FACULTY DIVERSITY IMPACT ON HISTORICALLY UNDERSERVED RUNNING START STUDENTS OF COLOR (HUSC) ACCESS RATES AT WASHINGTON STATE COMMUNITY AND TECHNICAL COLLEGES

BY

Kristi Wellington-Baker

A dissertation submitted in partial fulfillment

of the requirements for the degree of

DOCTOR OF EDUCATION

CITY UNIVERSITY OF SEATTLE

2020

Approval Signatures:

Michele Weber — 12/2/20

Michele Weber, Ph.D., Committee Chair — Date

Paul Gerhardt — 11/25/20

Paul Gerhardt, Ph.D., Committee Member — Date

Craig Schieber — 11.25.20

Craig Schieber, Ed.D., Committee Member — Date

Vicki Butler — 12-4-2020

Vicki Butler, Ed.D., Dean — Date

ABSTRACT

Nationally and in Washington State, historically underserved students of color (HUSC) continue to lag behind their dominant culture white peers in accessing and attaining high-value credentials through institutions of higher education (Dupree, 2018a; Taylor, 2015). Access to dual-enrollment programs has been identified as an opportunity to decrease college costs and smooth the transitions between high school and college experiences (Burns et al., 2019; Hoffman et al., 2008; Wang et. al, 2015). To further understand the relationship between the faculty diversity of the Washington State Community and Technical Colleges (WSCTC) system and access rates of HUSC in the Running Start dual-enrollment program, the researcher examined the correlation between the diversity score (Stout et al., 2018) assigned to WSCTC's based on the diversity rates of part- and full-time faculty and access rates of HUSC Running Start dual-enrollment students in Washington State. Data for this study were extracted from the WSCTC State Board public dashboards. The researcher employed a linear regression analysis to generate descriptive and inferential statistics which revealed no clear relationship between the change in diversity rates of faculty and HUSC access rates to Running Start in Washington. As a foundation for further research, the influence of minimal changes in faculty diversity rates across the state provides an opening for a larger scale study where the rates of faculty diversity improved more substantially to analyze the relationship as well as the length of time faculty diversity rates have aligned with the community at critical mass allowing for institutional culture, policy, and practice impacts to be borne out in access rates.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGMENTS

2020 has been year for the history books in every possible way. A pandemic has stressed our healthcare and educational systems, the racist structural building blocks of our society have been laid bare, and our socio-political climate is more polarized than I have witnessed in my lifetime. Yet, this disruption has also moved me to write, and for the privilege to do so, I am grateful. I work in higher education with remarkable colleagues, students, and friends who inspire me daily to work together toward a vision of "a system that advances racial, social, and economic justice" in our collective efforts. I had the privilege of working with an amazing chair, Dr. Michele Weber, whose continuous assurance that I would finish if I just kept writing and revising made all the difference. You epitomize the experience every student should have with their faculty, thank you. Dr. Dereshiwsky, thank you for continuing to support my learning each step along the way, and to my committee, Dr. Craig Schieber, and Dr. Paul Gerhardt, for the insightful feedback and direction throughout the entire process.

Completing doctoral coursework and writing a dissertation challenged me academically and was enhanced by the encouragement of many, while a few colleagues stand out. Dr. Jessica Gilmore, Dr. Debra Bragg, Dr. Lia Wetzstein, Dr. Carli Schiffner, Dr. Joyce Hammer, and Dr. Cynthia Olivo, thank you. Your tribe makes a difference, and these women have been instrumental in fostering my belief that this teenage mom could become the first in my family to complete a doctoral degree.

Finally, none of this would have been possible without my family. To my husband, who never wavered in his support of my work and academics, thank you. To my children, who have supported and cheered me on along the way- thank you. Anthony, you inspired me to complete each academic milestone so our life would look different than it did at the beginning, thank you

for your patience and constant support. Annelyse, you model for so many women what taking the academic path less traveled looks like, thank you for choosing your own way. Nico, this has not been an easy year to be in college, yet you made the challenging choices required of you in an unprecedented time. I am so proud of your continued focus on finding your own way. To my Aunt Kathy, Sandy, and parents who supported my academic achievements throughout my life, I couldn't have done it without you.

CHAPTER 1: INTRODUCTION TO THE STUDY

In 1779, Thomas Jefferson proposed a bifurcated educational system with two tiers. He described the design as one for the "labored and the learned," intentionally limiting academic advancement opportunities for the laboring class. Throughout the history of the United States, that initial design has been reinforced along racial lines. In the late 1700s, the creation of land-grant universities as part of the development of townships was bound up in the assumption that the Continental Congress had the right to give away Native American-occupied land, and further reinforced the systemic oppressive foundations upon which the higher education system was constructed.

As the 19th-century educational system evolved, laws were written to systematize the historical racial oppression and related discriminatory practices starting with outlawing teaching slaves to read in the southern states. When that practice was outlawed, the laws were enacted such as the rule of 10, which allowed public education systems to create a separate school for white and non-white children when 10 African American, Asian American, or American Indian students were enrolled. Over the next two centuries, a multitude of laws and practices continued to root racism into the United States' educational system, resulting in race and income becoming a clear predictor of success in the access, progression, and completion of a meaningful credential in higher education (Bowen et al., 2005; De Los Ríos et al., 2015).

Nationally and in Washington State, historically underserved students of color (HUSC) as defined by the State Board for Community and Technical Colleges (SBCTC) continue to lag behind their dominant culture white peers in accessing and attaining high- value credentials through institutions of higher education (Dupree, 2018b; Taylor, 2015). Access to dual-enrollment programs has been identified as a clear opportunity to decrease college costs and

smooth the transitions between high school and college experiences (Burns et al., 2019; Hoffman et al., 2009; Wang et al., 2015) for all students, particularly higher education for underserved students. However, the racial equity gap remains consistent across dual-enrollment participation rates in the Washington State Running Start program, which was intended to improve transition rates of all students from high school to college and open opportunities for access to higher education for HUSC.

The factors that influence participation in Running Start are complex; improving the faculty diversity has emerged as an opportunity for building the culture of inclusiveness needed for more HUSC to succeed (Bolton et al., 2017; Malcom-Piqueux & Bensimon, 2017; Malin et al., 2017; Osei-Kofi et al., 2010; Wilkins & Burke, 2015). The researcher considered what correlation exists, if any, between the diversity of faculty within community and technical colleges and the participation, retention, and completion rates of HUSC in the Running Start program in Washington State.

Study Background

While the last decade has seen changes in the public perception of the value of higher education, completion of a postsecondary credential has been identified as a critical foundation for a successful pathway to economic and social mobility (Baum et al., 2013; Coley & Baker, 2013). This research has been reinforced over the last four decades through various studies including those at the Pew Trust, Brookings Institute, and others (Coley & Baker, 2013; Strumbos et al., 2018; Tarabini & Jacovkis, 2012). However, the gap in educational access and attainment persists for students of color and those individuals from the lowest-income quartile (Baum et al., 2013).

This challenge persists despite a multitude of strategies employed to support students, including boutique programs, such as the national TRiO and Gear Up programs, and other federal, state, and local initiatives. For HUSC, this challenge is exponentially compounded by the racialized systemic barriers inherent in the higher education system (Crisp et al., 2009; Martínez Alemán, et al., 2015; Museus et al., 2015), which further exacerbates the racial equity educational attainment and wealth gap in this country.

As one of a host of strategies designed to address the college access gap and emerging workforce needs in the state, Washington State passed legislation in 1990 (RCW 28A.600.300, 1990) that launched the Running Start dual-enrollment program. While the program has grown significantly over the past 25 years since the legislation passed, the equity gap among dominant culture students and their historically underserved peer group remains. In a recent study examining the disaggregated enrollment in Running Start by the Washington State Board for Community and Technical Colleges, positive college-going and completion rates of participants outpaced their non-participant peers, demonstrating the compounding cost of inequities in the participation rates of historically underserved low-income students of color (Dupree, 2018a).

Current State of the Field

In the wake of the 2008 recession, policymakers and industry and educational leaders acknowledged that in order to address the shifting economy's workforce needs, the United States needed to address the educational attainment gap between industry needs and a relevant credentialed workforce. As additional studies have shown, the post-2008 recession recovery was bifurcated along educational attainment lines (Carnevale et al., 2016). According to the study, nearly every job created after the recession was filled with individuals with some college experience. Of those, 96% of the jobs with annual salaries and health and retirement benefits

deemed “good jobs” were filled with individuals who had earned a bachelor’s degree. What does that mean when systemic postsecondary access and attainment inequities result in disparate outcomes for HUSC and low-income students? The divided recovery was effectually defined by race and income.

In 2009, President Barack Obama and his administration set a “2020 goal” of increasing postsecondary educational attainment rates to 60% of 25-to-34 year-olds and from 38 to 60% of 25-to-64-year-olds by 2025 (Fry, 2017). States quickly followed suit, and 43 states identified postsecondary degree attainment goals as their share of the national goal. In 2013, Washington State policymakers and industry and educational leaders set ambitious educational attainment goals adopted by the state legislature. Those statewide attainment goals, that all adult Washingtonians age 25-44 would have a high school diploma and a minimum of 70% of adult Washingtonians age 25-44 would hold a postsecondary credential, are aligned with the goals defined in a recently released Washington State strategic plan. In the Talent and Prosperity for All Strategic Plan (2020), industry and education leaders and policymakers have designed framework and detailed strategies to achieve those goals (*Talent and Prosperity for All: The Strategic Plan for Unlocking Washington’s Workforce Potential*, 2020), heavily focused on smoothing out the transition points for individuals in need of a relevant postsecondary credential. Improving educational attainment rates and closing equity gaps in Washington State are critical to workforce development, and, as the state and country move through this new economic crisis, are critical to building the necessary workforce prepared to support an economic recovery designed for all.

According to the Integrated Postsecondary Education Data System (IPEDS, 2018), Washington community and technical college students make up nearly 40% of all students

enrolled in public institutions of higher education, with nearly half of those students identifying as HUSC. In addition, nearly 40% of all baccalaureate graduates in Washington start their academic career at a community or technical college. However, nationally and in Washington State, HUSC continue to exit the educational pipeline at higher rates than their dominant culture white peers (Dupree, 2018a; Taylor, 2015).

Evidence regarding one of the most critical junctures along the pathway to postsecondary credential completion, the high school to college transition, reveals an attrition rate of nearly 40%, impacted minimally when accounting for military service entrance (Office of the Superintendent of Public Instruction, 2019). When one disaggregates the data by race and income, those students who do not transition into postsecondary education disproportionately represent low income historically HUSC (Office of the Superintendent of Public Instruction, 2019). This transitional equity gap reveals potential opportunities for systemic changes to address the equity gaps that continue through postsecondary enrollment and completion and transfer data across nearly all programs (Blankenberger et al., 2017; Bloomer & Kaikkonen, 2014; Byrd Chicago, 2017; Dupree, 2018b).

As the open-access mission and agility of the community college sector continue to adapt and meet local and regional workforce demands, a growing percentage of enrolled students are dual-credit participants in which they concurrently complete high school graduation requirements and early college credits. In Washington State, dual-enrollment programs include exam-based dual credit, credit by articulation, and college course completion. Exam-based dual credit includes Advanced Placement (AP), International Baccalaureate (IB), or Cambridge International Program (CI) courses with the potential to earn college credit based on high-stakes, standardized exams. Credit by articulation dual classes, or CTE Dual Credit classes, are also

taught in high schools or skill centers and integrate technical and academic programming designed to prepare students for advanced education and careers related to technical occupations. All CTE Dual Credit courses offer high school and college credit upon successful completion of articulated courses.

College course completion dual credit can be completed through College in the High School (CiHS) programs that deliver college courses to sophomores, juniors, and seniors at the high school taught by high school teachers with college curriculum and is overseen by college faculty and staff. Tuition costs are borne by the student unless eligible for subsidies or tuition assistance. High school teachers are required to meet minimum credentials equal to that of college faculty, providing instruction in the same course. Established in the early 1990s, and, at present, the largest dual-credit program in Washington State is the Running Start program. Running Start provides the opportunity for eligible juniors and seniors in high school to enroll in courses at a community college or one of the approved public universities. Students do not pay tuition, but they are responsible for transportation, fees, books, and supplies. Enrollments in the program have nearly doubled over the last decade, from 17,000 to 32,000 students—but participation has not been equitable.

As dual-credit program enrollments increase, the relationship between Running Start enrollments and educational attainment rate studies have emerged, and new analyses further reinforce the importance of equitable access to these programs. Students enrolled in dual-credit programs see increased levels of enrollment in continuing their postsecondary education, and higher rates of completion (Burns et al., 2019; Malin et al., 2017; Vargas et al., 2017). Those early engagement experiences are identified as key decision junctures along the student journey between the high school and postsecondary educational experiences.

However, access to this pathway, smoothed by dual-enrollment experiences, has not been equitable. Understanding of the population trends in the K-12 environment is foundational to framing the context in which this research becomes vital with potential practice implications for leaders and practitioners in higher education, and particularly those working in community and technical colleges as the primary access point for HUSC, low-income students. The changing landscape, with a more diverse enrollment in the K-12 population, requires that higher education leaders and systems adapt to effectively serve the diverse communities in which they exist, but that necessitates significant deconstruction of the histories on which they were built (Biraimah, 2016; Cooney et al., 2016; Malcom-Piqueux & Bensimon, 2017).

Enrollment and graduation rates of the student population in high school continue to reflect greater numbers of HUSC, with the national high school adjusted cohort graduation rate (ACGR) hitting just over 82% in 2014, and positive gains in ACGR rates by Hispanic or Latino (15%) and Black (9%) students between 2006 and 2012 (Balfanz et al., 2016). The high school graduating classes over the last decade have demonstrated significant shifts in the racial makeup of the population in Washington State, mirroring trends across the country of a shifting demographic. The concept of a "new majority" and the "browning" of K-12 educational systems (Bryant et al., 2017) bears out in the Washington State data as well, with a change in the last five years from 59% white students to 53% (Office of the Superintendent of Public Instruction, 2019). Population projections reflect that in the next two to five years, white students made up less than 50% of the public school population in the state.

However, Running Start enrollees continue to be disproportionately white, dominant culture students (Kaikkonen, 2019) as enrollment, persistence, and completion rates of postsecondary credentials by HUSC and low-income students lag behind their dominant culture

peers significantly (Bahr et al., 2017; Means et al., 2016). Community and technical colleges are potential solution partners since they are a critical point of access to postsecondary education for HUSC in Washington State, and dual enrollments could be part of an equitably designed seamless transition. In the most recent enrollment report published by the Washington State Board for Community and Technical Colleges, the 34 community and technical colleges in the state serve 58% of all students enrolled in postsecondary education in the state, nearly 40% of which are HUSC (Dupree, 2018a).

As stated, dual enrollments remain largely from white, middle-income students, and do not reflect the changing demographics of the state or country (Dupree, 2018a), including participation in the Washington State Running Start program, where HUSC participate at approximately half the rate (9%) of their dominant culture peers (18%) (Dupree, 2018a). The opportunity to extend the partnership of K-12 and higher education through dual enrollment in support of enhanced student access to Running Start programs to close equity gaps remains a potential underutilized systemic approach (Smith, 2014).

A sense of belonging has, for decades, been understood to be a critical foundation for students' success in higher education. However, because of the historical constructs in which the system of higher education was constructed, intentional integration of a culturally engaging campus is of particular importance to HUSC populations (Bowman et al., 2019; Harper et al., 2018; Museus et al., 2017; Solanki et al., 2019). Museus et al. (2017) describe the importance of developing a culturally engaging campus environment framed by two pillars. The first, cultural relevance, frames the importance of integration of culturally relevant experiences into the daily student experience. This includes building in spaces and experiences that provide cultural validation, cross-cultural engagement, and integrates communities of knowledge equitably. The

second pillar, cultural responsiveness, focuses on systemic responses designed to respond to diverse populations. These include building a systemic collectivist orientation where community successes and teamwork are demonstrated values. Those values should include practices that foster a humanized educational environment and build agents of the institution who demonstrate a culture of care and commitment by fostering meaningful relationships with the students and their communities. Finally, integration of holistic support systems and proactive attitudes in which there is an expectation of at least one faculty or staff member to have a trusted relationship with the student and be deeply invested in proactively assuring students have the information necessary to be successful.

Lack of diversification of faculty at institutions of higher education impacts the development of a culturally engaging campus environment described by Museus et al. (2015). The impact on HUSC include challenges to their sense of community and the lack of identification of relatable role models (Abdul-Raheem, 2016; Brooms & Davis, 2017). In addition, faculty members in Washington State play a key role in curricular decision-making, and the lack of diversity impacts curricular development and adoption decision-making as well (Martínez Alemán et al., 2015). Finally, faculty diversification has fewer visible campus cultural impacts as well, bringing diverse historical and lived experiences into the fabric of the institution and relationships with students, and through participation in shared governance within the system (Alcantar & Hernandez, 2020; Cheng, 2015; Means & Pyne, 2017; Reid, 2013).

The described disparate outcomes in Running Start dual-enrollment participation in Washington State provide an opportunity to further evaluate an identified systemic influence related to the transition of HUSC from high school into institutions of higher education, including how integration of faculty of color into the design of a culturally engaging campus

environment fosters (or does not foster) a sense of belonging and contributes to the HUSC Running Start student experience. The researcher sought to identify what, if any, correlation exists between the diversity level of part-time and full-time faculty to HUSC enrollment in the Running Start dual-enrollment program in Washington State.

Historical Background

Tinto's student integration theory of retention research from the early 1970s to mid-1990s (Tinto, 1975, 1993, 2006) heavily influenced the body of research and college practitioners' assumptions about programming structures that supported college student access and retention efforts. The academic version of "leaving and cleaving" reflected in his theory can be distilled into three phases required to succeed in college. First, students must separate from their communities that supported them prior to postsecondary entrance. As they exit their network of support, successful transition into a college lifestyle and integration of social and academic experiences are the final phases of Tinto's integration theory (Tinto, 1975, 1993). In it, Tinto suggests that the degree to which a student successfully navigates these phases predicts the student's successful persistence and completion. However, that theory has been challenged over the past 40 years, and even more in the past decade.

Contemporary scholars, including Tinto himself, have noted that the student integration theory framework established nearly 50 years ago did not study how the campus climate impacted bodies of students differently. More specifically, there was no consideration of the importance of cultural validation or cultural integrity (Crisp & Nora, 2010; Crisp & Nuñez, 2014; Dowd & Bensimon, 2015), nor was there consideration for the impact on leaders creating conditions for cultural integration. When cultural integration occurs through the intentional weaving of academic, cultural, and social constructs into the college student experience in

curricula, space, place, and programming, the conditions for an equitably designed institution of higher education exist (Druery & Brooms, 2018; Malcom-Piqueux & Bensimon, 2017).

A key element of an equitable higher education system design includes what Hurtado and Ruiz Alverado (2013) reference as the faculty engagement and affirmation of students both inside and outside the classroom. Identified as key elements in the development of the fabric of a community, affirming faculty interactions were identified as "academic validation" touchpoints, and critical to student success. Academic validation countered the colonized higher education systemic messaging that reinforced the imposter syndrome among HUSC (Hurtado & Ruiz Alvarado, 2013).

The bulk of the body of literature related to student access, retention, persistence, and completion builds on a dominant culture capital wealth model, which integrates a colonized understanding regarding whose social capital and community wealth has meaning. For example, for decades the dialogue related to developmental education, which disproportionately impacts HUSC educational attainment rates, focused on the lack of preparedness and did not address the inequities built into the system (Jaggars et al., 2015). Only in the last few years has the discussion shifted to address the systems in place that reinforced exclusionary structures built into higher education access points more commonly leveraged by HUSC, including community and technical colleges.

Several studies in the last decade have considered the impact of faculty on student success, and note the importance of faculty of color engagement with students of color as a strategy to further student connectedness to the institution (Glass et al., 2017; Miller et al., 2019). In fact, Hurtado and Carter (1997) identified these connections as the greatest predictor of Latino student persistence in college. In a more recent study, Tovar (2015) considered the impact of

faculty and academic counselors as institutional agents and identified support programs on student success using social capital theory. Findings revealed that the quantity and type of interactions with Latinx students had an impact on student success measured by GPA and persistence to completion. Upon further examination, critical to the types of interaction was the topic of career development. Discussions centering on career issues had a positive impact, while an absence of the career-focused content had the inverse impact (Tovar, 2015). Also important to note from that study was the conclusion that the results reinforced the value of the transition to the college experience, strengthening the case for further examination of how dual enrollment could impact the educational trajectory of HUSC.

As national completion and equity agenda leaders continue to pursue improved rates in educational attainment and closure of equity gaps, it is important to consider the collective impact of this work. Researchers conducting economic studies continue to reinforce the need for a more diverse workforce (Carter et al., 2008; Chaurasia & Shukla, 2012; Sims, 2018), and improving the postsecondary education attainment rates of HUSC communities is the foundation for doing so. While the study of access, retention, and persistence continue to be further refined, and framework such as Guided Pathways emerge to weave the continuum of interventions together (Jenkins et al., 2017; Jenkins et al., 2013), equity gaps persist in nearly every sector of the educational ecosystem.

For the purposes of this study, students identified as HUSC include any student with a Washington State Board for Community and Technical Colleges-reported census race code of Black or African American, Native American (American Indian or Alaskan Native), Hispanic, or Pacific Islander. This definition was used by the researcher to identify underrepresented faculty of color.

Deficiencies in the Evidence

Currently, the literature provides a solid foundation for the relationship between student participation in dual-enrollment programs, including Running Start and access to postsecondary systems and credential completion (Burns et al., 2019; Dupree, 2018a; Malin et al., 2017). However, the nuances of the differentiated success rates when disaggregating the data are unclear outside of the fact that HUSC are accessing dual enrollment at significantly lower rates than their dominant culture peers (Dupree, 2018a). In addition, the research conducted by Crisp & Nora (2010) focused on the complex network of influences related to Hispanic and Latinx student success (a subpopulation within the identified HUSC cohort) revealed that Hispanic and Latinx students who attended a Hispanic serving institution (defined as having at least 25% of students enrolled identified as Hispanic or Latinx) were significantly more successful than those who attended institutions with a smaller critical mass of Hispanic and Latinx students. Research related to the retention and persistence of Black students at historically Black colleges and universities (HBCU) affirmed the success of the intentional design of an equity-competent college and campus community reflecting the students served (Arroyo et al., 2017).

Paired with research to date that supports the relationship of a diverse faculty to HUSC persistence and completion rates (Museus et al., 2015; Oropeza & Fujimoto, 2012), these findings suggest diversification of faculty could positively impact access, retention, and completion of HUSC populations. However, the relationship to enrollment in dual-enrollment programs has yet to be evaluated. Additional evidence is required regarding the relationship, if any, between an ethnic and racially diverse faculty and HUSC accessing the dual-enrollment Running Start program in Washington State.

