2	.62				
2019-20					
Constant	1.86	1.367	1.362	.181	[-.91, 4.63]
Funding	<.000	.000	-2.057	.047	[.00, .00]
Total Students	.001	.000	2.026	.050	[.00, .002]
Black Students	.008	.001	8.245	<.001	[.006, .010]
R^2	.79				

Summary

The study examined the relationship between California community college equity fund spending and the African American student success measures of (1) degrees and certificates awarded and (2) transfers to 4-year universities. The findings showed strong correlations between funding to the total number of students, as well as strong correlations between the number of African American students and the success measures for African American students. As expected, the greater the number of African American students, the greater the number of success measures achieved among African American students. This was also borne out by the regression analysis which showed the number of African American students was the most significant predictor of degrees and certificates and transfers of African American students.

CHAPTER V: CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Education serves as the foundation for both individual and societal progress, with higher levels of educational achievement opening doors to better professions and earnings. Although community colleges provide excellent access to higher education to a fast rising and increasingly diverse student body across the country, achievement gaps between most minority students and their Caucasian counterparts remained obvious and schools continued to struggle to overcome the performance gap.

In response to dismal graduation rates, the California legislature enacted the Student Success Act of 2012 to assist in raising the level of academic attainment among students. This Act established the Student Success and Support Program (SSSP), which offers a variety of intake and guidance services to students. The goal of the SSSP is to identify and eliminate inequalities in access and accomplishment existing among students who belong to different demographic groups. As data collection improved, the disparity in achievement between racial and socioeconomic groups became more evident, particularly among African American students. To help bridge and close the educational attainment gap, more funding was directed toward those efforts through equity program initiatives, including the SSSP and Student Equity Program (SEP), and eventually the Student Equity and Achievement Program (SEAP). The programs were tied to accountability measures, thus essentially representing performance-based funding initiatives.

The purpose of this study was to determine what correlation existed between equity fund spending and the African American student success measures of associate degrees and certificates awarded, and transfers completed. The study looked at data from

single college community college districts in California. The study was guided by the following research questions:

1. What relationship exists between Equity Fund spending and associate degrees and certificates awarded to African American students?
2. What relationship exists between Equity Fund spending and transfers completed among African American students?

The research questions were addressed using quantitative data, which were gathered from archival sources. More specifically, the California Community Colleges Chancellor's Office (CCCCO) apportionment reports were used for financial data and the LaunchBoard and IPEDS websites were used for student success measures. The population comprised of the 73 districts in the California community college (CCC) system, made up of 23 multi-college districts and 49 single college districts. The sample was comprised of the 49 single college districts, with a focus on African American students. Data on equity funding, total number of students, total number of African American students, degrees and certificates awarded, and transfers to four-year universities were collected for six school years from 2014-15 through 2019-20. Data were analyzed using SPSS to examine correlations between funding and the success metrics of African American students. The study was further expanded to include regression analysis to assess predictability of success based on the variables.

Major Findings and Implications

The research questions explored the relationship between student equity funding received by single campus CCC districts and educational attainment of African American students in terms of degrees and certificates awarded and transfers to four-year

universities. Data analysis showed strong positive correlation between funding and the total number of students and moderately positive correlations with the number of African American students and the success metrics for African American students. The first correlation was expected as funding was proportional to total student enrollment. The second correlation was also expected given as the number of African American students increased, so did the success metrics for African American students. Funding was also moderately correlated with African American student enrollment and the success metrics for African American students.

Given the strength of the correlations across all the variables, regression was utilized to determine whether financing, total students, and total African American students might be used as predictors of degrees and certificates awarded to and transfers to four-year universities among African Americans students. Looking over the years of data, the number of Black students enrolled was continuously significant, indicating that the number of African American students is the strongest predictor of the number of degrees and certificates issued to African American students and their transfer numbers to four-year universities.

Funding levels in relation to degrees and certificates awarded to African American students were significant in 2014-15, 2017-18, and 2018-19 school years, but not significant in 2015-16, 2016-17, or 2019-20. This was similar for transfers, which showed significance in 2014-15 and 2019-20 but no significance in 2015-16, 2016-17, 2017-18, and 2018-19.

The data indicated a moderate positive correlation between student equity funding and the number of degrees and certificates awarded to African American students as well

as the number of transfers completed among African American students. However, the regression analysis showed funding was only significant in three of the years examined and transfers were only significant in two of the years examined. This inconsistency seems a signal that the link between equity funding to success measures for African American students is inconclusive for that six-year period. Thus, it is not clear if the increase in equity funding had a significant role in increasing outcomes for African American students.

Notable is the fact that in 2014-2015, the first year of equity funds, funding suggested a positive correlation and showed significance in its predictive value, although the students completing their degree, certificate, or transfer that year likely did not benefit from the infusion of equity funds as they were already on the path to completion when the funds were introduced. The regression showed no significant different the following two academic years and inconsistent findings overall. It is also possible this attributable to inadequate system oversight and institutions presenting shallow efforts and lists of loosely related activities, especially in the early years of equity funding. Additionally, according to funding criteria, funds could be used to assist any endeavor that is sufficiently justified in terms of student equality planning, actions, and outcomes; thus, the colleges could have used these funds for a wide range of activities that varied across the institutions.

As equity funding continued and systems oversight tightened, institutions became more serious in planning and implementing required student equity plans. As colleges were in varying stages of equity plan completion, institutions were also faced with addressing the achievement gap and overall student progress simultaneously for all local

student groups as well as developing SSSP and Basic Skill Initiative plans. As a result of these multiple initiatives and priorities, program progress was affected. These efforts might have contributed to the inconsistency of the significance of funding to success metrics.

Another explanation for the inconsistent findings relates to timing. Planning a new program might take 9-12 months, particularly in the participatory governance setting mandated in the community colleges requiring input and involvement of all constituent groups. Once planning is completed, it could take several years of implementation to get systems in place, staff hired, and materials needed. As such, it could take several years of assessment following program implementation before results can be realized, especially for lagging indicators such as graduation and transfer rates. Thus, success metrics such as those utilized in this study may not be consistently evident until several years out.

Further complicating the issue and findings is the changing model and use of equity funds. Equity funds were first allocated to colleges in the 2014-15 academic year. However, the model changed when equity funds were merged with the SSSP and Basic Skills initiatives to form SEAP in 2017-18. This merger of funding streams resulted in greater levels of funding available to the colleges, but also new priorities, requirements, and flexibilities. This could have started a new cycle of planning, implementation, and assessment, adding to the increased period of inconclusive findings related to equity funding and success metrics.

This unpredictability of funding to student success metrics was also borne out in the literature. Some authors argued performance-based funding promoted both access to and completion of college and provided a measurement of institutional effectiveness and

enhanced responsibility (Miao, 2012; Zarkesh & Beas, 2004). However, critics of performance-based funding argued such support burdened institutions needlessly and success was not guaranteed (McKinney & Hagedorn, 2017; Zarkesh & Beas, 2004). Although performance-based funding promotes policies and procedures for improving student outcomes to obtain funding, an unintended result may be a greater emphasis on students more likely to achieve (McKinney & Hagedorn, 2017; Shulock, 2011). Thus, with performance-based funding, colleges serving a higher proportion of at-risk students may lose funding, making it harder to improve student outcomes (Bailey & Morest, 2006; McKinney & Hagedorn, 2017). Another performance-based funding opponent, Nicholas Hillman (2016), said pay-for-performance was a powerful concept but failed to produce favorable outcomes when implemented.

The preeminent predictor of success metrics (degrees and certificates awarded to and transfers of African American students) was the number of African American students enrolled. Data showed strong correlation ranging from .93 to .97 for the first and .75 to .85 for the latter. In the regression analysis, the number of African American students enrolled accounted for a large proportion of the variance of degrees and certificates awarded and transfers. Although the data showed the larger the number of African American students enrolled the greater the success measures, such success metrics declined in proportion to the total student population, indicating an achievement gap between African American students and their peers.

Part of that decline may be attributed to the lack of faculty and staff racial and ethnic composition mirroring those of the student body. The CCC staff are over 60% Caucasian whereas approximately 71% of the student body is comprised of other racial

and ethnic background, including Latino, African American, Asian, and Native American students. According to experts and research, a lack of faculty diversity hinders student academic performance (Peele & Willis, 2021). In response, scholars developed teaching approaches and practices, generally referred to as asset-based pedagogies, which use student cultural identities and life experiences as instructional aids. These instructional approaches base classroom education on the knowledge of traditionally excluded communities. Consequently, all students, and students of color, are empowered to become lifelong learners and critical thinkers (Will & Najarro, 2022). Ladson-Billings (1995) posited the failure of African American students was in part due to cultural differences or a cultural mismatch between the student and the institution. Diversity among the faculty offers benefits for all students; however, increasing faculty diversity may be especially beneficial for eliminating academic discrepancies among students of color. Llamas et al. (2021) investigated the effect of having a professor of the same race or ethnicity on student performance and their findings emphasized the need for a diverse staff to improve student achievement and, ultimately, grades and retention.

Even though more than half of the community college students are students of color, most institutions are structured according to the predominant culture of Caucasian Americans. The culture many students experience at home and in their communities is not always or stereotypically reflected in the educational setting. Ladson-Billings (1995) noted the concept of culturally relevant pedagogy could help student academic success and affirm cultural identity while encouraging them to explore other viewpoints. Her research also found culturally responsive teaching and related approaches enhanced student motivation, interest in the topic, and self-efficacy.

Various policies and the practice of gatekeeping classes may also hinder the improvement of students. Specifically, policies defining remedial education as the domain of community colleges have been particularly problematic, in part because remedial students have low completion and graduation rates, and the remedial education burden is often significant. Nationally, approximately one in four students who take remedial courses at community colleges graduate (Dowd, 2007).

Unexpected Findings

Data collection and reporting of ethnicity data was inconsistent between reporting agencies. The U.S. Department of Education guidelines implemented new guidelines for race and ethnicity data, and although the California Department of Education is requiring schools to collect and report data consistent with these federal requirements, full implementation across all institutions is lagging. Additionally, some student success data are not tracked by race or ethnicity, sufficiently disaggregated, or tracked by differing student cohorts. The lack of consistently collected data created challenge in analyzing some data and made other available data unusable. As the findings from this study were based on longitudinal data, improvements in data related to the success metrics were still in progress and the study may have been conducted too early as it takes time to implement new programs.

Strengths and Weaknesses of the Study

This research had three primary limitations. The first was that the study only looked at single college districts and not multi-college districts because funding was allocated at the district level whereas performance data were collected at the college level. As a result, the results are limited and may not be generalizable to the entire CCC

system. Second, the cohorts studied were African American students, but other under-represented groups confront similar equity disparities, especially in California where more than half the student population is Hispanic. The narrow focus on African American students may also limit broad use of the study findings to the CCC student population. Finally, other institutional factors not included in the study may influence student success outcomes, such as the level of direct counseling support (e.g., tracking and advising students to degree/certificate completion); the degree of integration of Basic Skills, SSSP, and Equity Funds; campus demographics; and other factors influencing student success.

Conclusions and Recommendation for Action

The study findings were constrained by limitations, which raised other topics that may be addressed or benefited from further research. The current analysis was limited to California's public two-year community college districts, with a special emphasis on single college districts within the CCC system. The study was also limited to assessing minority student success measures, specifically the educational performance of African American students at the study colleges. The following present conclusions followed by the implication for action for each conclusion.