Problem Statement

Community colleges remain a critical access point to higher education for nearly two-thirds of the HUSC currently enrolled in undergraduate education in Washington State. However, enrollment in higher education by HUSC continues to lag behind their dominant culture peer group, and systemic redesign and reform efforts are needed to address the access and completion barriers if we are to improve the overall economic and social mobility of low-income communities of color (Martínez Alemán et al., 2015; Peercy & Svenson, 2016; Rios-Aguilar & Deil-Amen, 2012). However, this reform effort has related benefits to the broader economic well-being of our state and country. Derrick Bell, a seminal author in the field of critical race theory (CRT) referenced this systemic work as one of "interest convergence," defined as the intersection of the "interests of Blacks in achieving racial equality, [and] will be accommodated [by American institutions] only when it converges with the interests of whites" (Bell, 1980). In this instance, the interest of Washington State's economic and workforce development needs converge with the interest of educational credentialing for HUSC and communities of color.

One opportunity to address the broader access issue described in the literature (Burke, 2013; Malcom-Piqueux & Bensimon, 2017; Rios-Aguilar & Deil-Amen, 2012) is to consider how access to dual-enrollment programs may be contributing to the structural inequities where HUSC experience the enrollment process differently than their dominant culture peers. For the purposes of this study, the researcher considered specifically if a relationship exists between HUSC populations accessing Running Start in Washington State and the diversity of faculty at their institutions. The researcher used the faculty and staff-reported demographic IPEDS data from the community and technical colleges of the Washington system and dual-enrollment Running Start data accessible through the Washington State Board for Community and Technical

Colleges, which had not yet been examined in the body of literature. If a relationship to the diversity of faculty and staff demonstrates a significant relationship to access to Running Start and the related enrollment and completion of a high-value credential, there would be significant policy and practice implications.

Community and technical colleges across the country are known as a critical access point for minoritized students (Chase et al., 2014). From 2000 to 2010 in Washington State, populations of color have increased from 18 to 28%. During this period, Latinx populations increased 71%, Asians increased 49%, and those who identify as multiracial increased 41%. However, access rates for those populations varied significantly, as did their completion rates (Dupree, 2018b) within the community and technical college system. When further exploration occurs within the subset of the dual-access Running Start population, the access rates reflect an even greater equity gap. Leading educational reform to improve access, retention, and completion outcomes while closing equity gaps require educational leaders who are prepared to deepen their understanding of why equity gaps exist. They must follow that by identifying what opportunities exist to deconstruct the systemic barriers that have been identified. Finally, leaders must develop and actualize the vision and fortitude to successfully accomplish the transformative reform work required to change the higher education system that has, for centuries, been producing the outcomes it was designed to produce.

HUSC continue to access higher education at lower rates than their dominant culture peers (Ghazzawi et al., 2019; Malin et al., 2017; Martínez Alemán et al., 2015). Improving how students experience college and fostering a sense of belonging have been correlated to having a significant relationship with college personnel (Deil-Amen, 2011; Kim & Lundberg, 2016; Museus et al., 2017) and for HUSC, mentoring relationships with individuals who share a lived

experience as mirrored through their racial and/or ethnic background (Crisp & Nora, 2010; Crisp & Nuñez, 2014; Stephens et al., 2014) are particularly important. While these known factors have provided context for access and retention systemic interventions, current literature and research have not interrogated the possibility of a relationship between faculty diversity and the impact on dual-enrollment programs which have known impact on enrollment and completion of higher education credentials (Burns et al., 2019).

Audience

Postsecondary educational attainment is the clearest pathway to economic and social mobility for HUSC and low-income students (Chetty et al., 2017; Mullin & Phillippe, 2013). While recent investments in a postsecondary value commission may signal a question about the return on investment of higher education, the research to date provides evidence that it remains a sound investment. According to a report from Anthony Carnevale at Georgetown's Center on Education and the Workforce, more education still pays on average, and the earning potential across the continuum of credentials and population demographics varies widely (Carnevale, 2016).

Educational leaders across the K-20 ecosystem, policymakers, and business and industry partners have an extensive history of failed policy design and implementation in addressing the growing inequality related to access to postsecondary systems and related meaningful credential completion. In a report written for the Lumina Foundation in 2015, Philip Trostel of the University of Maine's Margaret Chase Smith Policy Center and School of Economics articulated the significant benefits attributed to postsecondary educational attainment. He described the financial payoff as being one dimension to the benefits of bachelor's degree attainment and college enrollment, including annual earnings of approximately 134% higher and lifetime

earnings of, conservatively, approximately $625,000 or greater (Trostel, 2015). However, in key policy discussions, the additional dimensions are often left out.

The Pell Institute has long held that bachelor's degree attainment generates significant individual financial benefits including poverty incidence rates that are 3.5 times lower, and employer benefits packages including a retirement plan and income in retirement is significantly higher (2.4 times) (Baum et al., 2013; Schudde, 2017). Health and well-being are also impacted by the likelihood of having health insurance (47% greater), and the life expectancy at age 25 is seven years longer (Schudde, 2017). Employment security also improves with educational attainment, with the probability of being employed at 24% higher (Jones, 2017).

Social benefits also impact economic and civic areas within society. College graduates' lifetime tax payments are significantly greater, with estimates at 215% higher than their undereducated peers, while the resources expended are significantly lower than other taxpayers' resources (Snyder et al., 2018). Additional social contributions include volunteering (2.3 times greater) and higher rates of charitable donations (3.4 times) (Baum et al., 2013). Civic engagement benefits are also of note. Voting and participation in community service organizations are substantially higher as well. These societal benefits, coupled with the evidence of individual social and economic benefits, validate the value of higher education in significantly more ways than individual financial return, which further demonstrates the importance of identifying systemic design flaws impacting equitable access and success for HUSC communities.

Washington State community and technical colleges' leaders, students, staff, and faculty and the communities in which they serve will all benefit from a deepened understanding of how faculty diversification impacts access to dual-enrollment Running Start in Washington State, as

equity gaps continue to be highlighted as a structural issue in higher education with significant impact on workforce development (Museus et al., 2015). The study results will benefit leaders of higher education, the private and public sectors, and economic development who will gain a deepened understanding of the impact of the diversity of full- and part-faculty on access equity gaps to the dual-enrollment Running Start program within Washington State community and technical colleges. In addition to benefits attributed to the higher education system and statewide economic development, this study has the potential to benefit faculty and students from historically underserved populations as the structural barriers are identified and removed, providing greater access to higher education and a broader suite of sectors within the labor market as policy and practice implications are further excavated.

Further, the researcher's findings contribute insights for higher education leaders regarding potential resource allocation considerations related to making an investment in effective hiring practices focused on diversification of full- and part-time faculty, and may have implications for cross-sector industry leaders who continue to seek better information about impacts of higher education access to the diversity of their emerging workforce (Krome, 2014; Museus et al., 2015). Finally, the potential policy and practice improvements based on a deepened understanding of the relationship between a diverse full- and part-time faculty have significant implications for the historically underserved communities across the state.

Specific Leadership Problem

The recently adopted vision statement at the Washington State Board for Community and Technical Colleges, "*Leading with racial equity, our colleges maximize student potential and transform lives within a culture of belonging that advances racial, social, and economic justice in service to our diverse communities*," challenges community and technical college leaders to do

more than disaggregate data. The concept of an open-enrollment institution of higher education must be more than theoretical, and the design of the system impacts for whom it is truly open. In their 2017 journal article, Malcom-Piqueux and Bensimon (2017) suggest that while the discussion in policy circles has in the last several years included equity more consistently, the postsecondary educational access and attainment gap persists and in some cases has widened. This assertion bears out in Washington State, where HUSC transition directly from high school into postsecondary education at lower rates than their dominant culture white peers (Kaikkonen, 2019).

The completion agenda of the mid-2000s (Bers & Schuetz, 2014) and the national attention on community college contributions to the workforce launched a decade of heightened focus on community college contributions to postsecondary credential completion and workforce development. Prior to that, little attention was paid to the integration of the P-16 pipeline. As the knowledge economy accelerated during the post-recession recovery, a convergence of political, economic, workforce, and educational interests aligned and brought into focus the need for an improved educational ecosystem designed for smooth transitions between the previously distinct educational entities.

Over the last two decades, an explosion of research emerged from research-practice partnerships and provided insights into policy and practices influencing the overall postsecondary access and completion rates. However, equity gaps within those access and attainment rates continue to persist (Lindsey et al., 2017) which require leaders and policymakers to consider additional systemic interventions, such as Completion by Design (Martínez Alemán et al., 2015; *The Path to Completion: Nine Colleges Redesign for Student Success,* 2017) and Guided Pathways (Bailey et al., 2015; Jenkins et al., 2013; Mathis & Roueche, 2019), which

emerged in the last decade as a framework designed to improve access and attainment by combining interventions to build a college culture focused on improving the student experience. In addition to the college reform efforts, smoothing the transition from college to high school requires an effective partnership across the two sectors of education.

In the book *What Excellent Community Colleges Do,* Wyner (2014) describes the characteristics of the leadership needed to shape excellent community colleges. He describes how sustained learning institutions responding to emerging needs require transformational leaders who engage with their institutional data, make the case for change, and then support effective leaders across the organization to consider areas of opportunity for systemic change designed to improve the student experience. In his study of what leading community colleges do, Wyner considers the complex missions integrated with emerging and equally complex outcomes. The study provides critical insights into the leadership challenges facing community college leaders across the country as they identify a framework designed to improve access and completion for all students while closing equity gaps for historically underserved populations. The vision, goals, and priorities these leaders define ultimately cultivate the culture within which a diverse faculty and staff thrive or possibly do not.

In Washington State, the State Board for Community and Technical Colleges reported that in 2019, 11% self-identified as historically underrepresented populations (SBCTC, 2020). Considering how the lack of historically underrepresented faculty impacts the college, campus, and system culture is critical to uncovering the policy changes and opportunities to improve the access and attainment rates of HUSC.

Purpose of the Study

Community and technical colleges are open-enrollment institutions that are identified as critical access points for HUSC enrolling in higher education across the country (Bailey et al., 2015), and Washington State is no exception (Dupree, 2018b). However, the population of HUSC participating in the dual-enrollment program Running Start remains significantly lower than their dominant culture peers. Faculty leveraging culturally competent curriculum and pedagogy foster the necessary sense of belonging of HUSC, resulting in increased access, retention, and completion (Bers & Schuetz, 2014; Xu et al., 2018; Xu Jade & Webber, 2018). The purpose of this study is to identify the relationships, if any, between the diversity of full- and part-time faculty within the Washington State Community and Technical Colleges system and the access rates of HUSC to the Running Start program.

Methodology Overview

The methodology of this study was a quantitative study using a correlational design of descriptive and inferential statistics of historical data extracted from the Washington State Board for Community and Technical Colleges personnel demographics dashboard and enrollment data dashboard to identify what, if any, relationship exists between the diversity of faculty and staff and the access rates of HUSC in the Washington State Community and Technical Colleges system. The researcher used data from 2008-2018, with inferential statistical analysis of the study populations and a hypothesized correlation between HUSC and the ratio of faculty and staff of color.

Data from the Washington State Board for Community and Technical Colleges' dashboards are derived from mandatory self-reported institutional data, including student enrollment, progression, and completion data, as well as personnel demographic data.

For the purposes of this study, HUSC are considered students identifying as Black or African American, Native American (American Indian or Alaskan Native), Hispanic, or Asian/Pacific Islander (including Hawaiian). For the purposes of this study, dominant culture or non-HUSC are those who identify as white, Asian, or other race/ethnicity. HUSC access higher education at lower rates than their dominant culture peers, and the equity gap persists throughout the retention, progression, and completions (Dowd & Bensimon, 2015; Martínez Alemán et al., 2015). The dominant culture design of higher education institutions disadvantages HUSC even before their arrival on campuses. One aspect of that structural inequity is reflected in the faces and lived experiences of individuals who make up the institutional faculty, staff, and administrators, most of whom identify as white (Baker, 2013; Malcom-Piqueux & Bensimon, 2017; Martínez Alemán et al., 2015). However, there is a gap in the literature related to the impact on dual-enrollment programs, and specifically Running Start enrollments at community and technical colleges in Washington State.

Washington State Community and Technical Colleges' faculty and staff demographics data were analyzed to identify the ratio of full- and part-time faculty from 2008–2018. Colleges were assigned a calculated diversity score, which were determined according to the diversity scoring method developed by Stout et al. (2018). Scores were calculated based on the distribution rate of identified race/ethnicity categories identified as historically underrepresented (HU). Using IPEDS data, researchers calculated a diversity score for each institution (Stout et al., 2018) which was used to identify what, if any, relationship exists between the diversity of faculty and staff and the rates in which HUSC access the Running Start program in Washington State Community and Technical Colleges. Once the researcher extracted the full data set, she used descriptive

statistics to articulate the study population characteristics and correlate them to identify the potential relationships between the different data points.

The diversity score was calculated by identifying the full- and part-time faculty in each identified race and ethnicity category, and then dividing by the total number of faculty at each institution. The resulting percentage assigned to each race and ethnicity category accounted for institutional size differences. The standard deviation of faculty percentages were then calculated at each institution to examine how the faculty ratios at each institution vary by race and ethnicity category. To complete the analysis, a related diversity score was calculated using the Stout et al. (2018) method subtracting the standard deviation from one and multiplying the result by 100 and rounding to the nearest whole number. A diversity score was calculated for each community and technical college for each year of the study for all full- and part-time faculty.

Once the institutional diversity scores were completed, the Running Start access rates for HUSC and non-HUSC were analyzed. Corresponding representative samples of the highest median and lowest institutional diversity scores are displayed in Table 1.

Table 1
Institutions with the Highest and Lowest Diversity Scores for All Faculty

Institution	All Faculty Diversity Score	Fall 2018 Enrollment	Fall 2018 Running Start Enrollment
Shoreline	75.15	3,453	267
Bates	72.53	2,871	7
Walla Walla	72.47	2,367	199
Edmonds	72.43	3,882	832
Seattle North	72.07	3,223	351
Spokane Falls	66.12	3,756	616
Grays Harbor	66.02	1,441	255
Clover Park Tech	65.63	3,197	77
Tacoma Comm. College	65.54	4,094	931
Wenatchee Valley College	65.47	2,398	803

A simple linear regression statistical analysis of the data was conducted to determine if any relationship exists between full- and part-time faculty diversity and the access rates of HUSC and non-HUSC during each year sampled. Use of the simple linear regression provided the researcher the opportunity to understand the relationship between the independent variable of institutional diversity score (X) and the dependent variable of the institutional access rate of the Running Start HUSC and non-HUSC (Y) (Design, 2015).

Research Questions

1. How diverse are all faculty, full time and part time, among community colleges?
2. What, if any, relationship exists between the diversity of racially minoritized full-time faculty at a community college and the Running Start access rates of historically underserved students of color (HUSC)?
3. What, if any, relationship exists between the diversity of racially minoritized full-time faculty at a community college and the Running Start access rates of dominant culture students (identified as non-HUSC)?
4. What, if any, relationship exists between the diversity of racially minoritized part-time faculty at a community college and the Running Start access rates of HUSC?
5. What, if any, relationship exists between the diversity of racially minoritized part-time faculty positions at a community college and the Running Start access rates of dominant culture students (identified as non-HUSC)?
6. What, if any, relationship exists between the diversity of all racially minoritized faculty positions at a community college and the Running Start access rates of dominant culture students (identified as non-HUSC)?

Hypothesis:

1) When the diversity of racially minoritized full-time faculty increases
    a. H_0= HUSC Running Start access rates do not significantly increase or decrease
    b. H_α= HUSC Running Start access rates increase with statistical significance $p \leq 0.05$
    c. H_α= HUSC Running Start access rates decrease with statistical significance $p \leq 0.05$
2) When the diversity of racially minoritized part-time faculty increases
    a. H0= HUSC Running Start access rates do not significantly increase or decrease
    b. H_α= HUSC Running Start access rates increase with statistical significance $p \leq 0.05$
    c. H_α= HUSC Running Start access rates decrease with statistical significance $p \leq 0.05$
3) When the diversity of all racially minoritized faculty increases
    a. H_0= HUSC Running Start access rates do not significantly increase or decrease
    b. H_α= HUSC Running Start access rates increase with statistical significance $p \leq 0.05$
    c. H_α= HUSC Running Start access rates decrease with statistical significance $p \leq 0.05$

Study Limitations

While the proposed data are publicly available and data verification processes are in place, there is no guarantee all self-reported data, specifically race and ethnicity reporting by students, staff, and faculty are accurate, and the researcher acknowledges these can specifically be impacted by the national socio-political context of the time. Additionally, the Washington

State Board for Community and Technical Colleges' data warehouse is limited to self-reported demographic characteristics of students and faculty but cannot account for other influencing factors regarding program engagement choices, high school course availability, course-taking patterns, and, perhaps most importantly, engagement with individual faculty and staff to deepen the analysis of why these relationships exist or do not exist.

In addition to the limitations of the data collection process, the researcher acknowledges she is currently working as an administrator in the system of the Washington State Board of Community and Technical Colleges (SBCTC). The use of the SBCTC data warehouse minimizes researcher bias, as the researcher was not involved in any data reporting or collection processes. In addition, the researcher's experiences in community and technical colleges over the past two decades have been diverse, with variously diverse institutions in multiple states, shaping the opinions regarding the role of faculty and staff diversity in the student experiences. Using unbiased data sets and well-tested statistical analysis methodologies mitigated for any personal bias and influence on the study findings.

Study Delimitations

The researcher focused this study on identifying what relationship, if any, exists between historically underserved student enrollments in the Running Start dual-enrollment program and the number of racially minoritized faculty of color represented in the community and technical colleges in Washington State. A primary limitation of the study is the generalizability of the study analysis and findings. State policy and practice context regarding dual-enrollment programming vary greatly from state to state, and therefore they may be a delimiting factor.

The data set for this study was limited from the full SBCTC data warehouse data set to the institutional and student demographic and enrollment characteristics related to the study

context. The data used to identify if any relationship exists between the ratio of faculty diversity and access rates of Washington State Running Start students were limited to:

- Full-time faculty reported race and ethnicity
- Part-time faculty reported race and ethnicity
- Washington State Community and Technical Colleges' institutional data
- HUSC populations defined by annual cohorts between 2008-2018 who are enrolled in the dual-enrollment Running Start program
- Non-HUSC populations defined by annual cohorts between 2008-2018 who are enrolled in the dual-enrollment Running Start program

Therefore, the findings and results may not necessarily generalize to other subjects, locations, or future time periods.

Definition of Key Terms

Completions – This refers to the number of degrees and other recognized postsecondary credentials (certificates) conferred. These data are reported by level (certificate, associate's, bachelor's, master's, and doctorate), as well as by length of program for specified pathways. Demographic characteristics including race/ethnicity and gender of recipient and the field of study in NCES.

Correlation design methodology – A methodology wherein the researcher observes what naturally occurs or has occurred without interference. This design provides a mechanism for a researcher to identify what types of statistical relationships, if any, exist between variables. Variable relationships are defined as positive, negative, or none and typically expressed using linear regression analysis.

Descriptive statistics – Statistical descriptions defining the characteristics of an extensive set of data including average, mean, and median (Salkind, 2014).

Dual credit – A program through which high school students are enrolled in Advanced Placement (AP) or College in the High School (CiHS) courses, taught at their high school, that fulfill high school graduation requirements and may earn the student college credits (National Center for Education Statistics [NCES], 2019; *Washington State Board for Community and Technical Colleges Data Warehouse Data Dictionary*, 2020).

Dual enrollment – A program through which high school students may enroll in college courses while still enrolled in high school. Students are required to apply for admission to the college in order to participate (National Center for Education Statistics [NCES], 2019).

Admitted students – Applicants who have been granted an official offer to enroll in a postsecondary institution (National Center for Education Statistics [NCES], 2019).

Advanced Placement (AP) courses – College-level courses taught in high school in which students may elect to pay a fee and attempt an examination at the completion of the course. Exams are scored on a scale of 1–5, and acceptable scores (generally 4–5) allow students to earn college credit toward a degree, certificate, or other recognized postsecondary credential.

Economic mobility – Measures income mobility based on the odds of a child from the bottom 20% of the income bracket reaching the top 20% (Chetty et al., 2017).

Enrollment – The count of students enrolled as of the census date of the class. If the student's enrollment date of the class is after the class census date or the student drops from the class prior to the class census date, the student is not included in the census day enrollment value. The quarterly census date is the 10^{th} instructional day after the quarter begins. If the quarter is less than 10 weeks long (summer quarter, for example), the quarter census date is

based on the number of weeks in the quarter. If the quarter is nine weeks, the census date is the ninth instructional day. If the quarter is eight weeks, the census date is the eighth instructional day, etc. For courses that begin within the first few days of the start of the quarter and run for the duration of the quarter, the class census date remains the quarter census date. For shorter courses that do not meet within the first few days of the start of the quarter or do not run for the duration of the quarter, the class census date is calculated as the date in which the course has met for 20% of the instructional days of the course. Standard rounding rules apply to calculate the date.

For open-entry courses, a separate calculation is calculated. Continuous enrollment courses are open-entry classes permitting students to begin instruction at any time during a quarter. The enrollment census date for a continuous enrollment course is the last instructional day of the class or the last day of the quarter in which the class begins, whichever occurs first. If the student's enrollment (add) date is after the official census date, the student is not included in the calculations.

Additional validation checks to ensure accurate enrollment calculations include automated review processes that validate the student's enrollment date. Simple checks are run by the data services team to assure that the add date is verified as prior to the last day of the class, or the student dropping or withdrawing from the class prior to the census day of the class. Also verified as part of the data services team's editing process are any dates entered on the quarterly class record, such as the start date and 10th day. If those dates are after the last day of the quarter, the enrollment is not included in the calculation (*Washington State Board for Community and Technical Colleges Data Warehouse Data Dictionary*, 2020).

A subset of enrollment is enrollment in the Running Start program. The Running Start program allows 11th and 12th grade students to take college courses at Washington's 34

community and technical colleges, Washington State University, Eastern Washington University, Central Washington University, The Evergreen State College, and Northwest Indian College, if the institution's governing board decides to participate in the program. Running Start students are allowed a maximum combined full-time equivalent (FTE) of 1.2, which equates to 18 college-level quarter credits. Running Start student enrollments are not included in state-supported enrollment calculations but are considered contract funded (*Washington State Board for Community and Technical Colleges Data Warehouse Data Dictionary*, 2020).

Full-time faculty – Persons identified by the institution as such are typically those whose initial assignments are considered full-time work and created for the purpose of conducting instruction, counseling, or other identified activities. Faculty may also include the chancellor or president, provost, vice provosts, deans, directors, or the equivalent, as well as associate deans, assistant deans, and executive officers of academic departments (chairpersons, heads, or the equivalent) if their principal activity is instruction combined with other identified activities. The designation as "faculty" is separate from the activities to which they may be currently assigned. For example, a newly appointed president of an institution may also be appointed as a faculty member. Graduate, instruction, and research assistants are not included in this category (National Center for Education Statistics [NCES], 2019).

Historically underserved faculty of color (HUFC) – HUFC include any faculty with a Washington State Board for Community and Technical Colleges' data warehouse-reported census race code of Black or African American, Native American (American Indian or Alaskan Native), Hispanic, or Pacific Islander. These data are self-reported at the time of hiring (*Faculty and Staff Data Dashboard, SBCTC*, 2020).