Conclusion 1

Between 2014 and 2020 California Community Colleges spent $816,269,223 in Equity Funds to improve student achievement (CCCCO, 2021). Although there has been some slight movement in improving student success outcomes for African American students, there is a low correlation between funds spent and results. Results have not been as great as anticipated and are more connected statistically to the number of African

American students on campus rather than specific activities that may have been implemented using the equity funds. Based upon the findings, it was concluded that:

1. Equity Funding has not produced desired results for African American students based upon dollars spent.
2. Dollars spent via equity funds were not targeted to activities effecting significant movement, or in other words, a lot of dollars are expensed with little result for African American students.
3. It was further concluded the activities initiated were not specifically designed to meet the needs of African American students but rather, may have been canned activities that already existed and were not designed for the specific needs of African American or any specific group of students.
4. Initiating a group of activities for all minority students without differentiation between them ignores cultural, social, economic, and psychological differences among these groups.

Recommendations for Action for Conclusion 1

1. Colleges must review the outcomes for each activity funded with state equity funds considering the needs of each group of students to determine the success of each individual activity.
2. Colleges then must invent different activities based upon the needs of African American and other minority students. Each group may have unique needs. These activities must include social, emotional, economic, and psychological aspects of each group and must go beyond on-campus activities if these students are to be reached and positively impacted.

3. The CCC system must stop prescribing the activities funded by Equity Funds. Individual colleges must be given the freedom to develop site and student specific activities that are best for their college.
4. Some form of accountability for results must be developed and implemented by the California Community College System to assure that the funds spent achieve acceptable results in order to continue receiving those funds.

Conclusion 2

The findings indicated the strongest predictor of improved success for African American students was the number of African American students enrolled.

1. It was concluded that having an increased number of African American students on a campus will improve success for all those students.
2. It was further concluded there are positive and motivational social and emotional impacts of having more students enrolled who are of the same ethnicity.
3. By extension, it was further concluded there are positive and motivational social and emotional impacts of having more staff that mirror the ethnicity of the student body.

Implications for Action for Conclusion 2

As the greatest correlation to the success of African American students was the number of enrolled African American students. Implications from this conclusion are:

1. Funds should be set aside for the outreach and recruitment of African American students.

2. Efforts to increase enrollment of African American students should also be linked to strengthening faculty in culturally relevant teaching to further improve outcomes.
3. An inclusive curriculum assists instructors and students in appreciating the qualities of others and developing empathy. Thus, culturally relevant teaching can also assist educators in considering how their identities and experiences influence their attitudes and pedagogical methods.
4. Colleges also need to examine offerings to minimize gatekeeper classes, often remedial courses set as pre-requisites to transfer-level courses, which data show hinders success outcome improvements.

Recommendations for Future Study

Other institutional characteristics may influence student success outcomes that were not included in this study, such as the extent of direct counseling support, the degree of integration and allocation of state equity funding, campus demographics, and other unknown factors. Based on the limitations and findings of this study, further research should be conducted as follows:

- This study focused on African American students in single-college districts in the CCC system. This study should be replicated to include the multi-college districts and all of their under-represented student populations to strengthen the statistical adequacy to ascertain the effectiveness of funding levels on student success measures and closing the equity gap. Further disaggregation of data and standardized report formats would provide better alignment of data sources.

- This study applied a quantitative approach to examine student success metrics in relation to funding. A future study should take a qualitative approach to examine how equity funds are spent and what specific strategies are being implemented to improve the student success outcomes for African American students.
- A mixed-methods study shold be conducted using quantitative data to identify individual colleges that showed strong gains for African American students on the student success measures, and then apply qualitative methods such as case studies to examine the speficic activities these colleges implemented to make such gains. This could provide a deeper understanding of these findings and influence future funding and spending policies.
- This study focused on African American students. This study should be replciated with other racial and ethnic groups to determine if equity funds are benefiting all students or specific minority groups.
- This study focused at the school level, but the field would benefit from a qualitative study from the student perspective. Student interviews and focus groups should be conducted with students enrolled in or who have benefited from programs supported with state equity funding to identify and describe their perceptions of the impact of the programs.
- A futures Delphi study should be conducted to identify programs that are not currently offered that should be offered to address the needs of minority students.

- A predictive correlational study should be conducted to identify current variables existing in the CCC system that are the best predictors of success for minority students.

Concluding Remarks and Reflections

The purpose of this study was to examine the relationship between equity funding and success outcomes—degrees and certificates awarded and transfers to four-year universities—for African American students attending single college districts in the CCC system. What became apparent from the analysis of the data was that relationships between state equity funds and student success measures were inconclusive and further studies are warranted.

This study relied on the analysis of archival quantitative data because they were easy to obtain, free to collected from public sites, provided trustworthy historical information, and enabled a longitudinal perspective. Because I used publicly available aggregated data, I was not required to gain individual participant consent, which facilitated the data collection process. Nonetheless, there were a few unforeseen discoveries related to the data. The data were already collected from the colleges and readily available, but I had no control over how the data were collected, cleaned, verified, or presented. One unanticipated finding included inconsistent data aggregations and cohort definitions that varied from source to source, making some of the analyses more difficult or even impossible to complete. This highlights a need for more consistent longitudinal data systems used statewide to improve the tracking and consistency of data used to make policy and other decisions.

Given the newness of the equity funding stream, then the subsequent merging of equity funds with the student success and basic skills monies, and the length of time needed to implement new programs, this study might have benefitted from having additional years of data. Put in another way, the study may have been done too soon. Further contemplating the study's archival approach, a mixed methods or hybrid approach, such as adding interviews about the student experience, might have rounded out the research with student perspectives of the effectiveness of support activities to outcomes. In summary, the analysis laid bare how study discoveries, both anticipated and unanticipated, can quickly uncover the need for new research, hence perpetuating the cycle of ongoing research for improved understanding and outcomes.