Historically underserved students of color (HUSC) – Historically underserved students of color include any student with a Washington State Board for Community and Technical Colleges' data warehouse reported census race code of Black or African American, Native American (American Indian or Alaskan Native), Hispanic, or Pacific Islander. This data element was added in spring 2018 and retroactively updated back to summer 2000 based on the 2018 definition (*Washington State Board for Community and Technical Colleges Data Warehouse Data Dictionary*, 2020).

Institutional diversity score – This refers to a calculated score determined by identifying the full- and part-time faculty in each identified race and ethnicity category, and then dividing by the total number of faculty at each institution. The resulting percentage assigned to each race and ethnicity category accounted for institutional size differences, and the final score is calculated using the Stout et al. (2018) method subtracting the standard deviation from one, multiplying the result by 100, and rounding to the nearest whole number. A diversity score was calculated for each community and technical college for each year of the study for all faculty, full and part time.

Integrated Postsecondary Education Data System (IPEDS) – The federal data set collected annually from educational institutions receiving Title IV funds. The National Center for Educational Statistics (NCES) began collecting annual institutional data from all required institutions. Data include institutional characteristics; enrollment; completions; admissions; student financial aid; human resources including staff demographics and salaries; graduation rates; outcome metrics; financial information; and academic library data (National Center for Education Statistics [NCES], 2019).

K-12 system – The Washington State Legislature defines the K-12 system as the public school program, including kindergarten through the 12th grade (*Chapter 28B.50 RCW: Community and Technical Colleges*, 2020).

Minoritized faculty – Used interchangeably with historically underserved faculty of color, minoritized faculty include any faculty with a Washington State Board for Community and Technical Colleges' data warehouse reported census race code of Black or African American, Native American (American Indian or Alaskan Native), Hispanic, or Pacific Islander. These data are self-reported at the time of hiring (*Washington State Board for Community and Technical Colleges Data Warehouse Data Dictionary*, 2020).

National Alliance of Concurrent Enrollment Partnerships (NACEP) – NACEP serves as the sole accrediting body for concurrent enrollment partnerships, and it supports college and high school faculty, teachers, and programs that adhere to the highest standards so students experience a smooth transition to college (*Who We Are, National Alliance of Concurrent Enrollment Partnerships*, 2020).

National Center for Education Statistics (NCES) – NCES serves as the primary federal educational data collection and analysis body reporting to the Department of Education and the Institute of Education Sciences. A congressional mandate requires the collection, analysis, and reporting of statistics related to the United States' educational system (National Center for Education Statistics [NCES], 2019).

Open access, open enrollment – Institutions designated as having no academic admission criteria, which allows any potential age-eligible student to be admitted and enrolled in classes (National Center for Education Statistics [NCES], 2019).

Part-time faculty – Persons performing instructional duties without a tenure-track contract. These staff most often teach without assurances on a term-by-term contract. This does not include graduate assistants or other professional or exempt staff who are teaching courses. Individuals teaching non-credit courses exclusively are also excluded (National Center for Education Statistics [NCES], 2019).

Retention rate – A metric measuring the rate at which students continue enrollment at an institution of higher education. This is monitored in the Washington State community and technical college system for students enrolled in fall and returning the following winter term (first to second term retention) and those enrolled in fall who return the following fall without disruption in their enrollment (fall to fall) (National Center for Education Statistics [NCES], 2019; *Washington State Board for Community and Technical Colleges Data Warehouse Data Dictionary*, 2020).

Running Start – A program that allows eligible 11th and 12th grade students to take college courses at Washington's 34 community and technical colleges. Students earn both high school and college credits for the courses they successfully complete. Students enrolled in Running Start do not pay tuition. They are responsible for mandatory fees, books, and transportation.

Social mobility – The ability to move along the continuum of a social stratification system, also known as social class. Individuals and families can experience increased social mobility or decreased social mobility for a multitude of reasons, but in the last several decades in the United States, income inequality has impaired educational and economic opportunities of low-income children and families decreasing the opportunity to improve one’s social class via authentic social mobility (Bathmaker et al., 2016; Strumbos et al., 2018).

Washington State community and technical colleges – Open access/Open enrollment institutions of higher education offering associate degree and certificate programs and applied baccalaureate degrees. Washington further defines community colleges as intuitions of higher education for purposes of academic training, two-year institutions, and are an independent, unique, and vital section of Washington State's higher education system, separate from both the common school system and other institutions of higher learning. Community colleges offer thoroughly comprehensive educational, training, and service programs to meet the needs of both the communities and students served by combining high standards of excellence in academic transfer courses; realistic and practical courses in occupational education, both graded and ungraded; community services of an educational, cultural, and recreational nature; and adult education, including basic skills and general, family, and workforce literacy programs and services within a defined service district area. Community colleges in Washington were designed to be geographically accessible (*Chapter 28B.50 RCW: Community and Technical Colleges*, 2020; National Center for Education Statistics [NCES], 2019).

Summary

Postsecondary education has long been identified as the pathway to economic and social mobility for children born into the lower-income quartiles. After the 2008 recession, postsecondary educational attainment became even more relevant in the knowledge economy, with 90% of jobs recovered requiring some form of education beyond high school (Carnevale, 2016). However, access to and enrollment in postsecondary institutions of higher education by HUSC continue to lag behind their dominant culture white peers (Bragg, 2017; Malcom-Piqueux & Bensimon, 2017; Taylor, 2015), further exacerbating income inequality along racial lines.

Access to dual-enrollment programs has been identified as an opportunity to decrease college costs and smooth the transitions between high school and college experiences (Burns et al., 2019; Hoffman et al., 2009; Wang et al., 2015) for all students. However, the racial equity gap remains consistent across dual-enrollment participation rates in the Washington State Running Start program, which was intended to improve college-going rates of all students graduating from high school (Dupree, 2018a). The factors that influence participation in Running Start are complex, but building the diversity and critical mass of minoritized faculty has emerged as an opportunity for fostering the culturally engaged campus climate needed for more HUSC to succeed (Bolton et al., 2017; Malcom-Piqueux & Bensimon, 2017; Malin et al., 2017; Osei-Kofi et al., 2010; Wilkins & Burke, 2015).

Minoritized faculty ratios have shown some growth in the Washington State Community and Technical Colleges system over the last decade, with the greatest increase among Hispanic-identified faculty whose ratio of overall faculty increased by nearly 50% (*Faculty and Staff Data Dashboard, SBCTC*, 2020). The researcher examined the Washington State Board for Community and Technical Colleges' data warehouse data to identify what, if any, relationship exists between full- and part-time faculty diversity ratios and access rates of HUSC and non-HUSC populations within the 34 Washington State community and technical colleges. The researcher will use the findings to inform higher education leaders about the relationship between the overall access rates of HUSC and non-HUSC Running Start students and institutional faculty and staff diversity ratios. Findings and related implications for policy and practice are grounded in theoretical foundations and provide recommendations for future study areas.

CHAPTER 2: LITERATURE REVIEW

Background

Completion of a postsecondary credential has been identified as a critical foundation for a successful pathway to economic and social mobility (Baum et al., 2013; Belfield & Bailey, 2011; Coley & Baker, 2013; Edmunds et al., 2017). While this research has been reinforced over the last four decades through various studies including those at the Pew Trust, Brookings Institute, and others (Coley & Baker, 2013; Strumbos et al., 2018; Tarabini & Jacovkis, 2012), strategies to impact completion rates and close the gap in educational attainment persists for historically underserved students of color and those from the lowest income quartiles (McLeod, 2011; Ryan & Bauman, 2016) have had limited success. As the nation and world navigate unknown territory in the wake of the coronavirus pandemic and related economic impacts, relevant postsecondary educational attainment is likely to be more important than after the 2008 crisis (Carnevale et al., 2016), where 90% of recovered jobs required a meaningful credential.

This new challenging context has exacerbated and exposed a persistent systemic flaw despite a multitude of strategies employed to support students. Investments have historically focused on addressing individual pockets of students, including boutique programs, such as the national TRiO and Gear Up programs, and other federal, state, and local initiatives instead of clearing away barriers that are embedded within the higher educational system and structures. For HUSC, this challenge is exponentially compounded by the racialized history and related systems of oppression built into the higher education infrastructure (Crisp et al., 2009; Crisp & Nuñez, 2014; Martínez Alemán et al., 2015; Museus et al., 2015).

The postsecondary educational equity gaps in access and attainment continue to perpetuate the racial wealth gap, and if demographic factors and economic geography are

determinants of success, there is still critical change to be made in our systems. In most recent months, this has been compounded by the digital divide as K-12 schools and postsecondary institutions rapidly transitioned to online and virtual environments where most faculty, staff, and students were underprepared, and the gap in access for students and communities described by the Federal Communications report on broadband access and deployment became painfully evident (*Federal Communications Commission*, 2019).

As one of a host of strategies designed to address the college access gap and emerging workforce needs in the state, Washington State passed legislation in 1990 (RCW 28A.600.300: Running Start program—Definition., n.d.) that launched the Running Start dual-enrollment program. While the program has grown significantly over the past 25 years since the legislation passed, the equity gap among dominant culture white students and their HUSC peer group remains. In a recent study by the Washington State Board for Community and Technical Colleges examining the disaggregated enrollment in Running Start, positive college-going and completion rates of participants outpaced their non-participant peers, demonstrating the compounding cost of inequities in the participation rates of historically underserved low-income students of color (Dupree, 2018a).

Dual enrollment presents several opportunities to socialize and prepare all students for the transition from high school to postsecondary education. In a study released in 2017, the authors assessed the impact of participation in dual enrollment on required enrollment in remedial coursework and credential completion for first-time, full-time students in Tennessee (Grubb et al., 2017). The results demonstrated the value of students enrolling in a community college dual-enrollment program. Students who participated were 3.4 times less likely to require remediation coursework and were 2.5 times more likely to graduate within two years. In

addition, students were 1.5 times more likely to graduate in three years, a standard measure for IPEDS reporting at 150% of degree completion time. In the recommendations from the study, additional study, policy analysis, and planning to increase equitable participation were suggested (Grubb et al., 2017).

Broadening the scope, in a national 2017 report on dual-enrollment postsecondary matriculation after high school by the Community College Research Center (CCRC) at Columbia University, 88% of dual-enrollment participants successfully enrolled in an institution of higher education between the ages of 18 and 20 (Fink et al., 2017), significantly higher than the overall college-going rate of 70%. Nearly half of those students, 47%, matriculated to a community college by the time they were 20 years old. An additional 41% matriculated at a four-year college during that same time period. The CCRC study also provided key findings regarding the comparison of completion rates of lower- and higher-income students' participation in dual enrollment. Overall, across the United States, dual-enrollment, lower-income participants complete at a rate 7% lower than their higher-income peers.

In addition to the CCRC study, a recent report from the Institute of Education Sciences and the United States Department of Education reported positive findings from multiple studies on the relationship of dual enrollment and postsecondary access and attainment as well (Berger et al., 2014; What Works Clearinghouse et al., 2017). In the 2017 report, the review showed positive effects on degree attainment, college access and enrollment, credit accumulation, high school completion, and college readiness.

As dual-enrollment demands increase in the wake of an economic crisis, and policymakers and families seeking postsecondary opportunities for their children recognize the cost benefits of participation, additional information regarding which populations are accessing

dual enrollment and which are not will be critical to the broader postsecondary equity and attainment agenda. This presents a pressing case for the need to deepen the body of research related to this key transition point in the educational ecosystem.

K-12 Population Trends

While the data appear clear regarding the benefits of dual enrollment, access to various programs has been inequitable (Pretlow & Wathington, 2014; Taylor, 2015). A deepened understanding of the K-12 population trends and policy environment is critical context to understanding practice implications for partners, leaders, and practitioners, particularly those in the community college sector, as a primary entry point for low-income HUSC. As population demographics continue to shift, so does the landscape change as a more diverse pool of students enroll in the K-12 system, and leaders across the educational ecosystem are required to adapt the structures to more effectively serve the diverse communities in which they exist. This focused redesign requires an important integration of additional historical knowledge sets than those previously accessed, and a significant deconstruction of the histories upon which the educational systems and the higher education system were built (Biraimah, 2016; Cooney et al., 2016; Malcom-Piqueux & Bensimon, 2017).

High school student population demographics continue to reflect greater numbers of HUSC, as do graduation rates. The United States' national high school adjusted cohort graduation rate (ACGR) has continued to improve, with the most recent report by the Department of Education Institute for Education Science (IES) reporting an ACGR for public high school students topping 85%, the highest rate since it was first tracked in 2010 (McFarland et al., 2009). In addition, positive gains in ACGR rates by HUSC were seen. Black students' high school graduation rates increased from 2000 to 2016 (92%), nearly closing the high school

graduation equity gap between their white peers (94%). Even more gains were made among Hispanic students, whose rates increased from 64 to 89% during the same time period (de Brey et al., 2018).

These shifts in the demographics of the high school graduating classes over the last two decades reveal significant changes to the racial makeup of the population in Washington State, which mirrors the national trends described. The emergence of the "new majority" concept and the "browning" of the K-12 population (Bryant et al., 2017) in Washington State data reveals a significant shift in the last five years. In 2013, 59% of students enrolled in the public Washington State school system identified as white students. In the most recent data from 2018, that percentage has decreased to 53 (Office of the Superintendent of Public Instruction, 2019). Population forecasting suggests that in the next two to five years, the racial and ethnic diversity of the public school system will become even more diverse, with less than 50% of students enrolled identifying as white.

Unfortunately, those trends do not appear to be equitably transitioning to postsecondary enrollments, nor do they bear out in the Washington State Running Start dual-enrollment program. Running Start participants continue to be disproportionately white students (Kaikkonen, 2019). This gap in participation rates perpetuates the enrollment, persistence, and completion rates of relevant postsecondary credentials by HUSC, low-income students, who continue to lag behind their dominant culture peers (Bahr, 2013; Bahr et al., 2017; Bragg et al., 2006; Malin et al., 2017). Community and technical colleges are effectively positioned to partner with the K-12 system to address this systemic equity gap as critical points of access to postsecondary education for HUSC across the country, dual-enrollment programs have the potential to bolster the transition from high school to college for these students, as culturally

competent places of belonging fostering the postsecondary attainment needed to restart our economic recovery for all. In the most recent enrollment report published by the Washington State Board for Community and Technical Colleges, Washington's 34 community and technical colleges serve 58% of all students enrolled in postsecondary education in the state, nearly 40% of whom are historically underserved students of color (*SBCTC Student Enrollment Dashboard*, 2020).

The data presented reflect the reality that dual enrollments remain largely comprised of the white, dominant culture, middle-income students, and do not reflect the changing student population demographics of the state or the country at large (Kaikkonen, 2019; Long, 2018). In Washington State, the Running Start program continues that trend, where historically underserved students of color participate at approximately half the rate (9%) of their white dominant culture peers (18%) (Dupree, 2018a). The importance of enhancing the K-12 to postsecondary engagement is clear. The opportunity for educators to dovetail these educational systems to smooth out the transition from high school to postsecondary education through dual enrollment in Running Start is an excellent example of a way for education partnership to support student access and close equity gaps with a currently underutilized systemic approach (Smith, 2014).

College Access and Completion Rates

While enrollment and graduation rates of the student population in high school continue to reflect greater numbers of historically underserved students of color (HUSC), with the national high school adjusted cohort graduation rate (ACGR) hitting just over 82% in 2014, and positive gains in ACGR rates by Hispanic and Latino (15%) and Black (9%) students between 2006 and

2012 (Balfanz et al., 2016), enrollment, persistence, and completion rates of HUSC lag behind their dominant culture peers significantly (Bahr et al., 2017; Means et al., 2016).

Understanding the K-12 context and the related equity gaps that persist through to graduation, community and technical colleges are a critical point of access to postsecondary education in Washington State for HUSC. In the most recent enrollment report published by the Washington State Board for Community and Technical Colleges, the 34 community and technical colleges serve 58% of all students enrolled in postsecondary education in the state, nearly 40% of whom are HUSC (Dupree, 2017). Dual-enrollment programming is an opportunity to further develop a clear pathway from high school to college and includes several different delivery models.

One well-known avenue to garner college credit while still in high school involves college preparatory courses that culminate in a fee-based exam. If a student achieves a certain threshold score or higher, they are able to have related credits recorded on transcript at their postsecondary educational institution. These College Preparatory Programs with Exams (CPPE) in Washington State include Advanced Placement (AP), International Baccalaureate (IB), and Cambridge International "A" Levels (CLE). The tuition savings, and, in some cases, additional weight in the grade point average (GPA) calculation make these attractive options for many students and parents. In addition, they are noted on college admission applications and provide an opportunity for high school students to experience the rigor of college coursework while completing the course in their high school curriculum. Unfortunately, these remain inconsistently accessible by HUSC populations in Washington State (*Equity in College Preparatory Programs with Exams [CPPE]*, 2019).

Over the last several years, the student population with increased access and completion of CPPE's at community and technical colleges in Washington has been disproportionately students who are not economically disadvantaged. The reasons behind this remain hypothetical, but the national landscape offers some considerations. Nationally, AP course offerings have been largely driven by parent demand and in more affluent K-12 school districts (Klugman, 2013). The use of AP exams by students from non-economically disadvantaged households in Washington nearly doubled in two years, from 2016-2018, while students from economically disadvantaged households relatively stayed stagnant with virtually no change in access. This exacerbates the problem that already existed as an equity gap exponentially (*Equity in College Preparatory Programs with Exams [CPPE]*, 2019).

Racial equity gaps continue to further the structural disadvantages embedded in the educational ecosystem and have been a topic of national critique as well. In the United States, HUSC populations' access, completion, and transcription of credit from CPPE's, and particularly AP credits, have been significantly lower than their white and Asian peers. These inequities impact HUSC populations in a variety of ways, including erosion of academic confidence and loss of financial benefits of CPPE use for college credit, and they are another broken rung on the ladder to higher education that HUSC must face entering the postsecondary environment (Kolluri, 2018). One may argue that those students not accessing CPPE coursework are benefitting from a different form of dual enrollment in Washington State, such as the popular Running Start program.

However, these inequities persist. The access and participation of HUSC in the Running Start program remain significantly lower than their peers, while the benefits of participation may hold even greater value to them financially and academically. In Washington State, HUSC

participate in Running Start at approximately half the rate (9%) of their dominant culture peers (18%) (Dupree, 2018a). While Running Start rates have increased over time significantly, rates of HUSC have changed very little in the last five years (Dupree, 2018a). It is important to note that while the participation rate of HUSC is low, their success rates remain consistently high once engaged. This specific breakdown in the system caused the researcher to question why and how the system can dismantle the barriers that are impacting HUSC student participation in dual enrollment, specifically in Running Start. The opportunity to extend the integration of K-12 and higher education through dual enrollment and specifically Running Start to close equity gaps remains an underutilized systemic gap (Smith, 2014).

Sense of Belonging

One aspect of the college-going experience that has drawn attention in the last couple of decades by researchers and practitioners alike is the concept of creating a sense of belonging for all communities and designing a college culture that reflects the communities served (Museus et al., 2017). Historically, access and retention research has focused on creating a campus culture that reflects the historic participants allowed into the system, white middle- and upper-income men. This can be seen in the early work of Tinto (1993), whose theory of student integration was considered seminal research in higher education. While his research provided some critical foundations for understanding the reasons students departed early from higher education, his theory that students must experience separation from their previous engaged communities (parents, support networks, etc.), transition into a new college life, and then integrate themselves into the academic and social structures they found at their college campuses were key to their individual success (Tinto, 2006a). This theory has persisted, in spite of serious critiques related to the disadvantages this theory poses to historically underrepresented students of color. The

underlying premise of disassociation from one's community reflects the dominant white culture, and further suggests that students entering that system must adopt those historical values, beliefs, and cultural norms in order to succeed in higher education environments (Anguluan-Coger, 2015; Carales & Nora, 2020; Museus et al., 2017).

Over the last two decades, a body of research has emerged supporting the critique of Tinto's integration theory and redefining how a culturally competent sense of belonging may be built into a college life experience, positively influencing historically underserved students of color, low-income, and first-generation students. Because HUSC continue to access higher education at lower rates than their white, dominant culture peers (McFarland et al., 2019; Redford et al., 2017), improving how they experience college and fostering a sense of belonging are critical to closing the equity gaps that continue to persist. Fostering a sense of belonging has been correlated to the development of a significant relationship with college personnel (Deil-Amen, 2011; Kim & Lundberg, 2016; Malin et al., 2017) and for HUSC populations, informal and formal mentoring relationships with college faculty and staff who share a lived experienced mirrored through their racial and/or ethnic history are particularly critical (Brooms & Davis, 2017; Crisp & Nora, 2010; Crisp & Nuñez, 2014; Glass et al., 2017; Miller et al., 2019; Museus et al., 2018; Ragoonaden & Mueller, 2017; Zambrana et al., 2015).

While these relationships have become clearly critical to persistence in HUSC populations and provide context for retention and persistence, current studies and literature have not fully interrogated how the relationship between faculty racial and ethnic diversity impact dual-enrollment program participation. The relationship between dual enrollment and matriculation underscores the importance of further discovery in this area (Burns et al., 2019; Wang et al., 2015).

Faculty Engagement

Hurtado and Ruiz-Alverado (2013) reference the critical importance of faculty engagement as one foundational element of student affirmation both inside and outside the classroom. These interactions were identified as key factors in the "academic validation" necessary to positively socialize students as they transition into the college participation experience, and counter the colonized higher education systemic messaging that reinforces the imposter syndrome HUSC often experience (Hurtado & Ruiz Alvarado, 2013). Identity development theory supports these personalized intentional contacts by faculty, sometimes developed as a formal mentoring program, but more often occurring as an informal but vital connection to the college (Cejda & Hoover, 2010). Faculty are essential in promoting a sense of connection to the institution and providing support for the critical meaning-making that provides context for how students interpret the college context (Gibbons & Woodside, 2014; Rodriguez et al., 2016; Shumaker & Wood, 2016).

Finally, the importance of trust development cannot be overstated, particularly for men of color as members of the college community of learners. In the 2015 study by Dowd and Bensimon, the critical connection built on a foundation of trust is more often attained when men of color are connected to faculty and staff at their institutions who reflect their racial and ethnic makeup and express a shared cultural understanding (Dowd & Bensimon, 2015; Perrakis & Hagedorn, 2010). While the literature has demonstrated that student-faculty engagement is a viable predictor of persistence and attainment, the nature of the interactions is less clear.

In addition to reinforcing that HUSC populations not only belong but are vital members of postsecondary institutional communities through the process of academic and cultural validation, intentional faculty interactions have been demonstrated to be particularly critical to

access and retention of HUSC populations as agents of institutional change (Danowitz & Tuitt, 2011; Macdonald et al., 2019). The faculty-student dynamic is foundational, grounded in an authentic caring and respectful relationship, which are necessary for fully engaging students in effective pedagogy and help-seeking behavior. In a 2015 study focused on Mexican male student engagement with community college faculty, the authors found that the quality of the interactions with faculty was critical, as was the acumen regarding the students' preferred learning context (Palacios et al., 2015).

While these individual interactions are important, as is identity development, additional layers of the fabric of the institution reinforce the importance of the faculty actor in a HUSC experience in higher education, and in particular, in the community college environment. College impact models have emerged as an alternative approach to considering how outcomes are impacted by the college context in which the student is educated. They include factors such as values, interests, campus culture, and peer group experiences (Branand et al., 2015; Kim & Lundberg, 2016). These studies suggest that the context in which students experience the critical identity development described in identity development theories (Howard & Navarro, 2016; Tinto, 2017) has significant influence on outcomes (Kim & Lundberg, 2016; Malcom-Piqueux & Bensimon, 2017; Tovar, 2015), and must be evaluated for their role in student success. One key element in the college context is the consideration of the value of faculty who represent the communities with whom the college is engaged (Oropeza & Fujimoto, 2012; Turner et al., 2008).

In addition, faculty have the opportunity to foster a critical network of engagement in career pathways that is vital to the success of HUSC populations, who are often first generation and low income. This can include integrating undergraduate research into their curriculum to better prepare a student for additional studies beyond the community college (Pierszalowski et

al., n.d.), as well as the much-desired informal access to professional networks that provide "insider information" regarding breaking into an industry or occupation without a familial network on which to rely (Druery & Brooms, 2018; Hasan & Bagde, 2013; Rios-Aguilar & Deil-Amen, 2012).

Critical Mass of Faculty of Color

While many leaders at institutions of higher education articulate the need to diversify the faculty and professional staff, in the next breath those same leaders articulate the insurmountable challenges of hiring and retaining racially diverse faculty and staff of color (Kaiser et al., 2013). This seems to be a consistent theme in spite of the growing number of students of color who have successfully completed advanced degrees (McFarland et al., 2019). However, a growing body of literature and studies regarding effective hiring practices designed to successfully recruit, hire, and retain faculty of color has emerged and should be considered.

A priority foundation is deepening hiring committees' understanding of their own biases, and beginning to foster a campus of practitioners engaged in equity-minded reflective practices (Lindsey et al., 2017; Oropeza & Fujimoto, 2012). In addition to the individual work that must occur, the development of a shared commitment to diversifying the community of faculty is critical to sustaining the ongoing practice. Once the shared consciousness has been established, further enhancing the hiring and support systems through a tenure process through hiring a faculty of color cohort is an excellent strategy to further that goal (Oropeza & Fujimoto, 2012; Pennamon, 2017).

Much like college students, a sense of belonging remains an important environmental factor for faculty and staff engagement, and the historical construction of higher education has made the system slow to reform in this area. While there have been enthusiasm and valued

research conducted to clarify the critical importance of faculty engagement and affirmation of HUSC, little has been done to hold institutions of higher education accountable for effective faculty hiring practices designed to diversify the ranks. Engaging in a systemic approach to the development of a more diverse faculty who are also equity-minded will take intention and resources but are necessary if the access, persistence, and completion equity gaps between HUSC populations and their dominant culture white peers are to be realized (Malcom & Malcom-Piqueux, 2013; Nakaoka & Ortiz, 2018).

Summary

Currently, the literature provides a solid foundation for the relationship between student participation in dual enrollment and access and credential completion (Burns et al., 2019; Dupree, 2018a; Malin et al., 2017). Dual-enrollment students continue to access higher education at both community colleges and four-year institutions of higher education at significantly higher rates than their non-participating peers. However, access to dual-enrollment programs has not been equitable. Nationally and in Washington State, HUSC populations enroll in dual enrollment at significantly lower rates, including the Washington State Running Start program in which HUSC enroll at half the rate of their dominant culture peers (Dupree, 2018a).

It is that equity gap that grounds this study, and the opportunity to further excavate opportunities for systems change to address those barriers that exist for HUSC dual enrollment. Coupled with the understanding of the current participation rates, the research by Crisp & Nora (2010), who studied the complex influences related to Hispanic and Latinx student success, revealed that HUSC populations were positively influenced by the engagement of a faculty who closely aligned with their racial and/or ethnic background and shared some understanding of their lived experiences (Dowd & Bensimon, 2015; Griffin et al., 2012; Harris et al., 2017;

Rodriguez et al., 2016). Furthermore, research related to the retention and persistence of Black students at HBCU affirmed the success of structural, equity-competent communities reflecting the students served (Arroyo et al., 2017; Baker, 2013).

Paired with research to date that supports the relationship of a diverse faculty to HUSC persistence and completion rates (Museus et al., 2015; Oropeza & Fujimoto, 2012), these findings suggest diversification of faculty could positively impact access, retention, and completion of HUSC populations. However, additional evidence is required to further clarify what, if any, relationship exists between a diverse faculty and HUSC accessing the dual-enrollment Running Start program in Washington State.

CHAPTER 3: METHODOLOGY

Introduction

Community and technical colleges are open-enrollment institutions and identified as critical access points for historically underserved students of color (HUSC) entering higher education across the country (Bailey et al., 2015), and Washington State is no exception (Dupree, 2018b). Many researchers have unpacked this broad issue into a variety of study areas, including policies and practices now known to disproportionately impact HUSC populations. Those entry processes include placement practices leveraging standardized exams (Marwick, 2004), limited housing and financial support (Broton & Goldrick-Rab, 2018; Strumbos et al., 2018; Kelchen et al., 2017; Marcucci & Johnstone, 2007; Park et al., 2014), as well as curricular design (Blankenberger et al., 2017; Jaggars et al., 2015) that lacks cultural competency or attention to HUSC population impacts. However, there are bright spots in the literature.

Improving how students experience college and fostering a sense of belonging has been correlated to students' identification of a significant relationship with college personnel (Druery & Brooms, 2018; Johnson et al., 2016; Museus et al., 2018), and for HUSC, mentoring relationships with individuals who share a lived experience as mirrored through their racial and/or ethnic background (Hurtado & Ruiz Alvarado, 2013; Vue et al., 2017) are particularly important. While these relationships do not independently change the access barriers, they are known to provide necessary support navigating institutional complexities and have been shown to improve access, persistence, and completion of postsecondary credentials (Sáenz & Ponjuan, 2011; Vishwanatha et al., 2019). Considering how those relationships exist, current literature and research studies have not interrogated the relationship between faculty diversity and the impact on access to dual-enrollment programs.

The current body of literature provides a solid foundation for understanding the relationship between student participation in dual enrollment and access and credential completion. Dual-enrollment programs have been shown to have a positive relationship to overall enrollment and completion of higher education credentials (Edmunds et al., 2017; Gilson & Matthews, 2019; Roberts et al., 2018). Researchers conducting a study that explored the effects of early college credit-bearing programs provided a window into the opportunities that dual-enrollment programs can provide. In it, researchers studied the impacts of dual-enrollment programs on students' success using time to graduation as the metric for student success. The findings indicated that dual-enrollment participants indeed graduated in a shorter time period than their non-participating peers (Burns et al., 2019). In addition, earlier studies conducted reinforced the value of early college exposure through dual-enrollment programming including improved high school graduation rates of participants, improved grade point averages, and significantly higher transition rates into postsecondary education (Grubb et al., 2017; Karp et al., 2007; Vargas et al., 2017).

Connecting this research regarding the value of dual enrollment with the body of research demonstrating the importance of faculty relationships with HUSC provides an opening for a deepened understanding of the relationship between HUSC populations and faculty engagement. Research by Crisp & Nora (2010), who studied the complex influences related to Hispanic and Latinx student success, revealed that Hispanic and Latinx students who attended a Hispanic-serving institution (defined as having at least 25% of students enrolled identified as Hispanic or Latinx) were significantly more successful than those who attended other institutions. That research supports the value of building a sense of belonging at institutions through peer communities with shared lived experiences, backgrounds and histories, and a culturally

competent campus climate. Research related to the retention and persistence of Black students at HBCU similarly affirmed the success of equity-competent communities reflecting the populations being served (Arroyo et al., 2017) in both cultural backgrounds and lived histories. Baker (2013) conducted a study confirming the critical influence of faculty of color on the success of African American and Latino students at selective colleges. A powerful quote from her study, *"You always have to have someone there to have faith in you or else you feel alone. And when you're alone, things become a lot more difficult,"* highlights the importance of faculty support for HUSC populations in particular (Baker, 2013).

The connection between contemporary research, which reinforces that a relationship between faculty of color and HUSC access, persistence, and completion to the relationship between faculty diversity ratios and dual-enrollment access of HUSC populations remains unclear. Additional evidence is required regarding what, if any, relationship exists between faculty racial and ethnic diversity and increased HUSC population access rates within the Washington State dual-enrollment Running Start program.

Research Questions

1) How diverse are all faculty, full time and part time, among community colleges?
2) What, if any, relationship exists between the diversity of racially minoritized full-time faculty at a community college and the Running Start access rates of historically underserved students of color (HUSC)?
3) What, if any, relationship exists between the diversity of racially minoritized full-time faculty at a community college and the Running Start access rates of dominant culture students (identified as non-HUSC)?

4) What, if any, relationship exists between the diversity of racially minoritized part-time faculty at a community college and the Running Start access rates of historically underserved students of color (HUSC)?
5) What, if any, relationship exists between the diversity of racially minoritized part-time faculty positions at a community college and the Running Start access rates of dominant culture students (identified as non-HUSC)?
6) What, if any, relationship exists between the diversity of all racially minoritized faculty positions at a community college and the Running Start access rates of dominant culture students (identified as non-HUSC)?

Hypothesis:

1) When the diversity of racially minoritized full-time faculty increases
    a. H_0= HUSC Running Start access rates do not significantly increase or decrease
    b. H_α= HUSC Running Start access rates increase with statistical significance $p \leq 0.05$
    c. H_α= HUSC Running Start access rates decrease with statistical significance $p \leq 0.05$
2) When the diversity of racially minoritized part-time faculty increases
    a. H0= HUSC Running Start access rates do not significantly increase or decrease
    b. H_α= HUSC Running Start access rates increase with statistical significance $p \leq 0.05$
    c. H_α= HUSC Running Start access rates decrease with statistical significance $p \leq 0.05$

3) When the diversity of all racially minoritized faculty increases

a. H_0= HUSC Running Start access rates do not significantly increase or decrease
b. H_α= HUSC Running Start access rates increase with statistical significance $p \leq 0.05$
c. H_α= HUSC Running Start access rates decrease with statistical significance $p \leq 0.05$

Research Method

Qualitative studies have been the primary methodology used to research and build the current body of literature related to access rates of HUSC populations in higher education. Brooms' recent study of the black male student experience (2019) and Tachine et al. (2017) are examples of how studies were primarily crafted as ethnographic qualitative studies designed to better understand the student experience as it related to the HUSC population's sense of belonging. Qualitative methodology focuses on observation methods, including anthropology and ethnography, to study participants in the context of the research questions. It captures rich information as a snapshot in time, and to do so would not answer the questions at scale being posed in this research (Creswell, 2014). Seminal author Vincent Tinto conducted many longitudinal studies in the access and retention of students, although most of his work focused on the four-year student experience, which often does not generalize to the community and technical college student population (1993, 2006, 2017). He and other researchers, including Dowd and Bensimon (2015), Bragg (2017), and Crisp (2014), provide excellent framework for why this quantitative study is needed to interrogate large-scale data to better understand what, if any, relationships exist between these two variables.

Mixed methods studies are designed to expand the breadth of the inquiry (Creswell, 2014) or to confirm and discover new hypotheses related to the research questions. Limited

quantitative data exist to align with the qualitative studies to deepen the body of knowledge, and, as such, a mixed methods study would be premature. A mixed methods study could provide some insights into the student experience; however, the population being studied is access constrained, as they are primarily under the age of consent, and the researcher's inability to review large-scale data sets for the initial study make it less useful during this stage of inquiry (Creswell, 2014). Eliminating the first two methodologies left the researcher with the use of a quantitative methods study, of which there were several design options, including correlational, experimental, quasi-experimental, causal-comparative, and evaluation.

Research Design

This study is designed to explore the existence and strength of a relationship between faculty diversity and student access to the dual-enrollment Running Start program in Washington State community and technical colleges. The researcher examined the data by conducting a quantitative correlational research study. Institutional diversity scores used were calculated using all full-time and part-time faculty diversity rates, and student populations were disaggregated by race, ethnicity, and HUSC and non-HUSC population identifiers. In addition, confounding context variables were considered, including minority-serving institution status, geographic location, and institutional size.

The researcher's hypothesis, that an increase in Washington State community and technical college (CTC) Running Start HUSC access rates increase when there is an increase in the number of racially minoritized faculty at Washington State CTCs, was studied through the use of descriptive and inferential statistical analysis of the identified archived data sets. When studying what kind of association or relationship exists between two or more variables, an experimental study is not appropriate. Experimental studies focus on uncovering the effect of one

variable on another within controlled conditions. This requires conditions that allow for an experiment to be put into place and test the cause-effect inference. In addition, a causal-comparative study is designed to identify the between-group difference and to address what difference exists between groups when studying existing data sets. Again, that methodological design is not appropriate to answer the existence and strength of a relationship between the variables identified. Finally, correlational studies are preferred when researchers are attempting to clarify the existence and strength of the relationship between two variables in lieu of a causal relationship—as in this case, a correlational design is appropriate.

Sources of Information

The descriptive statistics provided important context setting for this study and deepened the understanding of the state and institutional landscape as it relates to faculty and Running Start-enrolled students, but did not provide the clear causation information required to clarify the relationship between faculty diversity ratios and historically HUSC rates of access to a critical bridge to higher education, the dual-enrollment Running Start program. Included in the descriptive statistical analysis are geographic location, size, and minority-serving institutional status, which includes Hispanic-serving institutions (HSI) and Asian American and Native American Pacific Islander-serving institutions (AANAPISI). The researcher sought to understand the relationship between those context variables, and their study uncovers critical information by clarifying what, if any, relationship exists between the two, and how one variable (racially minoritized full-time and part-time faculty diversity as evidenced in the diversity score) may impact the other (HUSC Washington State community and technical college Running Start student access).

Upon clarifying what, if any, relationship exists between the variables based on the initial linear regression analysis, the researcher next studied the coefficient of determination to better understand the predictive value of the relationship between the data sets, with the higher coefficient reflecting a stronger predictive value (Salkind, 2014). This provides valuable information regarding how much variance can be expected in Washington State community and technical college HUSC Running Start access rates with increased faculty diversity. In addition, the researcher considered the adjusted coefficient of determination as a mechanism to further understand the fit of the model, and adjust for the number of variables in the data set. Both analyses were meaningful in clarifying what, if any, correlation exists between the variables, but do not indicate causal relationships.

Participants

No live participants were engaged in this study. Student study participant data were extracted from the Washington State Board for Community and Technical Colleges Student Enrollment Dashboard (*SBCTC Student Enrollment Dashboard*, 2020) for 2008–2018. The enrollment data provides a series of snapshots that include headcount and full-time equivalent (FTE) across the Washington State community and technical colleges. The dashboards allow for disaggregation by student demographics, funding source, and identified specialized programs. Data from the dashboards are drawn from over 13 million records imported from college report uploads. Student race or ethnicity demographic data are self-reported at the time of application to the college.

Faculty study participant data was extracted from the Faculty and Staff Data Dashboard (*SBCTC*, 2020) for 2008–2018. The faculty and staff data also provide a series of data snapshots, including headcount, FTE, and demographic disaggregation options. Data were updated to

incorporate new data from the legacy data system to the new PeopleSoft information system for the colleges that have migrated onto the new platform. Faculty and staff race and ethnicity data are self-reported at the time of application and are optional.

Upon completion of the data extract, the researcher downloaded all data sets into CSV files and import them into Microsoft Excel and SPSS where she calculated the institutional faculty diversity scores and the Running Start dual-enrollment program access rates of the HUSC populations, and conducted the linear regression analysis to study the data.

Data Analysis Methods

In order to answer the identified research questions and test the hypothesis, whether changes in faculty diversity rates result in a change in HUSC Running Start access rates, study data were analyzed using descriptive statistics to explicate the identified study populations. In addition, inferential statistics derived from a linear regression using Pearson's product-moment correlation were utilized to analyze the relationship between the faculty diversity rates (independent variable) of all full- and part-time faculty and the HUSC and non-HUSC Running Start participation rates (dependent variable). According to Salkind (2014), a linear regression statistical analysis of the data is appropriate to determine what, if any, relationship exists between continuous variables over time as in this study over each year sampled. Data was gathered from all 34 community and technical colleges in Washington from the Washington State Board for Community and Technical Colleges data dashboard to provide a large and diverse enough sample size to increase the generalizability of the results. In order to validate the results of the linear regression analysis, the researcher conducted tests to address the assumptions required for linear regression valid results.

First, the underlying assumption that the dependent variables are measured on a continuous scale and are, therefore, considered continuous variables is necessary for the linear regression analysis. Second, verifying that a linear relationship exists between the variables must be established. The researcher tested the linearity between the variables and checked for outliers using a scatterplot. This allows the researcher to visually review for linearity and significant outliers, which can have a negative effect on a regression analysis by reducing the fit of the equation and impacting the predictive value of the dependent variable (Field, 2013). These outliers can be tested in RStudio. In order to test the next assumption, the independence of observations or autocorrelations, the researcher ran and interpreted the Durbin-Watson test. Values between 1.5 and 2.5 generally demostrate there is limited to no auto-correlation in the data. The next assumption that must be addressed is the homoscedasticity demonstration, where the variances demonstrated along the line of best fit must remain similar across the entire line. When data fall outside of that pattern, heteroskedasticity occurs and the data fail this assumption. The final assumption to test for a linear regression analysis involves checking the residuals' (also known as errors') distribution. These must display approximately normal distribution and was tested using the Goldfeld-Quandt test. Upon the completion of assumption testing, the statistical analysis began.

Descriptive statistics generated insights to the researcher regarding the sample populations. Student population descriptions included the percentage of HUSC and non-HUSC by institutional size, minority-serving institutional status, and geographic location. Institutional characteristics included the calculated diversity score, faculty diversity rates, and cluster characteristics by geographic location, size, and minority-serving institutional status. These included the use of measures of central tendency and scatterplots to visually represent the

relationship between the data sets. This provided important context to better understand in meaningful ways how to describe the populations and institutions being studied.

Inferential statistics were used to identify the statistical significance of the relationship between those variables. Employing a Pearson product-moment correlation provided a mechanism from which to determine the direction and strength of a relationship between the faculty diversity rate and the HUSC Running Start access rate (also known as the correlation coefficient). This provided an opportunity for the examination of the relationship between the faculty diversity rates and HUSC and non-HUSC Running Start access rates over the 10-year period being studied. In addition, the analysis would reveal intersections of all full- and part-time faculty with access rates of HUSC and non-HUSC populations. Using Equation 1, the researcher examined the results for analysis.

$$\hat{Y} = b_0 + b_1X_1 + b_2X_2 + \cdots + b_PX_P \qquad (1)$$

In this study, the $\hat{Y}$ value represents the predicted value of the Running Start access rates of the HUSC population. The b_1 value represents the estimated regression coefficient that reflects the numeric association between the faculty diversity rates of the institution, and additional confounder variables are represented by X_P.

The researcher used RStudio to conduct the initial simple linear regression analysis, where the X_1 predictor variable was the faculty diversity rates of the college, and the $\hat{Y}$ dependent variable was the access rates of HUSC to Running Start in Washington State CTCs. Assuming a linear relationship exists, the focus of the analysis was on the predictive value of faculty diversity rates to HUSC and non-HUSC access rates and the strength of that predictive value, if indeed it does exist. In order to do so, the researcher calculated the regression coefficients, the t-statistic of the overall model, and the associated p-value. Additional potentially

confounding variables, including geographic location, institutional size, and minority-serving institution status was incorporated to understand model variance impacts. For the purposes of this study, the researcher used a data set limited to only the 34 community and technical colleges in Washington State, not the public four-year institutions currently eligible to offer the Running Start program from 2008–2018.

The researcher used faculty demographic data extracted from the Washington State Board for Community and Technical Colleges (SBCTC) faculty and staff dashboard (2020) for each of the 34 Washington community and technical colleges into three comma-separated values (CSV) files differentiated by all full- and part-time faculty, and disaggregated by race or ethnicity categories within each file. This requires filtering the faculty and staff data to eliminate staff from the data set within the tableau dashboard. Each year was extracted separately. For the purposes of this study, faculty who self-identify as Black or African American, Native American (American Indian or Alaskan Native), Hispanic, or Pacific Islander were considered racially minoritized faculty of color. Faculty data were analyzed to calculate the diversity score for each year for each institution (Stout et al., 2018).

To calculate the diversity score for each Washington State community and technical college, the researcher first identified the full- and part-time faculty in each identified race and ethnicity category and divide by the total number of faculty at each institution, respectively. The resulting percentage assigned to each race and ethnicity category accounted for institutional size differences. The standard deviation of faculty percentages was then calculated at each institution to examine how the faculty ratios at each institution vary by race and ethnicity category. To complete the analysis, a related diversity score was calculated using the Stout et al. (2018) method, subtracting the standard deviation from one and multiplying the result by 100 and

rounding to the nearest whole number. This resulting score fell within a possible range of 55-100. Those with higher scores indicated a more representative institutional diversity, and the converse was also true. Institutions with lower scores indicate a lack of diversity among faculty. Each community and technical college had a diversity score calculated for each year of the study for full- and part-time faculty, and a combined score for all faculty. These scores were then averaged across the years to generate the mean diversity score for that institution.

Similar to the faculty data, Running Start student enrollment data were extracted from the Washington State Board for Community and Technical Colleges enrollment dashboard (2020) from 2008–2018 for all 34 community and technical colleges. Student data were downloaded by college into a CSV file with race and ethnicity and HUSC status disaggregated data in order to perform the study analysis. Student data were analyzed to identify annual access percentage rates for each HUSC race or ethnicity category with HUSC identified as Black or African American, Native American (American Indian or Alaskan Native), Hispanic, or Pacific Islander and converted to percentages to address institutional size variations. The researcher disaggregated the data by the identified race and ethnicity categories in order to calculate access percentage rates for each corresponding race and ethnicity category and year for each of the 34 community and technical colleges.

The data to be analyzed were archived in an existing publicly available data dashboard, eliminating the quasi-experimental and non-experimental design methodologies in which data sets could be compared (Creswell, 2014). Data from the Washington State Board for Community and Technical Colleges' (WSBCTC) dashboards are derived from mandatory self-reported institutional data, including student enrollment, progression, and completion data, as well as personnel demographic data. The definitions for this data set reference HUSC as students

identifying as Black or African American, Native American (American Indian or Alaskan Native), Hispanic, or Asian/Pacific Islander (including Hawaiian). For the purposes of this study, students who identify as white, Asian, or other race or ethnicity were not considered HUSC, consistent with the definitions within the WSBCTC definitions. For the purposes of this study, the institutional diversity scores calculated for each Washington State community and technical college annually are independent variables derived from a formula designed by Stout et al. (2018), while Running Start access rates of HUSC and non-HUSC at these same Washington State community and technical colleges become dichotomous dependent variables.