REFERENCES

Acfalle, J. (2015). *Performance-based funding in California community colleges: Perceptions of administrator and faculty stakeholder groups* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global. (UMI No. 3746031)

American Psychological Association. (2017). *Education and socioeconomic status*. Washington, DC: Author.

American University School of Education. (2020). *School funding issues: How decreasing budgets are impacting student learning and achievement*. Retrieved from https://soeonline.american.edu/blog/school-funding-issues

Azzam, A. M. (2005). *The funding gap*. Retrieved from https://www.ascd.org/el/articles/-the-funding-gap

Bailey, M. J., & Dynarski, S. M. (2011). *Gains and gaps: Changing inequality in U.S. College entry and completion*. National Bureau of Economic Research. Retrieved from https://www.nber.org/system/files/working_papers/w17633/w17633.pdf

Bailey, T., & Morest, V. S. (2006). *Performance accountability as imperfect panacea: The community college experience*. Baltimore, MD: Johns Hopkins University.

Baker, B. D. (2017). *How money matters for schools*. Retrieved from https://learningpolicyinstitute.org/product/how-money-matters-report

Barrow, L., Brock, T., & Rouse, C. E. (2013). *Postsecondary education in the United States: Introducing the issue*. Retrieved from https://futureofchildren.princeton.edu/sites/futureofchildren/files/media/postsecondary_education_in_the_united_states_23_01_fulljournal.pdf

Bensimon, E. (2005). Closing the achievement gap in higher education: An organizational learning perspective. *New Directions for Higher Education, 2005* (131), 99–111. doi:10.1002/he.190

Bensimon, E., Hao, L., & Tomas-Bustillos, L. (2003, October). *Measuring the state of equity in public higher education*. Paper presented at the Harvard Civil Rights and UC Conference on Expanding Opportunity in Higher Education, Sacramento, CA

Billig, S. H., Jaime, I. I., Abrams, A., Fitzpatrick, M., & Kendrick , E. (2005). *Closing the achievement gap: Lessons from succesful schools*. Retrieved from https://eric.ed.gov/?id=ED491863

Boggs, G. R., & Johnson-McPhail, C. (2017). Closing the achievement gap [Blog]. Retrieved from https://www.higheredjobs.com/blog/postDisplay.cfm?post=1250&blog=18

Bohanon, M. (2017). *Report reveals global disparities in higher education access based on income, gender, and ethnicity*. Retrieved from https://www.insightintodiversity.com/report-reveals-global-disparities-in-higher-education-access-based-on-income-gender-and-ethnicity/

California Community College Chancellor's Office. (2012). *Scorecard: An accountability framework for the California community colleges.* Retrieved from https://www.cccco.edu/-/media/CCCCO-Website/About-Us/Divisions/Digital-Innovation-and-Infrastructure/Network-Operations/ARCC2/Files/x_Updated-ARCC-Scorecard-Framework.pdf

California Community Colleges Chancellor's Office. (2013). *Student success scorecard - 2013 state of the system report.* Retrieved from

http://californiacommunitycolleges.cccco.edu/portals/0/flipbooks/2013_stateofsystem/pdf/2013_studentsuccess_state_of_the_system_final.pdf

California Community Colleges Chancellor's Office. (2015). *Student equity funding formula - funding allocation methodology*. Sacramento, CA: Author. Retrieved from http://extranet.cccco.edu/Divisions/StudentServices/StudentEquity.aspx

California Community Colleges Chancellor's Office. (2016). *Student success and support program (SSSP) - 2016 program handbook*. Retrieved from http://extranet.cccco.edu/portals/1/sssp/matriculation/sssp%20handbook%202014/2016%20sssp%20handbook_final%20(3).pdf

California Community Colleges Chancellor's Office. (2018). *Student equity and achievement (SEA) program expenditure guidelines*. Sacramento: CA: Author. Retrieved from https://www.cccco.edu/-/media/cccco-website/files/educational-services-and-support/seap/sea-expenditure-guidelines-a11y.pdf?la=en&hash=727e66839ecaef94fc21b52b43ad0b6ce3e46045

California Community College Chancellor's Office. (n.d-a.). *Development of the chancellor's office scorecard metrics* Sacramento. Retrieved from http://extranet.cccco.edu/portals/1/tris/research/accountability/arcc2_0/development%20of%20scorecard%20metrics2.pdf

California Community College Chancellor's Office. (n.d.-b). *Basic skills & english as a second language.* Retrieved from https://www.cccco.edu/About-Us/Chancellors-Office/Divisions/Educational-Services-and-Support/What-we-do/Basic-Skills-and-English-as-a-Second-Language

California Community College Chancellor's Office. (n.d.-c). *The California promise. What we do.* Retrieved from https://www.cccco.edu/about-us/chancellors-office/divisions/educational-services-and-support/student-service/what-we-do/california-promise

California Community College Chancellor's Office - Fiscal Services. (2017). *2016-17 recalculation apportionment*.

California Community College Chancellor's Office - MIS Data Mart. (n.d.). *Management information systems data mart.*

California Community Colleges Student Success Task Force. (2012). *Advancing student success in the California Community Colleges.* Sacramento, CA. Retrieved from http://www.californiacommunitycolleges.cccco.edu/StudentSuccessInitiative/Reports.aspx

Callas, P. (2020). *Early commitment to college*. Retrieved from https://www.cde.ca.gov/ci/gs/ps/ecc.asp

Camera, L. (2016). The college graduation gap is still growing [Blog post]. Retrieved from http://www.usnews.com/news/blogs/data-mine/2016/03/23/study-college-graduation-gap-between-blacks-whites-still-growing

Campbell, C., Cochrane, D., Love, I., & Bruecker, E. (2017). *Aiding success the role of federal and state financial aid in supporting California community college students*.