Finally, it is important to acknowledge that while causation could not be determined in this study, it was designed to provide initial insights into the relationships between these variables, potential characteristics and relationships to further examine, and, in doing so, lay the groundwork for future studies in this area.

Limitations

While the proposed data are publicly available and data verification processes are in place, there is no guarantee all self-reported data, specifically race and ethnicity reporting by students and faculty, are accurate, and the researcher acknowledges these data can specifically be impacted by the national socio-political context of the time. In addition, while data verification processes are in place to ensure accurate and timely reporting of standardized data sets with well-defined categories, there were no guarantees that all data would available every year for every institution. The Washington State Board for Community and Technical Colleges' data warehouse is limited to self-reported demographic characteristics of students and faculty but cannot account for other influencing factors regarding program engagement choices, high school course availability, course-taking patterns, geographic location of college programs, and perhaps most

importantly, engagement with individual faculty and staff to deepen the analysis of why these relationships exist or do not exist. HUSC populations and minoritized faculty are not always captured in the data collection process due to the structure of the race or ethnicity categories, which historically limited multi-race reporting.

The dashboard data extracts were downloaded into CSV files and converted to Excel spreadsheets. Prior to uploading the data sets into SPSS, the researcher filtered out the institutions that did not have any Running Start participants based on program offerings, which may have been true for some or all of the five technical colleges not offering the breadth of related coursework required for students to complete their high school requirements. This data filtering process was subject to the researcher's human error. Attention to detail and multiple structured data and process reviews were critical, and every effort was made to minimize the risk of manual human error and enhance the study reliability. In addition, including careful documentation of each step of the process in the study results increased the replicability of the study.

Finally, quantitative demographic data characteristics cannot fully explain the context wherein access and enrollment occur. There were sample size and geographic limitations related to focusing only on one state that may have influenced the outcomes of this study. Further research to deepen the collective understanding of why a relationship may or may not exist was important in continuing to uncover the meaning behind the results.

Author Bias

The researcher is currently working as an administrator in the Washington State Community and Technical Colleges system. The use of the SBCTC data warehouse minimizes researcher bias as the researcher was not involved in any data reporting or collection processes.

In addition, the researcher's experiences in community and technical colleges over the past two decades have been diverse, with variously diverse institutions in multiple states, shaping the opinions regarding the role of faculty and staff diversity in the student experiences. Using unbiased data sets and well-tested statistical analysis methodologies mitigated for any influence of personal bias on the study findings.

Credibility

The sample was extracted from the Washington State Board for Community and Technical Colleges' data warehouse, which is used to support federal, state, and local enrollment allocation funding and includes quarterly enrollment and allocation monitoring reports. These are used for full-time equivalency target monitoring of various programs throughout the academic year (*SBCTC Student Enrollment Dashboard*, 2020). The data are consistently audited for accuracy through state and independent auditors and provided a significant data set, allowing for transferability of findings to institutions with similar dual-enrollment programs. The use of descriptive statistics established validity by examining the effects of faculty diversity ratios on access rates of HUSC and non-HUSC's various comparison data points within the 10-year data set.

Transferability

The data are consistently audited on a quarterly and annual basis for accuracy through state and independent auditors and provided a data set of thousands of records with the potential for transferability of findings to institutions with similar dual-enrollment programs. Resulting findings and recommendations based on analysis of the data are potentially transferable to public, two-year, open-access, degree-granting institutions with similar dual-enrollment

programs. Researchers, policymakers, and practitioner-leaders may use the analysis as a basis for further study and consideration of policy and practice implications.

Dependability

The researcher worked closely with the Washington State Board for Community and Technical Colleges' research team, her dissertation chair, and dissertation committee members throughout the process to assure the reliability and validity of the data collection and analysis process. Recommendations and considerations from each were incorporated into the study to ensure the highest quality and dependability were adhered to in the final analysis.

Summary

The researcher of this study examined the Washington State Board for Community and Technical Colleges' data warehouse data to identify what, if any, relationship exists between full- and part-time faculty diversity ratios and access rates of HUSC and non-HUSC populations within the 34 Washington State community and technical colleges. The researcher used the findings to inform K-12 and higher education leaders about the relationship between the overall access rates of HUSC and non-HUSC Running Start students and institutional faculty and staff diversity ratios. Findings and related implications for policy and practice were grounded in theoretical foundations and provide recommendations for future research areas and potential system-wide policy and practice changes.

CHAPTER 4: FINDINGS

Introduction

As revealed in the literature review, Historically Underserved Students of Color (HUSC) access dual enrollment, and specifically the Running Start program in Washington State at vastly different rates. While the intent of the legislation when originally signed into law was to increase access to higher education for underrepresented student populations, nearly 30 years after the program's inception, it has not. As policymakers struggle to make sense of this, the lack of literature focused on this issue revealed a mostly unexplored policy area that has significance for accelerating the pathway for many students who otherwise may not see themselves in higher education. One key factor that has been identified in the literature related to the success of students in higher education is an attachment to being part of an inclusive learning environment, often referenced as having a sense of belonging in the literature. This includes access to relevant and culturally responsive non-academic activities, physical, social and emotional spaces, and curriculum and pedagogy that reflect race consciousness and equity mindedness (Malcom-Piqueux & Bensimon, 2017).

All areas of the institution are meaningful contributors to this environment, but in focusing this research, the researcher identified the importance of the influence of faculty on the overall context of the college student experience. Faculty are instrumental in fostering students' connection to the institution through their classroom experiences and they have demonstrable power to impact the institutional climate based on their positional power within the shared governance structure. As such, the researcher in this study focused on understanding the relationship between evolving faculty diversity rates and Running Start dual-enrollment access

rates in Washington State community and technical colleges. The research questions and related hypotheses designed for the study are articulated below:

Research Questions

1) How diverse are all faculty, full time and part time, among community colleges?
2) What, if any, relationship exists between the diversity of racially minoritized full-time faculty at a community college and the Running Start access rates of historically underserved students of color (HUSC)?
3) What, if any, relationship exists between the diversity of racially minoritized full-time faculty at a community college and the Running Start access rates of dominant culture students (identified as non-HUSC)?
4) What, if any, relationship exists between the diversity of racially minoritized part-time faculty at a community college and the Running Start access rates of historically underserved students of color (HUSC)?
5) What, if any, relationship exists between the diversity of racially minoritized part-time faculty positions at a community college and the Running Start access rates of dominant culture students (identified as non-HUSC)?
6) What, if any, relationship exists between the diversity of all racially minoritized faculty positions at a community college and the Running Start access rates of dominant culture students (identified as non-HUSC)?

Hypotheses

1) When the diversity of racially minoritized full-time faculty increases
    a. H_0= HUSC Running Start access rates do not significantly increase or decrease

b. H_α= HUSC Running Start access rates increase with statistical significance $p \leq 0.05$
c. H_α= HUSC Running Start access rates decrease with statistical significance $p \leq 0.05$

2) When the diversity of racially minoritized part-time faculty increases
    a. H0= HUSC Running Start access rates do not significantly increase or decrease
    b. H_α= HUSC Running Start access rates increase with statistical significance $p \leq 0.05$
    c. H_α= HUSC Running Start access rates decrease with statistical significance $p \leq 0.05$

3) When the diversity of all racially minoritized faculty increases
    a. H_0= HUSC Running Start access rates do not significantly increase or decrease
    b. H_α= HUSC Running Start access rates increase with statistical significance $p \leq 0.05$
    c. H_α= HUSC Running Start access rates decrease with statistical significance $p \leq 0.05$

In order to understand the relationship between the change in faculty diversity rates and HUSC access rates to the Running Start dual-enrollment program in Washington State community and technical colleges, the researcher used a simple linear regression analysis, which is designed to explicate the relationship between two independent variables. The study was designed to clarify what, if any relationship exists between those variables as well as the strength of the relationship if one exists. A positive linear relationship would be revealed if both variables increased together and would be described as a direct relationship. In contrast, if the variables

exhibited a negative linear relationship, meaning one variable increased while the other decreased, the relationship would be known as an indirect relationship.

In this study, a direct relationship would indicate a positive correlation existed between faculty diversity rate change and HUSC access rates to Running Start. An indirect relationship would indicate a negative correlation between those same variables. Findings presented in this chapter revealed discoveries related to each of the specific research questions and the related hypotheses. The first research question required descriptive statistics to inspect the data and identify how diverse the faculty were across each institution, disaggregated by all, full-, and part-time status at the institution. The remaining research question results are demonstrated using scatterplots of the data generated using RStudio.

Analysis of the relationship between various faculty status groups (all, full time, and part time) and Washington State Running Start program access rates of HUSC at community and technical colleges was necessary to test each hypothesis. The researcher employed scatterplot visuals to articulate the relationship between the two variables for each hypothesis. The range of the resulting correlation coefficient which measures the relationship is always between -1 and +1 (Creswell, 2014). A correlation coefficient of +1 demonstrates two variables which exhibit the highest degree of positive linearity, while a correlation coefficient of -1 exhibits two variables, which exhibit the highest degree of negative linearity. Finally, a correlation coefficient of 0 reflects that no linear relationship at all exists between the two variables. As such, the coefficient of determination was used to express the strength of the relationship between the two variables embedded in each hypothesis.

Presentation of Findings

Nationally and in Washington State, HUSC access and attain high-value postsecondary credentials through institutions of higher education at disproportionately lower rates (Dupree, 2018a; Taylor, 2015). In order to address these inequities, researches and policymakers have identified participation in dual-enrollment programs as a critical access point to decrease college costs and smooth the transitions between high school and college experiences (Burns et al., 2019; Hoffman et al., 2008; Wang et. al, 2015), yet in 30 years the gap persists. To further understand the relationship between the faculty diversity rates of the Washington State Community and Technical Colleges (WSCTC) system and attainment rates of HUSC in the Running Start dual-enrollment program, the researcher examined the correlation, if any, between the diversity score (Stout et al., 2018) assigned to WSCTC's based on the diversity rates of part- and full-time faculty and the access rates of HUSC Running Start dual-enrollment students in Washington State. The researcher sought to deepen the current limited body of literature using a linear regression analysis designed to generate descriptive and inferential statistics to determine what, if any, relationship exists between diversity of faculty and HUSC access to Running Start in WSCTC. This initial analysis provided foundational knowledge for policymakers and practitioners, and potential opportunities for further research into HUSC Running Start access rate improvement strategies.

Description of Data Set

Study participant data were extracted from the Washington State Board for Community and Technical Colleges' Student Enrollment Dashboard (*SBCTC Student Enrollment Dashboard, 2020)* for all 34 community and technical colleges in Washington states during 2008–2018. Data from the dashboards are drawn from over 13 million records imported from college report

uploads. The student enrollment data provided a series of snapshots that included headcount and full-time equivalent (FTE) across Washington State community and technical colleges. The dashboards allow for disaggregation by student demographics, funding source, and identified specialized programs. Student race or ethnicity demographic data are self-reported at the time of application to the college.

Faculty study participant data were extracted from the Faculty and Staff Data Dashboard (*SBCTC*, 2020) for 2008–2018. The faculty and staff data also provide a series of data snapshots, including headcount, full-time equivalent (FTE), and demographic disaggregation options. Data were updated to incorporate new data from the legacy data system to the new PeopleSoft information system for the colleges that have migrated onto the new platform. Faculty and staff race and ethnicity data are self-reported at the time of application and are optional.

Data regarding all 34 Washington State community and technical colleges were included in this study. Of the 34 institutions, 19 were designated by the Department of Education as minority serving institutions (National Center for Education Statistics [NCES], 2019). Within the cohort of colleges, the regional community designation also provides context for each institution, and another mechanism of grouping the colleges to further understand the findings.

Table 2

Institutional Data by the Urban-Centric Local Categories, Department of Education

Urban-Centric Campus Setting Location Categories	Category Definitions	Number of Institutions	Fall Institutional Enrollment	Total Running Start Enrollment
City: Large	Inside an urbanized area and principal city with 250,000+ residents	3	18,680	1,327
City: Midsize	Inside an urbanized area and principal	8	60,853	7,704

	city with 100,00 - 250,000 residents			
City: Small	Inside an urbanized area and principal city with ≤100,000 residents	12	56,252	8,113
Rural: Fringe	≤5 miles from the urbanized area and ≤2.5 miles from an urban cluster	1	1,868	255
Suburban: Large	Outside a principal city and inside an urbanized area with 250,000+ residents	6	32,267	4,436
Suburban: Midsize	Outside a principal city and inside an urbanized area with 100,00-250,000	1	7,034	1,214
Town: Distant	Inside an urban cluster that is >10 miles and ≤35 miles from an urbanized area	1	3,167	414
Town: Remote	Inside an urban cluster >35 miles from urbanized area	2	4,097	730
Totals		34	184,217	24,194

Community colleges were an access point of higher education that significantly evolved in the 1960's, and as such, many institutions are located in education deserts, or places where land grant universities and other institutions' of higher education are inaccessible without resources to travel and rehome. Predictably, the data in Table 2 regarding the location of these institutions reflects that original intent, with the greatest proportion of the institutions (12) situated in small cities across the state. The second and third largest cohorts can be found in midsized cities (8), and suburban (7) locations. The remaining institutions are located in the Seattle metro area (3 colleges in a district), towns (3) and rural communities (1). This sets geographic context for what may be an additional influence on Running Start participation in Washington State.

Research Question One Results

The first research question was simply designed to understand the diversity rates of faculty in the Washington State community and technical colleges, disaggregated by employment status (all, full-, and part-time faculty). In order to account for institutional size, the researcher used a percentage rate and related diversity score calculation. She first identified all full- and part-time faculty in each identified race and ethnicity category and divided by the total number of faculty at each institution, respectively. The resulting percentage assigned to each race and ethnicity category accounted for institutional size differences. The standard deviation of faculty percentages was then calculated at each institution to examine how the faculty ratios at each institution vary by race and ethnicity category. To complete the analysis, a related diversity score was calculated using the Stout et al. (2018) method, subtracting the standard deviation from one and multiplying the result by 100 and rounding to the nearest whole number. Those with higher scores (between the possible score of 55-100) reflected a more representative institutional diversity, and the converse is also true. Institutions with lower scores indicated a lack of diversity among faculty. The five institutions with the highest and lowest part-, full-time and all faculty diversity scores are displayed below in Tables 3-5.

Table 3
Institutions with the Highest and Lowest Diversity Scores for Full-Time Faculty

Institution	Full-time Faculty Diversity Score	Fall 2018 Enrollment	Fall 2018 Running Start Enrollment
Seattle South College	76.09	3,808	415
Seattle North College	75.45	3,223	351
Seattle Central College	75.42	4,317	561
Highline College	74.75	5,028	1,375
Bellevue College	72.50	7,133	2,235
Lower Columbia College	65.72	2,147	414

Spokane Comm. College	65.71	7,197	610
Bellingham Tech. College	65.16	1,900	78
Grays Harbor College	64.00	1,441	255
Centralia College	63.86	1,776	414

Table 4

Institutions with the Highest and Lowest Diversity Scores for Part-Time Faculty

Institution	Part-time Faculty Diversity Score	Fall 2018 Enrollment	Fall 2018 Running Start Enrollment
Seattle Central	76.11	4,317	561
Skagit Valley	73.88	3,408	505
Highline	72.55	5,028	1,375
Seattle South	72.51	3,808	415
Renton	72.38	3,165	95
Whatcom	66.09	2,164	742
Tacoma	65.78	4,094	931
GHC	65.55	1,441	255
Peninsula	65.55	1,314	323
Lower Columbia	65.15	2,147	414

Table 5

Institutions with the Highest and Lowest Diversity Scores for All Faculty

Institution	All Faculty Diversity Score	Fall 2018 Enrollment	Fall 2018 Running Start Enrollment
Shoreline	75.15	3,453	267
Bates	72.53	2,871	7
Walla Walla	72.47	2,367	199
Edmonds	72.43	3,882	832
Seattle North	72.07	3,223	351
Spokane Falls	66.12	3,756	616
Grays Harbor	66.02	1,441	255
Clover Park Tech	65.63	3,197	77
Tacoma Comm. College	65.54	4,094	931
Wenatchee Valley College	65.47	2,398	803

As evidenced in the tables above, while the range of scores is relatively narrow across the state, the key differences are reflected in which colleges show up in each of the distinct disaggregated employment status categories. Generally, part-time faculty and full-time faculty are similar in range and median scores, but institutions differ in each category. The diversity score calculation could range from 55 to 100, with 55 exhibiting no diversity and 100 reflecting a highly diverse institution. Tables 3-5 reflect the range of scores within the Washington State Community and Technical Colleges system. The range between 65.15 and 76.11 with a median score of 68.29 for part-time faculty diversity scores are very similar to the range of scores for full-time faculty between 63.86 and 76.09 and median score of 68.70.

These scores reflect a relatively narrow band of faculty diversity in Washington State community colleges, while serving the most diverse student population in the Washington State higher education system (*Washington State Board for Community and Technical Colleges Data Warehouse Data Dictionary*, 2020). Faculty diversity rates and diversity scores did not have significant outliers but reinforced the opportunity that persists for investment in diversification of all categories of faculty across the entire state's community and technical college sector.

Research Question Two Results

The second research question required the researcher to analyze the relationship between the change in diversity rates of full-time faculty over the ten-year cohort to the diversity rates of those students accessing the Running Start program in Washington State community and technical colleges. To understand that relationship, the researcher conducted a correlational analysis using RStudio after testing the appropriate assumptions to confirm overall validity of the test.

First, the underlying assumptions were tested as follows:

- Linear relationship - The residual plots revealed data plotted randomly and no clearly visible visual pattern existed
- Homoscedasticity – the residual plot results revealed the data plots were random, with outliers, revealing some heteroskedasticity. With the smaller sample size in this study, it may have effected the regression analysis by reducing the fit of the equation.
- Normal error distribution – Examination of the residuals' demonstrated the variables to demonstrate a limited linear relationship and an approximate normal distribution.

Upon completion of the assumption testing and relationship review, a simple linear regression analysis was conducted to further analyze what relationship, if any, existed between the changing faculty diversity rates and HUSC population Running Start access rates. The line of best fit, reflecting the variance between the independent and dependent variables, is established by the regression line in the linear regression model. The resulting correlation value was 0.1243208. Any correlation value close to 0 indicates a weak relationship between the variables. A value between -0.2 and 0.2 suggests much of the variation in the dependent variable is not explained by the independent variable, in this case, full-time faculty diversity score changes. In addition, the high *P* value of 0.484 indicates a result that is not statistically significant, as any *P* value must be less than 0.05 in order to be considered statistically significant. In this case, the R-squared value, with possible values between -1 and 1, results of 0.01531 further validates the results demonstrating little to no attribution of the full-time faculty diversity score change impact on the HUSC Running Start access rates, and a weak relationship

between those variables. The low R-squared value indicates the linear regression analysis provides limited explanation regarding the variability in the data surrounding the mean value.

Table 6
Full-Time Faculty and HUSC Population

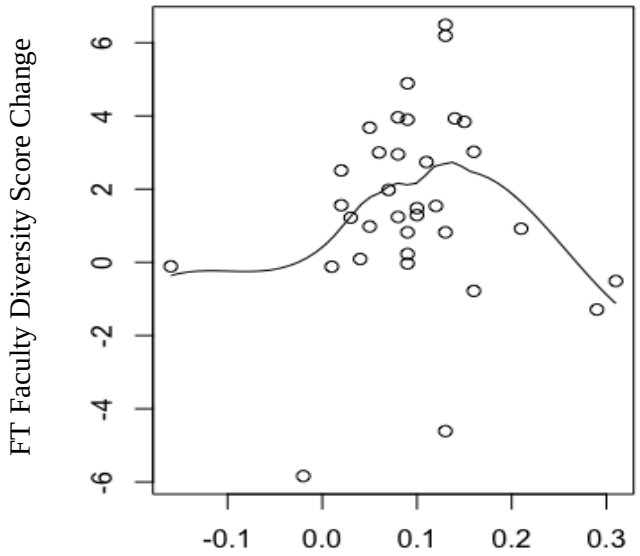
Residual	
Min	-0.266074
Median	-0.004716
Max	0.211382
Coefficients	
Intercept	4.881
Estimate standard error	0.087404
t value	0.017907
Diversity score change	0.005780
Estimate standard error	0.008155
P value	0.484
Results	
Residual standard error	0.08365
Multiple R-squared	0.01546
Adjusted R-squared	0.01531
F statistic	0.5023
P value	0.4836

There appears to be little correlation between the institutional full-time faculty diversity rate and HUSC access rates evident in the data set. Because the *P* value of 0.4836 is greater than the statistical significance level of 0.05, and the R-squared value result is low, the null hypothesis cannot be rejected, reflecting that in this study population, the Running Start access

rates do not statistically significantly increase or decrease in relationship to the changes in full-time faculty diversity rates. These results indicate the model lacks predictive value in attributing full-time faculty diversity rates to Washington HUSC Running Start access rates. Figure 1 below demonstrates the institutional change in full-time faculty diversity scores along the y-axis and along the x-axis the Washington HUSC Running Start access rates. The lack of clear slope to the line indicates that there is no clear relationship between the change in institutional full-time faculty diversity score and HUSC Running Start access rates.

Figure 1

Full-time faculty relationship to Washington HUSC Running Start access rates



Research Question Three Results

The third research question required the researcher to examine how the change in institutional diversity rates of full-time faculty over the 10-year period being studied impacted the non-HUSC Running Start access rates in Washington community and technical colleges. The

faculty data and test assumptions were duplicated, and the researcher evaluated what, if any, correlation existed between the same institutional diversity scores for full-time faculty with the non-HUSC access rates to Running Start. The results reflected no statistically significant relationship, with a correlation value of -0.04189281. Again, any value so close in proximity to 0 suggests that the impact on the dependent variable is unexplained by the independent variable. Further, the *P* value of 0.814 is greater than the predetermined 0.05, therefore the null hypothesis cannot be rejected. The R-squared value of 0.001755 reinforces the lack of predictive value of the current model.

Table 7

Full-Time Faculty and Non-HUSC Population

Residual	
Min	-0.21867
Median	-0.00761
Max	0.39100
Coefficients	
Intercept	0.000986
Estimate standard error	0.030436
t value	-3.627
Diversity score change	-0.003288
Estimate standard error	0.013861
P value	0.814022

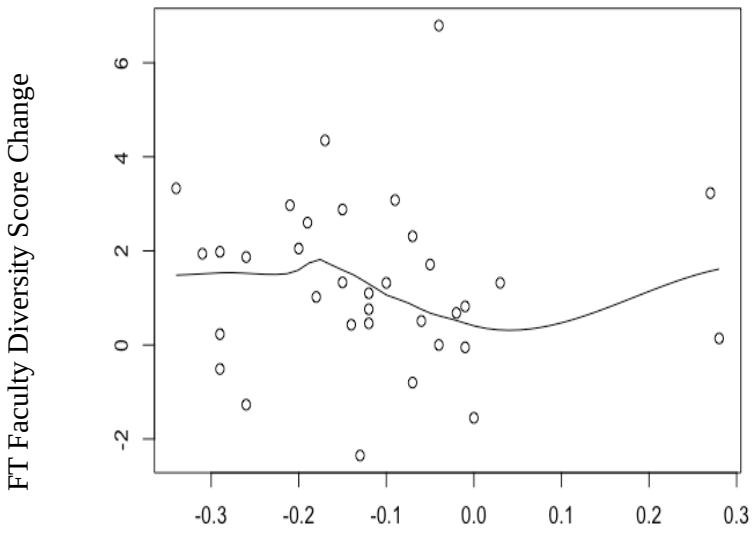
Results

Residual standard error	0.1422
Multiple R-squared	0.001755
Adjusted R-squared	-0.02944
F statistic	0.05626
P value	0.814

Figure 2 reflects the change in non-HUSC access rates along the x-axis related to the change in institutional full-time faculty change in diversity scores found along the y-axis. While the data again reflects the loss of racially minoritized full-time faculty in a few outliers, the overall range across the institutions is varied from negative change scores to positive change scores. Like the results from the HUSC population, there is no statistically significant correlation between the institutional full-time faculty diversity changes and the access rates of non-HUSC populations to the Running Start program.

Figure 2

Full-time faculty relationship to non-HUSC Running Start access rates



Research Question Four Results

The fourth research question required the researcher to analyze how the change in diversity rates of part-time faculty over the ten-year cohort exhibited a linear relationship, if at all, to the diversity rates of the Running Start participants. To understand that relationship, the researcher conducted the same assumption tests and cohort years but used part-time faculty data. The results again reflected no statistically significant relationship, with a correlation value of 0.06659216. The *P* value of 0.708 is greater than the necessary 0.05, therefore the null hypothesis cannot be rejected. The R-squared value of 0.004435 reinforces the lack of predictability in the current model.

Table 8

Part-Time Faculty and HUSC Populations

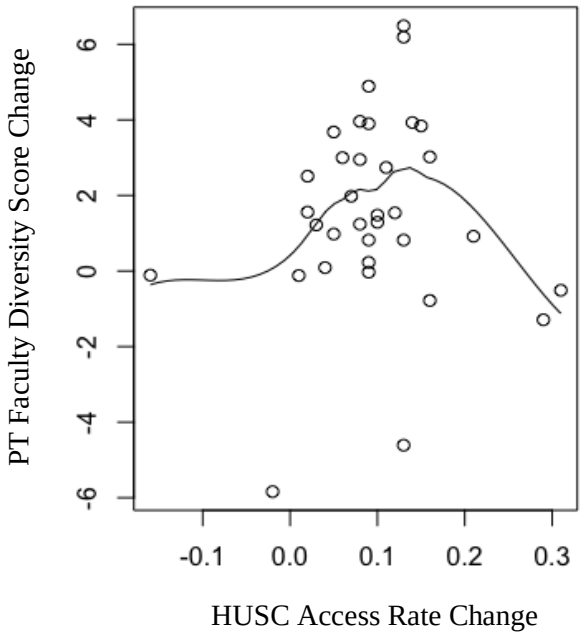
Residual	
Min	-0.251466
Median	-0.002835
Max	0.219397
Coefficients	
Intercept	5.438
Estimated standard error	0.091703
t value	0.016864
Diversity score change	0.002157
Estimated standard error	0.005712
P value	0.708

Results	
Residual standard error	0.08412
Multiple R-squared	0.004435
Adjusted R-squared	-0.02668
F statistic	0.1425
P value	0.7083

Figure 3, similar to results from question two, demonstrates the change in HUSC access rates along the x-axis related to the change in institutional part-time faculty diversity scores along the y-axis. Once again, the loss of diverse part-time faculty is demonstrated in the negative institutional change diversity scores, but no clear correlation is evidenced.

Figure 3

Part-Time Faculty Relationship to Washington HUSC Running Start Rates



Research Question Five Results

The fifth research question required the researcher to analyze how the change in diversity rates of part-time faculty over the 10-year period impacted the access rates of non-HUSC populations to the Running Start program in Washington State community and technical colleges. The researcher used the same assumption tests from question three using the same cohort years prior to conducting the correlation and linear regression to confirm the validity of the results. The correlation value result of 0.01418057 and the related *P* value of 0.9366 were once again greater than the necessary 0.05, therefore the null hypothesis cannot be rejected. The R-squared value of 0.0002011 reinforces the lack of predictive value in the current model.

Table 9

Part-Time Faculty and Non-HUSC Populations

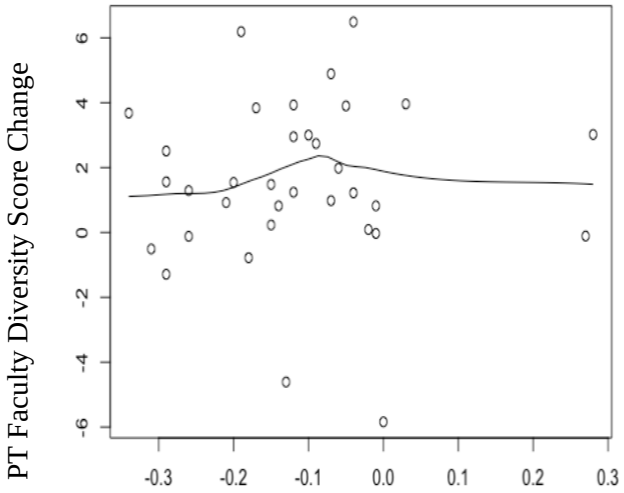
Residual	
Min	-0.22696
Median	-0.00678
Max	0.39355
Coefficients	
Intercept	0.000294
Estimated standard error	-0.1158910
t value	0.0285259
Diversity score change	0.0007752
Estimated standard error	0.0096624
P value	0.936558

Results	
Residual standard error	0.1423
Multiple R-squared	0.0002011
Adjusted R-squared	-0.03104
F statistic	0.006436
P value	0.9366

Figure 4, similar to results from question three, demonstrates the change in non-HUSC access rates along the x-axis related to the change in institutional part-time faculty diversity scores along the y-axis. Once again, the loss of diverse part-time faculty is demonstrated in the several negative institutional change diversity scores, but no clear correlation between that change and non-HUSC population access rates to Running Start is evidenced.

Figure 4

Part-Time Faculty Relationship to Washington Non-HUSC Running Start Access Rates



Research Question Six Results

The sixth research question required the researcher to analyze how the change in diversity rates of all faculty over the 10-year cohort correlated, if at all, to the access rates of HUSC Running Start participants. To understand that relationship, the researcher conducted the same assumption tests and once again the same 2008-2018 cohort years but used all faculty data. The results again reflected no statistically significant relationship with a correlational value of 0.0416095. Because the *P* value of 0.8153 is significantly greater than the necessary 0.05, the null hypothesis again cannot be rejected. The R-squared value of 0.001731 also reflected the inability to leverage the current model to explain the outcomes nor all of the potential variables impacting the results.

Table 10

All Faculty and HUSC Populations

Residual	
Min	-0.254329
Median	-0.004234
Max	0.216720
Coefficients	
Intercept	5.451
Estimated standard error	0.092871
t value	0.017039
Diversity score change	0.001457
Estimated standard error	0.006187

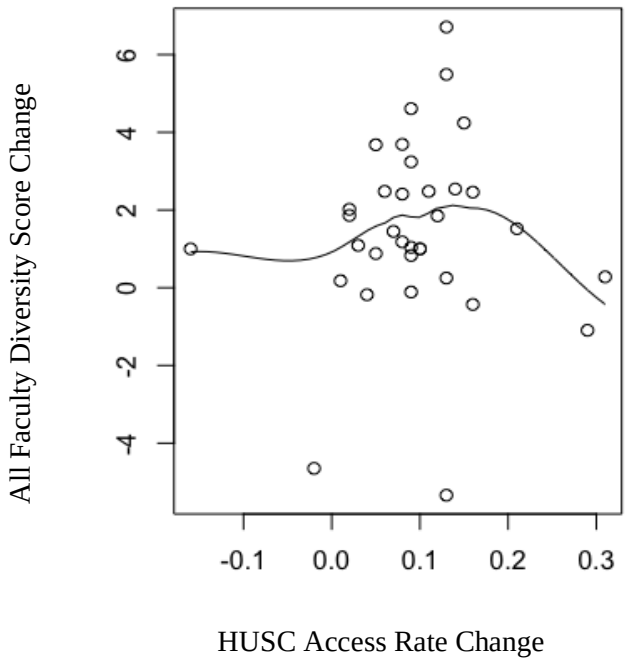
P value	0.815

Results	
Residual standard error	0.08423
Multiple R-squared	0.001731
Adjusted R-squared	-0.02946
F statistic	0.0555
P value	0.8153

Figure 5, similar to results from questions two and four, demonstrates the change in HUSC access rates along the x-axis related to the change in institutional part-time faculty diversity scores along the y-axis. As anticipated from the results of the full- and part-time faculty, the loss of all diverse faculty is demonstrated in the negative institutional change diversity scores, but again, no clear correlation is indicated.

Figure 5

All Faculty Relationship to Washington HUSC Running Start Access Rates



Summary

The study results demonstrated no correlation between a change in the diversity of faculty regardless of employment status (all, full time, or part time) and the HUSC access rates to Running Start dual credit in Washington State community and technical colleges. In addition, the results reflect no correlation between a change in the diversity of full-time or part-time faculty as well. Each test conducted reinforced the lack of relationship between the variables, including *P* values greater than 0.05 and R-squared values that were near 0, evidence that the variability among access rates of Running Start students could not be explained in the current study model. In chapter five, these findings are further discussed, including considerations for future studies and recommendations for further research in the field.

CHAPTER 5: CONCLUSION AND DISCUSSION

Introduction

In Washington State, community and technical colleges are known as open-access institutions and provide key entry points for historically underserved students of color (HUSC) into higher education at significantly higher rates than those of their private and public baccalaureate granting institutional counterparts (Dupree, 2018b). Many researchers have unpacked the broader access issue into a variety of study areas, including interrogation of policies and practices now known to disproportionately impact HUSC populations. While these policies and practices do not independently change the access barriers, they are known to weave together an institutional experience that can either support navigating institutional structures (Pierszalowski et al., n.d.; Sáenz & Ponjuan, 2011; Vishwanatha et al., 2019) or discourage the students' sense of belonging, with dual-enrollment programming becoming more critical as a bridge between secondary and postsecondary educational experiences. This quantitative study was designed to investigate what correlational relationship, if any, existed between changes in the diversity rates of minoritized full- and part-time faculty within the Washington State community and technical colleges and HUSC population access rates to the Running Start dual-enrollment program in Washington State.

The researcher employed a quantitative study, leveraging descriptive and inferential statistics to analyze historical data extracted from the Washington State Board for Community and Technical Colleges' personnel demographics dashboard and enrollment data dashboard. Data sets were used to assess the impact of the change in minoritized faculty rates at the community and technical colleges on HUSC and non-HUSC Running Start access rates over a

10-year period, from 2008-2018. The study was designed to answer the following fundamental research questions:

Research Questions

1. How diverse are all faculty, full time and part time, among community colleges?
2. What, if any, relationship exists between the diversity of racially minoritized full-time faculty at a community college and the Running Start access rates of historically underserved students of color (HUSC)?
3. What, if any, relationship exists between the diversity of racially minoritized full-time faculty at a community college and the Running Start access rates of dominant culture students (identified as non-HUSC)?
4. What, if any, relationship exists between the diversity of racially minoritized part-time faculty at a community college and the Running Start access rates of historically underserved students of color (HUSC)?
5. What, if any, relationship exists between the diversity of racially minoritized part-time faculty positions at a community college and the Running Start access rates of dominant culture students (identified as non-HUSC)?
6. What, if any, relationship exists between the diversity of all racially minoritized faculty positions at a community college and the Running Start access rates of dominant culture students (identified as non-HUSC)?

This chapter provides the researcher's summary and discussion of findings, which include considerations for future study uncovered during the study. In addition, the researcher provides considerations for other research designed to extend the literature and body of knowledge in this practice area, as well as addresses any gaps or weaknesses surfaced within this

study. Finally, policy and practice implications related to leadership practice and the relationship to the identified problem statement are discussed.

Discussion of Findings

The current literature provides a solid foundation for connecting the relationship between dual-enrollment participation and access to post-secondary education and credential completion (Edmunds et al., 2017; Gilson & Matthews, 2019; Roberts et al., 2018). Early studies indicated that dual-enrollment participants accessed and graduated in a shorter time period than their non-participating peers (Grubb et al., 2017; Karp et al., 2007; Vargas et al., 2017). In addition, research related to the access, retention, and persistence of Black students at HBCU has affirmed the importance of equity-competent communities reflecting the populations being served (Arroyo et al., 2017). The researcher sought to connect the body of research regarding the value of dual enrollment with the body of research, demonstrating the importance of racially minoritized faculty relationships with HUSC retention and completion to the exploration of the relationship between Running Start dual-enrollment access rates of HUSC populations and the evolving racial diversity of faculty and Washington State community and technical colleges.

Diversity of the Faculty

The first research question considered the changing landscape of racially minoritized faculty at Washington State community and technical colleges over the 10-year period spanning from 2008 to 2018. The resulting diversity score calculations revealed that the diversity score range of part-time faculty in 2008 and that of 2018 had changed very little. The 2008 part-time faculty institutional diversity scores ranged from 64.14 to 75.28, a range of 11.14. The 2018 part-time faculty institutional diversity scores ranged from 65.30 to 78.02, a range of 12.72. The difference in the highest score was where the greatest change occurred over the ten years. The

2008 full-time faculty institutional diversity scores ranged from 63.39 to 76.14, a range of 12.75. The 2018 full-time faculty institutional diversity scores ranged from 63.85 to 77.86, a range of 14.01. The difference in the highest score was again where the greatest change occurred over the ten years. The mean of the 2008 diversity scores for part-time faculty was 68.81 and was virtually unchanged by 2018 at which time the mean of the diversity scores for part-time faculty was 68.84. The mean of the 2008 diversity scores for full-time faculty was 68.88 and also was relatively unchanged by 2018 at which time the mean of the diversity scores for full-time faculty was 68.94. The 2008 median of the diversity score for part-time faculty as 67.75 and by 2018, the median had moved slightly to 69.52. The 2008 median of the diversity score for full-time faculty as 68.50 and by 2018, the median slightly increased to 69.84.

Part-time and full-time faculty diversity rates had barely negligible differences among the diversity scoring, meaning there was limited change in the equal distribution across racially minoritized faculty for both part-time and full-time classifications. This is reinforced on the national front with a 2019 study on racially minoritized faculty diversity rates across all institutions of higher education by the Pew Research Center which revealed that while the racial and ethnic diversity of faculty have increased over the last 20 years, faculty remain more likely than students to self-identify as white. According to the NCES (2018), approximately 76% of faculty identified as white in comparison to 55% of undergraduate students. Further, the imbalance is particularly pronounced among some racial and ethnic populations, including Black, Latinx, and American Indian/Alaska natives.

In Washington State, the diversity scores don’t fully reflect the picture of nuances in change at the institutions, and there are some positive trends to be found. Across the 34 community and technical colleges, 62% have increased the representation of racially minoritized

faculty within their part-time faculty ranks, ranging from 1 to 9% increase. Seventy-six percent have increased the representation of racially minoritized faculty within their full-time faculty ranks, ranging from 1 to 10%. Those positive trends are important signals to the communities served that the community and technical colleges are making positive strides in the hiring and retention of faculty from racially minoritized backgrounds. A small percentage of the institutions (9% for part-time faculty and 12% for full-time faculty) showed no change at all among faculty diversity rates. Finally, and most concerning, the study also revealed a small number of institutions losing ground in diversifying their faculty ranks, with 24% of institutions reflecting a decrease in the diversity rates of part-time faculty and 12% seeing a decrease in the diversity rates of full-time faculty. Again, context creates understanding, as several of the institutions that reflect a decrease in part-time faculty diversity rates also saw an increase in full-time faculty rates. Those patterns at some institutions reflect an intentional strategy designed to foster a growing pipeline for racially minoritized faculty from part-time to full-time faculty.

As discussed earlier in the literature review, a HUSC student sense of belonging is influenced significantly by the diversity of faculty and staff (Bowman et al., 2019; Harper et al., 2018; Museus et al., 2017; Solanki et al., 2019). Through their own lived experiences, a diverse faculty bring critically differentiated sets of knowledge regarding how to foster a culturally competent sense of belonging within a college life experience, known to positively influence HUSC, low-income, and first-generation students. In particular, for HUSC populations, informal and formal mentoring relationships with college faculty and staff who share a lived experienced mirrored through their racial and/or ethnic history, are particularly critical (Brooms & Davis, 2017; Crisp & Nuñez, 2014; Miller et al., 2019; Museus et al., 2018), and the improvements in the diversification of faculty remains an important part of the necessary structural change.

Faculty Diversity Relationship to Running Start Student Access

The second through the sixth research question focused on exploration of what, if any, relationship existed between the changes in part-, full-time and all faculty's institutional diversity scores and the HUSC access rates to the Running Start dual-enrollment program in Washington State. Reviewing the results revealed no statistically significant relationship between any of the faculty classifications (part time, full time, or all) and HUSC access rates to Running Start. Furthermore, it did not show a statistically significant relationship between changes in part time or full time and all faculty institutional diversity scores and non-HUSC student access rates. The *P* value was greater than 0.05, indicating no statistically significant relationship existed in each of the tests. Further, the nearly zero R-squared value reinforces that the independent variable of changes to racially minoritized faculty rates does not provide predictive value singularly in relationship to HUSC or non-HUSC student access rates to Running Start.

In reviewing the findings, the researcher recognized multiple variables that potentially influence access rates, which were not accounted for in this model. Such considerations include the high school counselor influence in the decision-making process and potential gaps in connection between these critical influencers and community college faculty, as described by Vargas et al. (2017), smoothing out the pathways across the educational ecosystem by fostering these relationships can improve the outcomes for both high school graduation and college-going by HUSC populations. This also includes reshaping the perceptions of high school counselors about community and technical colleges offerings, rigor, and credentialing as described by Fink et al. (2017) in the CCRC brief regarding what happens to the students who access dual-enrollment courses in high school. Finally, current high school counselor-to-student ratios leave

little capacity for vital college and career pathway counseling, reinforcing a system of privilege for those who have access to those services outside of the public-school offerings.

In addition to counselor influence, the information access regarding dual-enrollment programming has been inconsistent, dependent on school district and community colleges' capacity to develop effective communication materials and strategies to reach communities, parents, and students (Dupree, 2018b). With funding levels drastically cut after the 2008 recession and continuing declines in enrollment as the economy improved, communication and marketing materials may have been vulnerable to budgetary constraints.

The cost of participation should be also be considered as another influencer related to HUSC Running Start access rates. While the tuition waiver for Running Start is significant, the fees, textbook materials, and transportation costs, particularly for students in rural environments, are possibly another barrier to consider. As Smith (2014) described, the policies embedded within the Running Start program result in significant costs. These include cost of placement exams at some institutions, transportation costs, food costs (free and reduced lunch students who do not have access to that at the college campuses), and are all hidden costs of participation that appear to potential barriers to enrollment.

Finally, in addition to the aforementioned influencers including school counselor influence, information access regarding the benefits of dual-enrollment participation, transportation access, financial resources for supplies and textbooks, and other variables potentially impacting Running Start HUSC's access rates, state funding model changes over the life of the program have generated tension on an already taxed educational bridge between high school and community colleges, as each entity focuses on capturing the Running Start FTE. At its inception, the Running Start program provided a full FTE for both the college and high school

who were coordinating curricular alignment, student scheduling, and student support and engagement needs. When the funding model changed in 2011 (Dupree, 2018a), the competition for FTE's related to base funding may have been impacted and reinforced the systemic barriers for students with limited network and access to college information resources. Further study regarding these other factors is discussed later in the recommendation's sections.

Application of Findings

More HUSC students are served by community and technical colleges than any other sector of higher education in Washington State. Without access to higher education, participating in the recovery from our current pandemic-related economic crisis will be nearly impossible for many communities of color whose occupations in service industries have been most heavily impacted by the crisis. The results of this study, while not finding a statistically significant relationship between 2008-2018 HUSC Running Start access rates and institutional diversity scores, underscores a broader issue in Washington State community and technical colleges that influenced the outcomes of this study.

The community and technical college (CTC) faculty diversity rates have made only small, incremental improvements in diversification of the CTC academy. The incremental changes are not enough to demonstrate impact, and when further disaggregated by institution, often historically minoritized faculty categories lacked a critical mass to influence college policy, practice, or culture (Malcolm & Malcolm-Piqueux, 2013). The lack of a peer community and sense of belonging impacts faculty in much the same way students experience it (Zambrana et al., 2015). Without a peer group and intentional excellent mentoring, minoritized faculty are more likely to leave and those who stay express experiencing muted voices in the institution (Abdul-Raheem, 2016).

In addition to a lack of critical mass, the data reflect that limited change has occurred, and the improvements that are noted occurred in the last 1-3 years. That timing is significant for a couple of reasons. First, the first three to five years in a new faculty's institutional hiring process is critical, as faculty are engaged in a tenure process during which they may feel vulnerable. Faculty report they were less willing to engage in challenging institutional norms until their roles were more protected (Oropeza & Fujimoto, 2012; Zambrana et al., 2015), making the future five-to-10-year cohort of students and faculty data of particular interest as those processes will have completed. Finally, in addition to faculty's experiencing tenure processes as opportunities to accommodate current norms rather than challenge them, the impact on HUSC access rates from the most recent changes in diversity are not likely to be seen for five to 10 years.

The researcher will share the results of this study in anticipation of impacting the field by further interrogating the complex variables influencing HUSC access rates to Running Start in Washington State. In spite of the limits on the predictive value of the results, the landscape of variables can now be explored, and policies, practices, and systems challenged to clarify those variable influencers in order to improve Running Start and overall higher education rates of access for HUSC populations. Focusing on the junctures where student momentum is lost, as discussed in earlier chapters, remains vital to workforce development in an economic recovery (Strumbos et al., 2018).

Application to Leadership

Washington State Community and Technical College system leaders are critical to the deconstruction and redesigning of community and technical colleges and how dual-enrollment programs can be leveraged by leaders to improve HUSC access rates. Currently, Washington

State Running Start access rates of HUSC populations significantly differ than those of their dominant culture peers (Dupree, 2018a; Taylor, 2015). Dual-enrollment students transition at higher rates than their non-participant peers (Dupree, 2018a). With that access gap, HUSC populations are missing out on the vital opportunity to smooth out the pathway to college for low-income communities of color, historically underserved by the state systems. Structural changes to the Washington State Community and Technical Colleges system have been underway for several years, as the SBCTC and the Washington State legislature invested heavily in scaling the Guided Pathways framework across the system (Bailey, et al., 2015). However, improvements in institutional retention and completion outcomes have reflected limited impact on equity gaps. That persistent systemic barrier reflects the work that remains to be done in building the pathways within and across the educational ecosystem in Washington State.