Card, D. (1998). *The causual effect of education on earnings.* Retrieved from http://davidcard.berkeley.edu/papers/causal_educ_earnings.pdf

Center for Urban Education. (2015). *Analysis of California community colleges student equity plan policy.* Retrieved from https://cpb-us-e1.wpmucdn.com/sites.usc.edu/dist/6/735/files/2016/01/cue-analysis-of-sep-design-feb-2015.pdf

Chavez, J. (1997). *Pursuing student equity: A study of an effective community college in California* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global. (UMI No. DP27611)

Choroszy, M. N., & Meek, T. M. (2020). *Success for all: Programs to support students throughout their college experience*. Reno, NV: University of Nevada Press.

College Board. (n.d.). *Early decision & early action*. Retrieved from https://professionals.collegeboard.org/guidance/applications/early

Cooper, M. (2010). *Student support services at community colleges: A strategy for increasing student persistence and attainment*. Retrieved from https://findit.ed.gov/search?utf8=%E2%9C%93&affiliate=ed.gov&query=student+support+services+at+community+colleges

Creswell, J. W. (2003). *Research design qualitative, quantitative, and mixed methods approaches.* Thousand Oaks, CA: SAGE Publications.

Creswell, J. W. (2014). *Research design qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: SAGE Publications.

Darling-Hammond, L., & Sutcher, L. (2016). *Equity gap in California: What the new test scores tell us*. Retrieved from https://edsource.org/2016/equity-gap-in-california-what-the-new-test-scores-tell-us/569435

Darvas, P., Gao, S., Shen, Y., & Bawany, B. (2017). *Sharing higher education's promise beyond the few in Sub-Saharan Africa*. Retrieved from https://documents1.

worldbank.org/curated/en/862691509089826066/pdf/120693-pub-public-pubdate-10-25-17.pdf

Dougherty, K., & Reddy, V. (2013). *Performance funding for higher education: What are the mechanisms? What are the impacts?* Washington, DC: Community College Research Center.

Dougherty, K. J., Jones, S. M., Lahr, H., Natow, R. S., Pheatt, L., & Reddy, V. (2014). Performance funding for higher education. *The ANNALS of the American Academy of Political and Social Science, 655*(1), 163-184. doi:10.1177/0002716214541042

Dougherty, K. J., & Natow, R. S. (2015). *The politics of performance funding for higher education: Origins, discontinuance, and transformations* Retrieved from https://books.google.com/books?hl=en&lr=&id=rp_kbwaaqbaj&oi=fnd&pg=pr5&dq=the+politics+of+performance+funding+for+higher+education:+origins,+discontinuance,+and+transformations&ots=innqbkslim&sig=p-xpmujyxp2qyxufhfk01hlugm0#v=onepage&q=the%20politics%20of%20performance%20funding%20for%20higher%20education%3a%20origins%2c%20discontinuance%2c%20and%20transformations&f=false

Education Code, section 84362, California, Pub. L. No. EC 84362, Fifty Percent Law Stat. (California Legislature n.d.).

Ehrenfreund, M. (2015). When public schools get more money, students do better [Blog post]. Retrieved from https://www.washingtonpost.com/news/wonk/wp/2015/01/20/when-public-schools-get-more-money-students-do-better/?utm_term=.dc96435c872c

El Fattal, D. (2014). *To what degree does money matter for student success? A quantitative examination of the relationship between institutional spending and student success outcomes* (Doctoral dissertation). Available from ProQuest Dissertations & Theses. (UMI No. 3581492)

Fong, P. (2010). *AB-2302 Postsecondary education: Student transfer*. Retrieved from http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200920100AB2302

Freeling, N. (2015). *Napolitano: Transfer pathway is key to UC's success* [Press release]. Retrieved from https://www.universityofcalifornia.edu/news/napolitano-addresses-nations-community-college-leaders

Frey, S. (2013, December). *Report: College achievement gap persists between African American, White students*. EdSource.

Giovetti, O. (2020). *How does education affect poverty? It can help end it*. Retrieved from https://www.concernusa.org/story/how-education-affects-poverty/#:~:text=According%20to%20UNESCO%2C%20if%20all,rate%20by%20more%20than%20half

Gomes, J. F. (2007). *Access and equity in higher education across the world.* Paper presented at the Global Higher Education Forum (GHEF), Malaysia. Retrieved from: http://www.fc.up.pt/pessoas/jfgomes/politicaEnsinoSuperior.html

Guichard, G. (1992). *Student equity policy: A status report*. Retrieved from https://eric.ed.gov/?id=ED351068

Guichard, G. (2000). *Achieving student equity: History and current status*. Retrieved from http://search.proquest.com/docview/62358797?accountid=10051

Haycock, K. (2001). Closing the achievement gap. *Educational Leadership, 58*, 6-11.

Hayward, G. C., Jones, D. P., McGuinness, J., Aims C., & Timar, A. (2004). *Ensuring access with quality to California's community colleges*. Retrieved from http://www.highereducation.org/reports/reports_center_2004.shtml

Heiman, J., & Metxker, B. (2016). *California community colleges: Second progress report on the Student Success Act of 2012*. Retrieved from http://www.lao.ca.gov/Publications

Henestroza, M. (2015). *Analysis of California community colleges student equity plan policy*. Retrieved from https://cue.usc.edu/files/2016/01/CUE-Analysis-of-SEP-Design-Feb-2015.pdf

Hillman, N. (2016). *Why performance-based college funding doesn't work*. Retrieved from https://tcf.org/content/report/why-performance-based-college-funding-doesnt-work/

Hu, X. (2019). Efficiency for whom? Varying impact of performance-based funding on community colleges in Louisiana. *Community College Review, 47*(4), 323-359.