While the results of this study did not reject the null hypothesis or reveal a strong linear relationship between from 2008-2018 faculty diversity rates and 2008-2018 HUSC access rates to Running Start, questions remain about how diversity rates of faculty may impact the dual credit access rates of HUSC populations. As mentioned earlier, several factors potentially influenced the study outcomes. The small incremental changes that occurred over the 10-year period make it difficult to detect cultural changes from those small changes in diversity. Second, without a critical mass, minoritized faculty are more likely to have their voiced muted by institutional norms (Louis et al., 2017). Finally, during the tenure process, faculty have historically been unwilling to challenge institutional norms for fear of retribution and harm to their successful progression through the tenure process (Parsons et al., 2018).

College and policy leadership are well positioned to address each named influencer. As primary institutional actors, instrumental in either perpetuating the current educational

ecosystem or dismantling it, they have the positional authority to impact faculty hiring, retention, and professional development processes, and are critical to addressing structural inequities in faculty representation. They have the opportunity to co-design with students, communities, and faculty a learning system focused on breaking down systemic inequities, and lessons from this study can be applied in that context.

First, faculty hiring is most often designed by a discipline specific hiring committee comprised of peer faculty. As one faculty member recently described the process,

> Because tenure-track positions come along once every 10 or 15 years at best, it's not like choosing someone you will work with for a little while. It's more like choosing your life partner, especially in our small department. Choosing someone who has shared some experiences with me just made sense for me in the long run.

The hiring process reflected in this candid statement by a faculty member regarding peer homogeneity is reinforced by Holcombe and Kezar (2018) who described how the mental models of individual faculty and leadership have significant impact on the hiring of faculty and the faculty integration process. Kezar et al. (2015) further examined the faculty community, referred to as the professoriate, and articulated the importance of intentional examination by individuals of their mental models in order to uncover biases embedded in mental models that drive hiring behaviors and expectations. Kezar, in her earlier work, described the importance of leveraging a mental model examination process to facilitate organizational change, leading to a more diverse faculty body impacting the access and success of HUSC populations in higher education (Kezar, 2001, 2013).

In addition to the impact of individual and group think mental models interaction with the hiring process and the systemic hiring policies and practices impact the successful hiring and

retention of minoritized faculty. Malcolm and Malcolm-Piqueux (2013) describe the importance of critical mass in supporting minoritized faculty. In addition to building a peer mentor network as Zambrana (2015) highlights, the faculty peer community can share lived experiences and provide a necessary support network as an affinity cohort within the academy.

Finally, as faculty tenure positions continue to decline in the face of public divestment in higher education, the tenure process in many spaces has been protected instead of reflected upon (Abdul-Raheem, 2016). The tenure process generally provided a window of time for the institutional actors to determine whether the new faculty member "fit in." Fitting in often meant assimilating into cultural norms of the institution that reinforced a dominant culture centered approach to research, teaching, learning, and assessment. Several studies over the last decade have referred to the academy as one built for oppression (Sztainbok, 2016; Hodge, 2012). Sztainbok's foregrounds women of color (WOC) in their description of faculty of color movement through the academy's tenure experiences; and describes how WOC normalized the microaggressions, dismissing of ethnic studies, and other racist experiences as part of survival. This provides insights into how the faculty tenure process over time can become a developmental process that either reinforces the current academy's historical foundations designed for dominant culture, or incorporates equity-minded praxis, critical theory, and a deep commitment to institutional evolution to meet the needs of every community and learner.

This research highlights the opportunities within this arena and the potential impacts in the future on access to dual credit programs. In the next section, the researcher synthesizes those themes and learnings to provide a series of recommendations.

Policy and Practice Recommendations

The transformative leaders necessary in today's higher education system described by Mathis and Roueche (2019) are called on to design and build a race and gender-conscious, justice-centered culture that values diversity, equity, and inclusion. Those values must be integral to the campus community as necessary conditions designed to improve students' sense of belonging upon entry and throughout the student journey, as Glass et al. (2017) and Harris et al. (2017) describe in recent studies examining HUSC sense of belonging impact on student outcomes. In order to achieve that culture, several policy and practice recommendations follow.

First, while the results of this study did not provide clarity regarding the relationship between Washington State Running Start access rates by HUSC populations and the diversity score changes in those colleges, the literature clearly articulates the positive impact that hiring and retaining a diverse faculty has on a college culture. This provides a critical opportunity to operationalize the values into a plan of action designed to transform the institutions from those of the past, built on a deeply rooted racialized history to colleges that reflect authentic access for all. Faculty play a significant role in the student experience, having the greatest number of contact hours with students overall, even in a college where mandatory advising, orientation, and other student services exist. The classroom, by that measure, has the broadest impact on a student journey, and provides an important developmental opportunity for community college leaders to begin the transformative process.

In order to effectively address recruitment, hiring and onboarding practices, human resources, college leadership, and hiring committees must engage in effective professional development to interrogate their own policies, practices, and beliefs, in order to understand where the breakdown in the process exists (Oropeza & Fujimoto, 2012). This inquiry practice

must be focused on continuous improvement, including regular review of hiring data, practices, and procedures to better understand the results of the process interventions and modifications. Engaging committees in search advocate training and other professional development opportunities also reinforces the cultural changes necessary for an institutional transformation.

In addition to hiring, onboarding, and retaining a diverse faculty, leaders may consider additional professional development of the entire campus in equity-minded praxis, with a focus on role specific exercises, extended learning projects, and ongoing structured discussions designed to integrate the learning into faculty and staff daily work. This also begins to build the needed shared language Bolton et al. (2017) and Lindsey et al. (2017) reference as foundational for the institutional changes needed to improve equity gaps. Faculty engagement in critical pedagogy professional development and leveraging existing tools such as the race equity toolkit from the Center for Urban Education (Malcolm-Piqueux & Bensimon, 2017, Jimenez, 2020) can contribute to narrowing the equity gap.

In addition, institutional transformation is heavily reliant on transformational leaders, who effectively build an aligned and coherent set of values and operational structures to actualize them. In order to prioritize that expertise, trustees and future leaders should be evaluated based on equity competencies, and also be required to continue their development in that area in order to deepen their understanding of the role they play in the systemic change. This deepened understanding, including foundational understanding and visible acknowledgement of the historical systemic constructs that are generating current outcomes is a mechanism of building that understanding.

Finally, integration of diverse student and community voices into the systemic design remains a developmental opportunity for most institutions as well. The Washington community

college system remains largely similar to how it was constructed out of the K-12 system 50 years ago. That model, grounded in a Eurocentric hierarchy of knowledge, has consistently left out the funds of knowledge (Cadenas et al., 2020) and community cultural wealth (Yosso, 2005, McManigell, 2018) that exist among communities of color. This disconnect between the system and the community replicates inequities by design. By working on the transformative process with rather than for communities, the opportunity for moving closer to an equitable system exists. This must happen systemically, in both policy and practice, with leaders across the system engaging in the discourse required to consider how resource allocation, organizational structure, and authentic engagement can occur in their localized context.

Recommendations and Considerations for Additional Research

The study results did not produce evidence of a clear connection between the changes in the diversity of faculty in Washington State community and technical colleges and the HUSC access rates to Running Start. The study leaves opportunity for further research to understand the impact of the equity gaps that exist. Several other areas emerged from the study as opportunities for future research to continue the interrogation of policy and practices impacting HUSC Running Start access rates in Washington community and technical colleges.

First, replicating the study on a larger scale would be useful, particularly across institutions in which greater progress had been made in the diversification of faculty. As this study exposed, limited progress had been made across the state; the homogeneity of the institutions revealed a potential systemic opportunity for intervention. While the hiring of faculty had been impacted during the 10-year cohort by decreased state funding related to the 2008 recession, the lack of improvement warrants further investigation.

In addition to a larger-scale study, considering the structure and timing of faculty hiring and moving through the tenure process would be valuable to understand in this context, such as, if a critical mass of minoritized faculty are hired at the same time, does that impact the pace at which they can engage in discourse around current practices including access processes for Running Start? Further interrogating those processes could reveal information relevant for policy and practice changes in that area. In particular, leaders working to transform their institutions to equity-centered community colleges prepared to close equity gaps must consider the impact of those processes on the pace of transformation.

One final variable that could not be clarified was the level with which potential HUSC Running Start students and communities engaged with institutional faculty, providing a greater opportunity to influence dual-enrollment access outcomes. It is unclear if any faculty and more specifically minoritized faculty were included in the recruitment and orientation processes, which could provide revealing insights into further practice and policy opportunities for change.

Finally, in consideration of the study findings, opportunities exist to refine the study structure to clarify meaning from the results. Use of a linear regression analysis that incorporates additional variables in a larger context has potential for further explicating the results, and understanding the intersections of variables that influence HUSC access to Running Start. For example, incorporating data regarding faculty engagement in Running Start outreach activities to HUSC populations into a multi-linear regression analysis could refine the analysis to generate more meaningful positive or negative correlations.

Another data point that appears relevant in light of the results is a deepened understanding of the diversity of staffing of Running Start programs at the community and technical colleges and their level of engagement with faculty. Silos are a source of constant

struggle in institutions of higher education (Kezar and Holcombe, 2018), and their impacts on overall student success may be an opportunity for further study in this context.

Concluding Statement

The year after I graduated from college, Gloria Anzaldúa published an epigraph challenging the academy to consider who was missing and what role institutions of higher education have in constructing a just society. She described the value of considering pedagogical tools to challenge racism, misogyny, and classism, and the need to acknowledge that the experiential knowledge of non-dominant populations must be legitimized.

> We are articulating new positions in the "in-between," Borderland worlds of ethnic communities and academies . . . social issues such as race, class, and sexual difference are intertwined with the narrative and poetic elements of a text, elements in which theory is embedded. In our mestizaje theories we create new categories for those of us left out or pushed out of existing ones. Anzaldúa (1990, pp. xxv-xxvi)

Her words continue to resonate today and remain opportunities not yet actualized. While much progress has been made in the Washington State Community and Technical Colleges system in moving a dialogue forward among trustees, leadership, and many practitioners acknowledging the racialized, misogynistic structures embedded in higher education, changes in practice and policy are still lagging. Washington's community and technical college system serves half of all baccalaureate graduates in the state. Across the country, nearly half of all students—and approximately 70% of HUSC populations—entering higher education start their journey in a community college. The opportunity to impact equity gaps in educational attainment through changes to HUSC population community college access rates requires further inquiry, study, and, most important, action. The economic mobility tied to meaningful credentialing

continues to be evidenced, and, in the wake of the new pandemic related economic crisis, will be more critical than ever before.

REFERENCES

Abdul-Raheem, J. (2016). Faculty diversity and tenure in higher education. *Journal of Cultural Diversity*, *23*(2), 53–56.

Alcantar, C. M., & Hernandez, E. (2020). "Here the professors are your guide, tus guías": Latina/o student validating experiences with faculty at a Hispanic-serving community college. *Journal of Hispanic Higher Education*, *19*(1), 3–18. https://doi.org/10.1177/1538192718766234

Anguluan-Coger, E. (2015). Intergenerational mythweaving and cultural identity. In *Dissertation Abstracts International Section A: Humanities and Social Sciences* (Vol. 75, Issues 7-A(E), p. No-Specified). ProQuest Information & Learning. http://gateway.proquest.com/openurl?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&res_dat=xri:pqm&rft_dat=xri:pqdiss:3615959%5Cnhttp://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc11&NEWS=N&AN=2015-99011-123

Arroyo, A. T., Palmer, R. T., & Louis, D. A. (2017). Supporting racially diverse students at HBCUs: A student affairs perspective. https://doi.org/10.1080/19496591.2016.1219266

Bahr, P. R. (2013). The deconstructive approach to understanding community college students' pathways and outcomes. *Community College Review*. https://doi.org/10.1177/0091552113486341

Bahr, P. R., Jackson, G., McNaughtan, J., Oster, M., & Gross, J. (2017). Unrealized potential: Community college pathways to STEM baccalaureate degrees. *Journal of Higher Education*. https://doi.org/10.1080/00221546.2016.1257313

Bailey, T. R., Jaggars, S. S., & Jenkins, D. (2015). *Redesigning America's community colleges*.

Harvard University Press.

Baker, C. N. (2013). Social support and success in higher education: The influence of on-campus support on African American and Latino college students. *Urban Review*, *45*, 632–650. https://doi.org/10.1007/s11256-013-0234-9

Balfanz, R., DePaoli, J. L., Ingram, E. S., Bridgeland, J. M., & Fox, J. H. (2016). Closing the college gap: A roadmap to postsecondary readiness and attainment. Civic Enterprises.

Bathmaker, A.-M., Ingram, N., Abrahams, J., Hoare, A., Waller, R., & Bradley, H. (2016). *Higher education, social class and social mobility: The degree generation*. Palgrave Macmillan.

Baum, S., Ma, J., & Payea, K. (2013). Education pays 2013: The benefits of higher education for individuals and society. In *Trends in Higher Education Series*. https://doi.org/10.1007/s10072-011-0889-5

Belfield, C. R., & Bailey, T. (2011). The benefits of attending community college: A review of the evidence. *Community College Review*, *39*(1), 46–68. https://doi.org/10.1177/0091552110395575

Bell, D. A. (1980). Brown v Board of Education. *Harvard Law Review*, *93*(3), 518–533. https://doi.org/10.2307/1340546

Berger, A., Knudson, J., & Hoshen, G. (2014). Early college high school initiative impact study. www.air.org

Bers, T., & Schuetz, P. (2014). Nearbies: A missing piece of the college completion conundrum. *Community College Review*, *42*(3), 167–183.

Biraimah, K. L. (2016). Moving beyond a destructive past to a decolonised and inclusive future: The role of ubuntu-style education in providing culturally relevant pedagogy for namibia.

International Review of Education, *62*, 45–62. https://doi.org/10.1007/s11159-016-9541-1

Blankenberger, B., Lichtenberger, E., Witt, M. A., & Franklin, D. (2017). Diverse students, high school factors, and completion agenda goals: An analysis of the Illinois class of 2003. *Education and Urban Society*, *49*(5), 518–545. https://doi.org/10.1177/0013124516644047

Bloomer, T., & Kaikkonen, D. (2014). *Community and technical college student access and success by race/ethnicity and socioeconomic status 2014 progress report.*

Bolton, K., Felton, J., Fine, R., Gavin, M., & Jackson, J. (2017). Committing to equity: A catalyst for institutional transformation - ProQuest. *Peer Review*, *19*(2), 9–10. https://search-proquest-com.proxy.cityu.edu/docview/1930762490/fulltext/3A700E4FB6AB42DCPQ/1?accountid=1230

Bowen, W., Kurzweil, M., & Tobin, E. (2005). An equity and excellence time line. *Equity and Excellence in American Higher Education*.

Bowman, N. A., Jarratt, L., Jang, N., & Bono, T. J. (2019). The unfolding of student adjustment during the first semester of college. *Research in Higher Education*, *60*(3), 273–292. https://doi.org/10.1007/s11162-018-9535-x

Bragg, D. D. (2017). The case for evaluating student outcomes and equity gaps to improve pathways and programs of study. In *New Directions for Community Colleges* (Vol. 2017, Issue 178, pp. 55–66). https://doi.org/10.1002/cc.20253

Bragg, D. D., Kim, E., & Barnett, E. A. (2006). Creating access and success: Academic pathways reaching underserved students. *New Directions for Community Colleges*. https://doi.org/10.1002/cc.243

Branand, B., Mashek, D., Wray-Lake, L., & Coffey, J. K. (2015). Inclusion of college

community in the self: A longitudinal study of the role of self-expansion in students' satisfaction (Vol. 56, Issue 8). *Journal of College Student Development, 56*(8), 829-844.

Brooms, D. R., & Davis, A. R. (2017). Staying focused on the goal: Peer bonding and faculty mentors supporting black males' persistence in college. *Journal of Black Studies*, *48*(3), 305–326. https://doi.org/10.1177/0021934717692520

Brooms, D. R. (2019). "I was just trying to make it": Examining urban Black males' sense of belonging, schooling experiences, and academic success. *Urban Education, 54*(6), 804-830. doi:10.1177/0042085916648743.

Broton, K. M., & Goldrick-Rab, S. (2018). Going without: An exploration of food and housing insecurity among undergraduates. *Educational Researcher*, *47*(2). https://doi.org/10.3102/0013189X17741303

Bryant, A. C., Triplett, N. P., Watson, M. J., & Lewis, C. W. (2017). The browning of American public schools: Evidence of increasing racial diversity and the implications for policy, practice, and student outcomes. *Urban Rev, 49*, 263–278. https://doi.org/10.1007/s11256-017-0400-6

Burke, A. M. (2013). *The Latino education crisis: The consequences of failed social policies, by Patricia Gándara and Frances Contreras:* (2009) Cambridge, MA, and London, England: *Harvard University Press, 432 pp* Routledge. doi:10.1080/15235882.2013.837119.

Burns, K., Ellegood, W. A., Bernard Bracy, J. M., Duncan, M., & Sweeney, D. C. (2019). Early college credit programs positively impact student success. *Journal of Advanced Academics*, *30*(1), 27–49. https://doi.org/10.1177/1932202X18801274

Byrd Chicago, A. M. (2017). Transfer student success: Latinx students overcoming challenges at two- and four-year institutions toward baccalaureate degree attainment.

https://courses.cityu.edu/courses/1/11831399/db/_7178113_1/Byrd.pdf

Cadenas, G. A., Cantú, E. A., Spence, T., & Ruth, A. (2020). Integrating critical consciousness and technology in entrepreneurship career development with diverse community college students. *Journal of Career Development, 47*(2), 162-176. doi:10.1177/0894845318793968

Carales, V. D., & Nora, A. (2020). Finding place: Cognitive and psychosocial factors impacting Latina/o students' sense of belonging. *Journal of Student Affairs Research and Practice*. https://doi.org/10.1080/19496591.2019.1662795

Carnevale, A. P. (2016). Credentials and competencies: Demonstrating the economic value of postsecondary education. *Georgetown University McCourt School of Public Policy.*

Carnevale, A. P., Jayasundera, T., & Gulish, A. (2016). America's divided recovery: College haves and have-nots. *Georgetown University*, 44. https://eric.ed.gov/?id=ED574377%0A

Carter, J. C., Bewlay, P. L., Berry, V. M., Coffey, G., & Director, M. E. (2008). *Tapping diversity to maximize innovation.* http://library.books24x7.com.proxy.cityu.edu/toc.aspx?bookid=27165

Cejda, B. D., & Hoover, R. E. (2010). Strategies for faculty-student engagement: How community college faculty engage Latino students. *Journal of College Student Retention, 12*(2), 135–153. https://doi.org/10.2190/CS.12.2.b

Chaurasia, S., & Shukla, A. (2012). Diversity and its effect on firm performance: A critical review. *Journal of Strategic Human Resource Management*.

Chase, M. M., Dowd, A. C., Pazich, L. B., & Bensimon, E. M. (2014). Transfer equity for "minoritized" students: A critical policy analysis of seven states. *Educational Policy, 28*(5), 669-717. doi:10.1177/0895904812468227.

Cheng, D. X. (2015). Students' sense of campus community: What it means, and what to do

about it. *NASPA Journal*, *41*(2). https://doi.org/10.2202/0027-6014.1331

Chetty, R., Grusky, D., Hell, M., Hendren, N., Manduca, R., & Narang, J. (2017). The fading American dream: Trends in absolute income mobility since 1940. *Science*, *356*(6336), 398–406. https://doi.org/10.1126/science.aal4617

Coley, R. J., & Baker, B. (2013). Poverty and education: Finding the way forward. *Ets*, 1–59.

Cooney, M. A., Borland, K. W., Brackenbury, T., Pauken, P. D., & Wilson, M. E. (2016). The demographics and utilization of transformational leadership practices by potential community college presidents. https://search-proquest-com.proxy.cityu.edu/docview/1865857607?pq-origsite=summon

Creswell, J. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th ed.). Sage Publications.

Crisp, G., & Nora, A. (2010). Hispanic student success: Factors influencing the persistence and transfer decisions of Latino community college students enrolled in developmental education. *Research in Higher Education*, *51*(2), 175–194. https://doi.org/10.1007/s11162-009-9151-x

Crisp, G., Nora, A., & Taggart, A. (2009). Student characteristics, pre-college, college, and environmental factors as predictors of majoring in and earning a STEM degree: An analysis of students attending a Hispanic serving institution. *American Educational Research Journal*, *46*(4), 924–942. https://doi.org/10.3102/0002831209349460

Crisp, G., & Nuñez, A. M. (2014). Understanding the racial transfer gap: Modeling underrepresented minority and nonminority students' pathways from two-to four-year institutions. *Review of Higher Education*. https://doi.org/10.1353/rhe.2014.0017

Danowitz, M. A., & Tuitt, F. (2011). Enacting inclusivity through engaged pedagogy: A higher

education perspective. *Equity and Excellence in Education*. https://doi.org/10.1080/10665684.2011.539474

De Brey, C., Musu, L., McFarland, J., Wilkinson-Flicker, S., Diliberti, M., Zhang, A., Branstetter, C., Wang, X. (2018). Status and trends in the education of racial and ethnic groups 2018. *Institute of Education Sciences National Center for Education Statistics.*

De Los Ríos, C. V, López, J., Morrell, E., De Los Ríos, C. V, López, J., & Morrell, E. (2015). Toward a critical pedagogy of race: Ethnic studies and literacies of power in high school classrooms. *Race Soc Probl*, *7*, 84–96. https://doi.org/10.1007/s12552-014-9142-1

Deil-Amen, R. (2011). Socio-academic integrative moments: Rethinking academic and social integration among two-year college career-related programs. *Journal of Higher Education*, *82*(1), 54–91.

Design, E. (2015). Analysis reference. *ReliaSoft Corporation, Worldwide Headquarters*, *1450*, 85710-6703.

Dowd, A. C., & Bensimon, E. M. (2015). *Engaging the "race question": Accountability and equity in US higher education.* Teachers College Press.

Druery, J. E., & Brooms, D. R. (2018). *"It lit up the campus": Engaging Black males in culturally enriching environments*. *Journal of Diversity in Higher Education, 12*(4), 330–340.

Dupree, D. (2018a). Running Start participation and success. *Community and Technical Colleges Washington State Board.*

Dupree, D. (2018b). *Why focus on equity*. *Community and Technical Colleges Washington State Board.*

https://www.sbctc.edu/resources/documents/colleges-staff/research/research-briefs/why-focus-on-equity-issue-brief.pdf

Edmunds, J., Unlu, F., Glennie, E., Bernstein, L., Fesler, L., Furey, J., & Arshavsky, N. (2017). Smoothing the transition to postsecondary education: The impact of the early college model: EBSCOhost. *Journal of Research on Educational Effectiveness*, *10*(2), 297–325. https://doi.org/http://dx.doi.org/10.1080/19345747.2016.1191574

Equity in College Preparatory Programs with Exams (CPPE). (2019). https://secure-media.collegeboard.org/digitalServices/pdf/research/2018/School-Report-11th-and-12th-2018.pdf

Federal Communications Commission. (2019). https://www.ustelecom.org/ustelecom-broadband-capital-expenditures-once-again-on-upward-

Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). Sage Publications, Inc.

Fink, J., Jenkins, D., Yanagiura, T., Dundar, A., Shapiro, D., Bailey, T., Barnett, E., Ganga, E., Karp, M., & Amy, C. (2017). What happens to students who take community college "dual enrollment" courses in high school?