Humme, A. (2012). Education is a right, not a privilege [Blog]. Retrieved from https://www.globalpartnership.org/blog/education-right-not-privilege

Johnson, H. (2014). *Making college possible for low-income students: Grant and scholarship aid in California*. Retrieved from http://www.ppic.org/main/publication.asp?i=1117

Johnson-McPhail, C. (2011). *The completion agenda: A call to action*. Retrieved from http://www.aacc.nche.edu/Publications/Reports/Pages/default.aspx

Julian, T. (2012). *Work-life earnings by field of degree and occupation for people with a bachelor's degree: 2011*. Retrieved from https://eric.ed.gov/?id=ED537269

Julian, T., & Kominski, R. (2011). *Education and synthetic work-life earnings estimates*. Retrieved from http://www.census.gov/library.html

Kim, J. (2017). *The 5 most commonly found metrics for student success*. Retrieved from https://evisions.com/resources/blog/5-commonly-found-metrics-student-success/

Kirabo, J., C., Johnson, R. C., & Persico, C. (2015). *The effects of school spending on educational and economic outcomes: Evidence from school finance reforms*. Retrieved from http://www.nber.org/

Kirabo, J. C. (2018). *Does school spending matter? The new literature on an old question*. Paper presented at the Fall 2018 Bronfenbrenner Center for Translational Research Conference, Cambridge, MA. Retrieved from https://www.nber.org/system/files/working_papers/w25368/w25368.pdf

Klepfer, K., Cornett, A., Fletcher, C., & Webster, J. (2019). *Student financial wellness survey: Fall 2018 semester results.* Retrieved from http://www.trelliscompany.org/about-trellis/

Legislative Analyst Office. (2010). *Modifying 50 percent law to enhance support services.* Retrieved from https://lao.ca.gov/analysis/2010/highered/Highered_anl10.aspx#zzee_link_54_1266972412

Leiva, L. (2019). *The college admissions scandal is peak white privilege — & it's nothing new*. Retrieved from https://www.refinery29.com/en-us/2019/03/226895/college-admission-scandal-rich-white-privilege-backlash

Luster, P. T. (2010). *Discovering effective student equity practices in California community colleges: An action research study* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global. (UMI No. 3397541)

Lynch, M. (2016). How colleges can close the achievement gap [Blog post]. Retrieved from http://blogs.edweek.org/edweek/education_futures/2016/09/_how_colleges_can_close_the_achievement_gap.html

Maoláin, A. Ó. (2013, November). Access to higher education must be a global priority. *University World News,* 295.

McKibben, B., La Rocque, M., & Cochrane, D. (2014). *Protecting colleges and students: Community college strategies to prevent default.* Washington, DC: Association of Community College Trustees. Retrieved from https://ticas.org/wp-content/uploads/legacy-files/pub_files/Protecting_Colleges_and_Students.pdf

McKinney, L., & Hagedorn, L. S. (2017). Performance-based funding for community colleges: Are colleges disadvantaged by serving the most disadvantaged students? *The Journal of Higher Education, 88*(2), 159-182. doi:http://dx.doi.org/10.1080/00221546.2016.1243948

McMillan, J. H., & Schumacher, S. (2010). *Research in Education - Evidence-Based Inquiry* (7th ed.). Upper Saddle River, NJ: Pearson Education, Inc.

Miao, K. (2012). *Performance-based funding of higher education - A detailed look at best practices in 6 states*. Retrieved from https://www.americanprogress.org/

Mintz, S. (2019). *Community colleges and the future of higher education*. Retrieved from https://www.insidehighered.com/blogs/higher-ed-gamma/community-colleges-and-future-higher-education

Moola, N. (2015). *Is higher education a right or a privilege?* Retrieved from https://m.news24.com/xArchive/Voices/is-higher-education-a-right-or-a-privilege-20180719

Moore, C., Offenstein, J., & Shulock, N. (2011). *Consequences of neglect: Performance trends in California higher education*. Retrieved from https://eric.ed.gov/

Moore, C., & Shulock, N. (2010). *Divided we fail in LA: Improving completion and closing racial gaps in the Los Angeles Community College District*. Retrieved from https://eric.ed.gov/

Nadworny, E. (2019). *As elite campuses diversify, a 'bias towards privilege' persists*. Retrieved from https://www.npr.org/2019/03/05/699977122/as-elite-campuses-diversify-a-bias-towards-privilege-persists

Nelson, S. C., & Breneman, D. W. (1981, March). An equity perspective on community college finance. *Public Choice*. doi:10.1007/978-94-009-7398-5_13

Noldon, D. (2015). *2015-16 student equity plan template.* Sacramento, CA: California Department of Education.

O'Banion, T. (2011). Pathways to completion: Guidelines to boosting student success. *Community College Journal, 82*(1), 28-34.

Patton, M. Q. (2015). *Qualitative research & evaluation methods* (4th ed.). Thousand Oaks, CA: SAGE Publications.

Portantino, A. (2007). *AB 668: California community college student federal and state financial aid opportunity act*. Retrieved from https://collegecampaign.org/wp-content/uploads/2014/06/2007_07_26_CCO_AB668_Fact_Sheet.pdf

Quinton, S. (2016). The student debt crisis at state community colleges. *Pew Stateline*.

Racioppi, G. W. (2014). *An examination of the relationships among student services expenditures, Pell Grant funding, and completion rates at public community colleges* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global. (UMI No. 3623921)

Roser, M., & Esteban, O. (2020). *Tertiary education*. Retrieved from https://ourworldindata.org/tertiary-education#citation

Ross, T., & Kena, G. (2012). *Higher education: Gaps in access and persistence study*. Retrieved from https://nces.ed.gov/pubs2012/2012046.pdf

Sawhill, I. V. (2013). *Higher education and the opportunity gap*. Retrieved from https://www.brookings.edu/research/higher-education-and-the-opportunity-gap/

Schmidt, P. (1996). More states tie spending on colleges to meeting specific goals. *Chronicle of Higher Education*, 1-5.

Scott-Skillman, T. (1992). *Student services and special programs: A report on program effectiveness.* Retrieved from https://eric.ed.gov/?q=scott-skillman&ft=on

Shulock, N. (2011). *Concerns about performance-based funding and ways that states are addressing the concerns*. Retrieved from http://www.sheeo.org/resources/publications/concerns-about-performance-based-funding-and-ways-states-are-addressing

Smith, C. P. (2015). *Impact of intended and unintended outcomes of performance-based funding on community colleges* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global. (UMI No. 10031764)

Smith, M. F. (2015). *Performance based funding in higher education*. Paper presented at the NCSCBHEP Conference, New York, NY. Retrieved from http://thekeep.eiu.edu/cgi/viewcontent.cgi?article=1476&context=jcba

Stanford. (n.d.). *Racial and ethnic achievement gaps.* Stanford, CA: Stanford Univeristy. Retrieved from https://cepa.stanford.edu/educational-opportunity-monitoring-project/achievement-gaps/race/

Student Aid Commission. (n.d.). *What are graduation, retention, and transfer rates?* Retrieved from https://studentaid.gov/help/graduation-retention-transfer-rates

Taylor, K. R. (2017). Poverty's long-lasting effects on students' education and success. *Insight into Diversity*.

Taylor, M. (2014). *California community colleges: A progress report on the Student Success Act of 2012*. Retrieved from http://www.lao.ca.gov/Policy-Areas?areaId=4&category=&Year=2014&formatType=&phrase=

Taylor, M. (2016). *California community colleges: Second progress report on the Student Success Act of 2012*. Retrieved from http://www.lao.ca.gov/Policy-Areas?areaId=4&category=&Year=2016&formatType=&phrase=

Todd, J., Holcroft, C., & Evett, C. (2014). *The challenges of student equity plans*. Retrieved from https://www.asccc.org/content/challenges-student-equity-plans

Tschechtelin, J. D. (2011). Increased enrollment + student success – funding = ? *Wiley Online*. doi:10.1002/cc.466

U.S. Census Bureau. (2000). *Earnings, by highest degree earned.* Washington, DC: U.S. Census Bureau. Retrieved from http://www.allcountries.org/uscensus/252_ earnings_by_highest_degree_earned.html

U.S. Census Bureau. (2010). *2010 census.* Washington, DC: U.S. Census Bureau. Retrieved from http://www.census.gov/content/dam/Census/library/publications/2016/demo/p20-578.pdf

U.S. Department of Education. (2015). *Fact sheet: Focusing higher education on student success.* Washington, DC: U.S. Department of Education. Retrieved from https://www.luminafoundation.org/resources/fact-sheet-focusing-higher-education-on-student-success

UNESCO Institute for Statistics. (2015). *A growing number of children and adolescents are out of school as aid fails to meet the mark.* Montreal, Canada: UNESCO. Retrieved from http://uis.unesco.org/en/documents

University of California President's Office. (1999). *California master plan for higher education* [Press release]. Retrieved from http://ucfuture.universityofcalifornia.edu/files/pdf/ca_masterplan_summary.pdf

Vieira, D., Mutize, T., & Roser Chinchilla, J. (2020). *Understanding access to higher education in the last two decades*. Retrieved from https://www.iesalc.unesco.org/en/2020/12/23/understanding-access-to-higher-education-in-the-last-two-decades/

Waiwaiole, E. N. (2017). *Making ends meet*. Retrieved from https://www.ccsse.org/docs/Making_Ends_Meet.pdf

Wells, A. M. (2008). Trends of population growth and student demographic change in the State of California. *The Vermont Connection, 29,* 64-71.

Wild, L., & Ebbers, L. (2002). Rethinking student retention in community colleges. *Community College Journal of Research and Practice, 26*, 503-519. doi:10.1080/02776770290041864

Williams, C. (2011). Research methods. *Journal of Business & Economics Research,* 5. doi:https://doi.org/10.19030/jber.v5i3.2532

Zarkesh, M., & Beas, A. M. (2004). UCLA community college review: Performance indicators and performance-based funding in community colleges. *Community College Review, 31* (4).

APPENDICES

APPENDIX A – SYNTHESIS MATRIX

	Higher Education	Socio-Economic/ Financial	Student Success	Equity	Access	Performance	Completion	Funding	Equity Gap
Acfalle, J. (2015)						x		x	
Altstadt, D. (2012)	x					x		x	
American Psychological Association. (2017)	x	x							
Azzam, A.M. (2005)	x							x	x
Baker, B. D. (2017)			x					x	x
Bensimon, E. (2005)			x	x		x	x		
Bensimon, E., Hao, L., & Tomas-Bustillos, L. (2003, October)				x					
Billig, S. H., Jaime, I. I., Abrams, A., Fitzpatrick, M., & Kendrick, E. (2005)			x	x					
Boggs, G.R, Johnson McPhail, C (2017)									x
Bohanon, M. (2017)	x	x							
Callas, P. (2020)	x		x						
Camera, L. (2016)	x				x		x		x
Campbell, C., Cochrane, D., Love, I., & Bruecker, E. (2017)		x	x						
Card, D. (1998)	x		x						
CCCCO. (2012)			x						
CCCCO. (2018)			x	x					
CCCCO. (n.d.)			x						
CCCCO. (n.d.)			x						
CCCCO - Fiscal Services. (2014-15)								x	
CCCCO - Fiscal Services. (2016-17)								x	
CCCCO - MIS Data Mart. (n.d.)			x						
Chavez, J. (1997)				x	x	x			
Choroszy, M. N., & Meek, T. M. (2020)		x							
College Board. (n.d.)		x							
AB 2542: Accelerated Student Success College of 2010, California State Assembly (2010)		x							
Cooper, M. (2010)						x	x		
Darling-Hammond, L., & Sutcher, L. (2016)				x					x
Dougherty, K. J., Jones, S. M., Lahr, H., Natow, R. S., Pheatt, L., & Reddy, V. (2014)	x							x	
Ehrenfreund, M. (2015)			x					x	
Fattal, D. E. (2014)			x		x	x	x	x	
Fong, P. (2010)	x		x						
Freeling, N. (2015)	x		x						
Frey, S. (2013, December)			x	x	x	x	x		x
Giovetti, O. (2020)	x	x							
Gomes, J. F. (2007)				x	x				

Guichard, G. (1992)				x				x	
Guichard, G. (2000)				x				x	
Hawk, J. R. (2014)				x		x		x	
Haycock, K. (2001)									x
Hayward, G. C., Jones, D. P., McGuinness, J., Aims C., & Timar, A. (2004)			x		x				
Heiman, J., & Metxker, B. (2016)			x						
Henestroza, M. (2015)			X	X		X		X	
Hillman, N. (2016)	x							x	
Hollabaugh, K. M. (2009)			x	x		x	x	x	
Humme, A. (2012)	x								
Johnson-McPhail, C. (2011)			x			x	x		
Johnson, H. (2014)			x	x	x				
Julian, T. (2012)	x	x							
Julian, T., & Kominski, R. (2011)	x	x							
Kirabo, J. C. (2018)			x					x	x
Kirabo-Jackson, C., Johnson, R. C., & Persico, C. (2015)			x					x	
Klepfer, K., Cornett, A., Fletcher, C., & Webster, J. (2019)		x							
Leiva, L. (2019)	x	x							
Lowenthal, A., Liu, C., Block, M., Portantino, A., & Olsen, K. (2012)			x		x				
Luster, P. T. (2010)			x	x	x	x	x		
Maoláin, A. Ó. (2013, November)	x			x					
McKibben, B., La Rocque, M., & Cochrane, D. (2014)		x							
McKinney, L., Hagedorn, L. S. (2017)								x	
Miao, K. (2012)	x					x		x	
Moola, N. (2015)	x								
Moore, C., & Shulock, N. (2010)							x		
Moore, C., Offenstein, J., & Shulock, N. (2011)						x			
Nadworny, E. (2019)		x							
Nelson, S. C., & Breneman, D. W. (1981, March)				x				x	
Noldon, D. (2015)			x	x		x		x	
O'Banion, T. (2011)			x						
AB 1417, Chapter 581, (2004)	x								
Quinton, S. (2016)		x							
Racioppi, G. W. (2014)			x			x	x	x	
Roser & Esteban. (2020)	x								
Ross, T., Kena, G. (2012)									x
SB-1709 Postsecondary education: College Opportunity Act of 2006, SB 1709, California State Assembly (2006)	x		x						
SB 890: Early Commitment to College, (2008)			x						
Schmidt, P (1996)						x		x	
Scott-Skillman, T. (1992)			x			x			
Senate Bill 860 - Education finance: education omnibus trailer bill (2014)								x	

Community colleges: student success and completion: taskforce and plan, (2010)			x						
Shulock, N. (2011)						x		x	
Shulock, N., & Jenkins, D. (2011)						x		x	
Shulock, N., Offenstein, J., & Esch, C. (2011)						x		x	
Smith, C. P. (2015)						x		x	
Smith, M. F. (2015)	x					x		x	
Stanford (n.d.)									x
Student Aid Commission (n.d.)	x						x		
Taylor, K. R. (2017)	x	x							
Taylor, M. (2014)			x	x	x	x	x		
Taylor, M. (2016)			x	x	x	x	x		
Topham, S. (2016)			x					x	
Tschechtelin, J. D. (2011)			x		x			x	
U.S. Census Bureau (2000)	x	x							
U.S. Census Bureau (2010)	x	x							
U.S. Department of Education [ED] (2015)	x		x						
U.S. Dept of Education (2016)			x		x		x	x	
UNESCO Institute for Statistics (2015)	x	x							
University of California President's Office. (1999)			x						
Waiwaiole, E. N. (2017)		x							
Wells, A. M. (2008)			x	x	x	x			
Zarkesh, M., Beas, A. M. (2014)						X		X	

APPENDIX B: NIH CERTIFICATE

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Yulian Ligioso** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 05/22/2016.

Certification Number: 2078236.

APPENDIX C: BUIRB APPROVAL

IRB Application Approved As Submitted: Yulian Ligioso
Inbox

Fri, Apr 8, 7:35 AM

Institutional Review Board <my@umassglobal.edu>
to yligioso, pendley, vsmithsa, irb

Dear Yulian Ligioso,

Congratulations, your IRB application to conduct research has been approved by the UMass Global Institutional Review Board. This approval grants permission for you to proceed with data collection for your research. Please keep this email for your records, as it will need to be included in your research appendix.

If any issues should arise that are pertinent to your IRB approval, please contact the IRB immediately at IRB@umassglobal.edu. If you need to modify your IRB application for any reason, please fill out the "Application Modification Form" before proceeding with your research. The Modification form can be found at the following link: https://irb.umassglobal.edu/Applications/Modification.pdf.

Best wishes for a successful completion of your study.

Thank you,
Doug DeVore, Ed.D.
Professor
Organizational Leadership
IRB Chair
[redacted]
www.umassglobal.edu