Fry, R. (2017, January). US still has a ways to go in meeting Obama's 2020 goal of more college grads yet to be met. *http://pewrsr.ch/2jn2PdH*. P*ew Research Center*. https://www.pewresearch.org/fact-tank/2017/01/18/u-s-still-has-a-ways-to-go-in-meeting-obamas-goal-of-producing-more-college-grads/.

Ghazzawi, I. A., Lee, B., & Cho, Y. (2019). Reaching out to underserved high school students: An experiential approach to higher education. *Journal of Higher Education Theory and Practice, 19*(4), 42-59. doi:10.33423/jhetp.v19i4.2201.

Gibbons, M. M., & Woodside, M. (2014). Addressing the needs of first-generation college students: Lessons learned from adults from low-education families. *Journal of College*

Counseling, *17*(1), 21–36. https://doi.org/10.1002/j.2161-1882.2014.00045.x

Gilson, C. M., & Matthews, M. S. (2019). Case study of a new engineering early college high school: Advancing educational opportunities for underrepresented students in an urban area. *Journal of Advanced Academics*, *30*(3), 235–267. https://doi.org/10.1177/1932202X19840024

Glass, C. R., Gesing, P., Hales, A., & Cong, C. (2017). Faculty as bridges to co-curricular engagement and community for first-generation international students. *Studies in Higher Education*, *42*(5), 895–910. https://doi.org/10.1080/03075079.2017.1293877

Griffin, K. A., Muñiz, M. M., & Espinosa, L. (2012). The influence of campus racial climate on diversity in graduate education. *Review of Higher Eduation*, *35*(4814814), 535–566.

Grubb, J. M., Scott, P. H., & Good, D. W. (2017). The answer is yes: Dual enrollment benefits students at the community college. *Community College Review*, *45*(2), 79–98. https://doi.org/10.1177/0091552116682590

Harper, S. R., Smith, E. J., & Davis Iii, C. H. F. (2018). A critical race case analysis of Black undergraduate student success at an urban university. *Urban Education*, *53*(1), 3–25. https://doi.org/10.1177/0042085916668956

Harris, F., Wood, J. L., & Bensimon, E. M. (2017). Supporting men of color in community colleges: An examination of promising practices and California student equity plans. Permission from *CCEAL* and *CUE.*

Hasan, S., & Bagde, S. (2013). The mechanics of social capital and academic performance in an Indian college. *American Sociological Review*, *78*(6), 1009–1032. http://asr.sagepub.com/content/78/6/1009.abstract

Hodge, A. A. (2012). Integrated but unequal: Black faculty in predominately white

space. *Choice, 49*(10), 1920-1921. Retrieved from http://proxy.cityu.edu/login?url=https://www-proquest-com.proxy.cityu.edu/docview/1022702437?accountid=1230

Hoffman, N., Vargas, J., & Santos, J. (2008). Blending high school and college: Rethinking the transition. *New Directions for Higher Education, 144*, 15–25. https://doi.org/10.1002/he

Hoffman, N., Vargas, J., & Santos, J. (2009). New directions for dual enrollment: Creating stronger pathways from high school through college. *New Directions for Community Colleges*. https://doi.org/10.1002/cc.354

Holcombe, E., & Kezar, A. (2018). Mental models and implementing new faculty roles. *Innovative Higher Education, 43*(2), 91-106. doi:http://dx.doi.org.proxy.cityu.edu/10.1007/s10755-017-9415-x

Howard, T. C., & Navarro, O. (2016). Critical race theory 20 years later: Where do we go from here? *Urban Education, 51*(3), 253–273. https://doi.org/10.1177/0042085915622541

Hurtado, S., & Ruiz Alvarado, A. (2013). Diversity in teaching and learning: Affirming students as empowered learners. *Diversity and Democracy*, *16*(3).

Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on latino college students' sense of belonging. Sociology of Education, 70(4), 324-345. doi:10.2307/2673270.

Jaggars, S. S., Hodara, M., Cho, S. W., & Xu, D. (2015). Three accelerated developmental education programs: Features, student outcomes, and implications. *Community College Review*. https://doi.org/10.1177/0091552114551752

Jenkins, D., Lahr, H., & Fink, J. (2017). Implementing guided pathways: Early insights from the AACC Pathways colleges. Columbia University.

https://ccrc.tc.columbia.edu/media/k2/attachments/implementing-guided-pathways-aacc.pdf

Jenkins, Davis, & Cho, S.W. (2013). Get with the program … and finish it: Building guided pathways to accelerate student completion. *New Directions for Community Colleges*. https://doi.org/10.1002/cc.20078

Jimenez, R. M. (2020). Community cultural wealth pedagogies: Cultivating autoethnographic counternarratives and migration capital. *American Educational Research Journal, 57*(2), 775-807. doi:10.3102/0002831219866148

Johnson, R., Kim, J. Y. C., & Lee, J. J. Y. (2016). Asians and the myth of the model minority in higher education: A psychocultural reality in the 21st century. In *Gaming and Technology Addiction: Breakthroughs in Research and Practice*. https://doi.org/10.4018/978-1-5225-0778-9.ch003

Jones, J. (2017). The racial wealth gap: How African-Americans have been shortchanged out of the materials to build wealth. *Economic Policy Institute: Working Economics Blog*.

Kaikkonen, D. (2019). *Enrollment trends: Pre-Recession to current day*.

Kaiser, C. R., Major, B., Jurcevic, I., Dover, T. L., Brady, L. M., & Shapiro, J. R. (2013). Presumed fair: Ironic effects of organizational diversity structures. *Journal of Personality and Social Psychology, 104*(3), 504–519. https://doi.org/10.1037/a0030838

Karp, M. M., Calcagno, J. C., Hughes, K. L., Jeong, D. W., & Bailey, T. R. (2007). The postsecondary achievement of participants in dual enrollment: An analysis of student outcomes in two states. *Community College Research Center Columbia University*, 83. http://ccrc.tc.columbia.edu/Publication.asp?UID=547

Kelchen, R., Goldrick-Rab, S., & Hosch, B. (2017). The costs of college attendance: Examining variation and consistency in institutional living cost allowances. *Journal of Higher*

Education, *88*(6). https://doi.org/10.1080/00221546.2016.1272092

Kezar, A. (2001). Understanding and facilitating organizational change in the 21st century. *ASHE-ERIC Higher Education Report, 28*(4), 147. San Francisco, CA: Jossey-Bass.

Kezar, A. (2013). How colleges change: Understanding, leading, and enacting change. New York, NY: Routledge.

Kezar, A., Maxey, D., & Holcombe, E. (2015). *The professoriate reconsidered.* Los Angeles, CA: Pullias Center for Higher Education

Kim, Y. K., & Lundberg, C. A. (2016). A structural model of the relationship between student-faculty interaction and cognitive skills development among college students. *Research in Higher Education*, *57*, 288–309. https://doi.org/10.1007/s11162-015-9387-6

Klugman, J. (2013). The advanced placement arms race and the reproduction of educational inequality - CatalogPlus. *Teachers College Record*, *115*(5), 1–34. https://cityuseattle-summon-serialssolutions-com.proxy.cityu.edu/search?q=Klugman%2C+Joshua%2C+'The+AP+Arms+Race+and+the+Reproduction+of+Educational+Inequality'%2C+in+Teachers+College+Record%2C+115%2C+050305+%282013%29.#!/search/document?ho=t&l=en&q=Klugman, Joshua, 'The AP Arms Race and the Reproduction of Educational Inequality', in Teachers College Record, 115, 050305 (2013).&id=FETCHMERGED-LOGICAL-e825-830cdb4124981a5fafb465179928ce354cae18b0af563ae0e97798b3092dc7372

Kolluri, S. (2018). Advanced placement: The dual challenge of equal access and effectiveness. *Review of Educational Research*, *88*(5), 671–711. https://doi.org/10.3102/0034654318787268

Krome, M. A. (2014). Knowledge transformation: A case for workforce diversity. *Journal of*

Diversity Management, 9(2), 103-110. doi:10.19030/jdm.v9i2.8975.

Lindsey, M.-P., Bensimon, E., & Mara, E. (2017). Taking equity-minded action to close equity gaps. *Peer Review Washington*, *19*(2), 5–8.

Long, K. (2018). At 25, Running Start is a success. Now it must attract students who need it the most. | *The Seattle Times.* https://www.seattletimes.com/education-lab/at-25-running-start-a-success-but-how-to-bring-in-more-minority-and-low-income-minority-students/

Louis, D. A., Thompson, K. V., Smith, P., Williams, H. M., Amani, & Watson, J. (2017). Afro-caribbean immigrant faculty experiences in the American academy: Voices of an invisible Black population. *The Urban Review, 49*(4), 668-691. doi:http://dx.doi.org.proxy.cityu.edu/10.1007/s11256-017-0414-0

Macdonald, R. H., Beane, R. J., Baer, E. M. D., Eddy, P. L., Emerson, N. R., Hodder, J., Iverson, E. R., & Ormand, C. J. (2019). Accelerating change: The power of faculty change agents to promote diversity and inclusive teaching practices. *Journal of Geoscience Education*, *67*, 330–339. https://doi.org/10.1080/10899995.2019.1624679

Malcom-Piqueux, L., & Bensimon, E. M. (2017). Taking equity-minded action to close equity gaps - ProQuest. *Peer Review*, *19*(2), 5–8. https://search-proquest-com.proxy.cityu.edu/docview/1930761007/fulltext/9C7162CDB6B945CEPQ/1?accountid=1230

Malcom, S. M., & Malcom-Piqueux, L. E. (2013). Critical mass revisited. *Educational Researcher*, *42*(3), 176–178. https://doi.org/10.3102/0013189X13486763

Malin, J., Bragg, D., & Hackmann, D. (2017). College and career readiness and the Every Student Succeeds Act. *Educational Administration Quarterly*, *53*(5), 809–838. https://doi.org/https://doi.org/10.1177/0013161X17714845

Marcucci, P. N., & Johnstone, D. B. (2007). Tuition fee policies in a comparative perspective: Theoretical and political rationales. In *Journal of Higher Education Policy and Management*. https://doi.org/10.1080/13600800600980015

Martínez Alemán, A. M., Pusser, B., & Bensimon, E. M. (2015). *Critical approaches to the study of higher education : a practical introduction* (1st ed.). Johns Hopkins University Press.

Marwick, J. D. (2004). Charting a path to success: The association between institutional placement policies and the academic success of Latino students. *Community College Journal of Research and Practice*, *28*(3), 263–280. https://doi.org/10.1080/10668920490256444

Mathis, M. B., & Roueche, J. E. (2019). Transformative leadership wanted. In *13 ideas that are transforming the community college world*.

McFarland, J., Hussar, B., Zhang, J., Wang, X., Wang, K., Hein, S., Diliberti, M., Cataldi, E. F., Mann, F. B., & Barmer, A. (2009). The condition of education 2009. *VOCED.* http://www.voced.edu.au/content/ngv10426

McLeod, J. (2011). Student voice and the politics of listening in higher education. *Critical Studies in Education*. https://doi.org/10.1080/17508487.2011.572830

McManigell Grijalva, R. A. (2018). Discovering our mothers' gardens: Cultivating diverse resources for the emergence of a new paradigm in higher education. *The Urban Review*, *50*(1), 177-192. doi:http://dx.doi.org.proxy.cityu.edu/10.1007/s11256-017-0435-8

Means, D. R., Bryant, I., Crutchfield, S., Jones, M., & Wade, R. (2016). Building bridges: College to career for underrepresented college students. *Journal of College Student Development, 57*(1), 95-98. doi:10.1353/csd.2016.0002.

Means, D. R., & Pyne, K. B. (2017). Finding my way: Perceptions of institutional support and belonging in low-income, first-generation, first-year college students. *Journal of College Student Development*, *58*(6), 907–924. https://doi.org/10.1353/csd.2017.0071

Miller, A. L., Williams, L. M., & Silberstein, S. M. (2019). Found my place: The importance of faculty relationships for seniors' sense of belonging. *Higher Education Research and Development*, *38*(3), 594–608. https://doi.org/10.1080/07294360.2018.1551333

Mullin, C. M., & Phillippe, K. (2013). A national economic case statement for community colleges. *Planning for Higher Education*, *41*(4), 91–101.

Museus, S. D., Ledesma, M. C., & Parker, T. L. (2015). Racism and racial equity in higher education. *ASHE Higher Education Report*. https://doi.org/10.1002/aehe.20067

Museus, S. D., Yi, V., & Saelua, N. (2017). The impact of culturally engaging campus environments on sense of belonging. *Review of Higher Education*, *40*(2), 187–215. https://doi.org/10.1353/rhe.2017.0001

Museus, S. D., Yi, V., & Saelua, N. (2018). How culturally engaging campus environments influence sense of belonging in college: An examination of differences between white students and students of color. *Journal of Diversity in Higher Education*, *11*(4), 467–483. https://doi.org/10.1037/dhe0000069

Nakaoka, S., & Ortiz, L. (2018). Examining racial microaggressions as a tool for transforming social work education: the case for critical race pedagogy. *Journal of Ethnic and Cultural Diversity in Social Work*, *27*(1), 72–85. https://doi.org/10.1080/15313204.2017.1417947

National Center for Education Statistics [NCES]. (2019). IPEDS 2018-19 data collection system. In *2018-19 Survey Materials: Glossary*.

Office of the Superintendent of Public Instruction. (2019). Washington State report card. *High*

School Graduate Outcomes Dashboard. http://reportcard.ospi.k12.wa.us/summary.aspx?groupLevel=District&schoolId=1&reportLevel=State&yrs=2016-17&year=2016-17

Oropeza, E., & Fujimoto, E. O. (2012). Hiring diverse faculty members in community colleges: A case study in ethical decision making. *Community College Review, 40*(3), 255–274. https://doi.org/10.1177/0091552112450069

Osei-Kofi, N., Shahjahan, R. A., & Patton, L. D. (2010). Centering social justice in the study of higher education: The challenges and possibilities for institutional change. *Equity and Excellence in Education*. https://doi.org/10.1080/10665684.2010.483639

Palacios, A., Wood, J. L., & Harris, F. I. (2015). Mexicano male students' engagement with faculty in the community college. In D. Mitchell, K. M. Soria, E. A. Daniele, & J. A. Gipson (Eds.), *Student Involvement and Academic Outcomes: Implications for Diverse Student Populations* (pp. 185–200). Peter Lang.

Park, J. J., Denson, N., & Johnson, M. (2014). *Examining a Financial Climate of Support: How Institutional-Level Financial Aid Relates to Teamwork, Leadership, and Critical Thinking*. *Journal of College Student Development* 55(November) (pp. 779-794). https://search-proquest-com.proxy.cityu.edu/docview/1628062137/fulltextPDF/9106EA384EB34745PQ/1?accountid=1230

Parsons, E. R. C., Bulls, D. L., Freeman, T. B., Butler, M. B., & Atwater, M. M. (2018). General experiences + race + racism = Work lives of Black faculty in postsecondary science education. *Cultural Studies of Science Education, 13*(2), 371-394. doi:http://dx.doi.org.proxy.cityu.edu/10.1007/s11422-016-9774-0

Peercy, C., & Svenson, N. (2016). The role of higher education in equitable human development. *International Review of Education*. https://doi.org/10.1007/s11159-016-9549-6

Pennamon, T. (2017). The emergence of the community college chief diversity officer. *Diverse.* www.diverseeducation.com

Perrakis, A., & Hagedorn, L. S. (2010). Latino/a student success in community colleges and Hispanic serving institution status. *Community College Journal of Research and Practice*, *34*(10), 797–813.

Pierszalowski, S., Vue, R., & Bouwma-Gearhart, J. (2018). Overcoming barriers in access to high-quality education after matriculation: Promoting strategies and tactics for engagement of underrepresented groups in undergraduate research via institutional diversity action plans. *Journal of STEM education, 19(1), 49-56.*

Pretlow, J., & Wathington, H. D. (2014). Expanding dual enrollment: Increasing postsecondary access for all? *Community College Review*, *42*(1), 41–54. https://doi.org/10.1177/0091552113509664

Ragoonaden, K., & Mueller, L. (2017). Culturally responsive pedagogy: Indigenizing curriculum. *Ragoonaden & L. Mueller Canadian Journal of Higher Education Revue Canadienne, 47*(2), 22–46. https://search-proquest-com.proxy.cityu.edu/docview/1947019629/fulltextPDF/688C2C35704F4DC4PQ/1?accountid=1230

Redford, J., Hoyer, K. M., American Institutes for Research (AIR), & National Center for Education Statistics (ED). (2017). *First-generation and continuing-generation college students: A comparison of high school and postsecondary experiences. stats in brief. NCES 2018-009*. National Center for Education Statistics.

Reid, K. W. (2013). Understanding the relationships among racial identity, self-efficacy, institutional integration and academic achievement of black males attending research universities. *The Journal of Negro Education*, *82*(1), 75–93.

Rios-Aguilar, C., & Deil-Amen, R. (2012). Beyond getting in and fitting in: An examination of social networks and professionally relevant social capital among Latina/o university students. *Journal of Hispanic Higher Education*, *11*(2), 179–196.

Roberts, K. D., Takahashi, K., & Park, H. J. (2018). The impact of Project Ho`oku`i participation on native Hawaiian high school students' perceptions of high school and college coursework. *The High School Journal*, *101*(3), 199–210. https://doi.org/10.1353/hsj.2018.0010

Rodriguez, S. L., Massey, K., & Sáenz, V. B. (2016). Engaging Latino men in community colleges: The role of student-faculty interactions. *Journal of Applied Research in the Community College*, *23*(2), 21–40. https://search-proquest-com.proxy.cityu.edu/docview/1951507888/fulltextPDF/EAD741373DA94618PQ/1?accountid=1230

Ryan, C. L., Bauman, K., & US Census Bureau. (2016). Educational attainment in the united states: 2015. population characteristics. current population reports. P20-578. ().US Census Bureau. Saenz, V. B., Ponjuan, L., Figueroa, J. L., & Serrata, W. (2016). Ensuring the success of latino males in higher education: A new national imperative Stylus Publishing.

Salkind, N. J. (2014). *Statistics for people who (think they) hate statistics* (5th ed.). SAGE Publications.

SBCTC Student Enrollment Dashboard. (2020). *SBCTC*. https://www.sbctc.edu/colleges-staff/research/data-public/strategic-enrollment-dashboard.aspx

SBCTC Faculty and Staff Dashboard. (2020). *SBCTC*. https://www.sbctc.edu/colleges-staff/research/data-public/ data-public/faculty-and-staff-data-dashboard.aspxSchudde, L. (2017). Nonpecuniary returns to postsecondary education: Examining early non-wage labor market outcomes among college-goers in the United States. *CAPSEE,* 36.

Shumaker, R., & Wood, J. L. (2016). Understanding first-generation community college students; An analysis of covariance examining use of, access to, and efficacy regarding institutionally offered services. *The Community College Enterprise*, *22*(2), 9–17.

Sims, C. M. (2018). The diversity intelligent servant leader: Developing leaders to meet the needs of a diverse workforce. *Advancing in Developing Human Resources, 20*(3), 313–330. https://doi.org/10.1177/1523422318778009

Smith, K. (2014). Access and diversity in the Running Start program: A comparison of Washington's Running Start program to other state level dual enrollment programs hosted on a college campus. *Washington Student Achievement Council.* www.wsac.wa.gov

Snyder, T., de Brey, C., & Dillow, S. (2018). Digest of education statistics, 2016.

Solanki, S., McPartlan, P., Xu, D., & Sato, B. K. (2019). Success with ease: Who benefits from a STEM learning community? *PLoS ONE*, *14*(3). https://doi.org/10.1371/journal.pone.0213827

Stephens, N. M., Hamedani, M. G., & Destin, M. (2014). Closing the social-class achievement gap: A difference-education intervention improves first-generation students' academic performance and all students' college transition. *Psychological Science*, *25*(4), 943-953. doi:10.1177/0956797613518349.

Stout, R., Archie, C., Cross, D., & Carman, C. A. (2018). The relationship between faculty diversity and graduation rates in higher education. *Intercultural Education*, *29*(3), 399–417.

https://doi.org/10.1080/14675986.2018.1437997

Strumbos, D., Linderman, D., & Carson C. Hicks, C. C. (2018). Postsecondary pathways out of poverty: City University of New York accelerated study in associate programs and the case for national policy. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, *4*(3), 100. https://doi.org/10.7758/rsf.2018.4.3.06

Sztainbok, V. (2016). Presumed incompetent: The intersections of race and class for women in academia. *Resources for Feminist Research,* 34(3), 157-161,164. Retrieved from http://proxy.cityu.edu/login?url=https://www-proquest-com.proxy.cityu.edu/docview/1891109261?accountid=1230

Tachine, A. R., Cabrera, N. L., & Yellow Bird, E. (2017). Home away from home: Native American students' sense of belonging during their first year in college. *The Journal of Higher Education, 88*(5), 785-807. doi:10.1080/00221546.2016.1257322.

Talent and prosperity for all: The strategic plan for unlocking Washington's workforce potential. Washington State Workforce Training and Education Coordinating Board. (2020).

Tarabini, A., & Jacovkis, J. (2012). The poverty reduction strategy papers: An analysis of a hegemonic link between education and poverty. *International Journal of Educational Development, 32*(4), 507–516.

Taylor, J. L. (2015). Accelerating pathways to college: The (in)equitable effects of community college dual credit. *Community College Review*. https://doi.org/10.1177/0091552115594880

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, *45*(1), 89–125.

Tinto, V. (1993). *Leaving college* (2nd ed.). The University of Chicago Press.

Tinto, V. (2006). Rearch and practice of student retention: What next? *College Student*

Retention, *8*(1), 1–19.

Tinto, V. (2017). Through the eyes of students. *Journal of College Student Retention: Research, Theory & Practice*, *19*(3), 254–269. https://doi.org/10.1177/1521025115621917

Tovar, E. (2015). The role of faculty, counselors, and support programs on Latino/a community college students' success and intent to persist. *Community College Review*, *43*(1), 46–71. http://search.proquest.com.ezproxy.apollolibrary.com/docview/1643111980/fulltextPDF?accountid=458

Trostel, P. (2015). *It's Not Just the Money: the Benefits of College Education to Individuals and Society*. Lumina Foundation.

Turner, C. S. V., González, J. C., & Wood, J. L. (2008). Faculty of color in academe: What 20 years of literature tells us. *Journal of Diversity in Higher Education*, *1*(3), 139–168. https://doi.org/10.1037/a0012837

Vargas, J., Hooker, S., & Gerwin, C. (2017). Blending high school and college can sharpen the focus of each. In *Phi Delta Kappan* (Vol. 99, Issue 3, pp. 13–18). SAGE Publications Inc. https://doi.org/10.1177/0031721717739587

Vishwanatha, J. K., Basha, R., Nair, M., & Jones, H. P. (2019). An institutional coordinated plan for effective partnership s to achieve health equity and biomedical workforce diversity. *Ethnicity and Disease*, *29*(1), 129–134. https://doi.org/10.18865/ed.29.S1.129

Vue, R., Haslerig, S. J., & Allen, W. R. (2017). Affirming race, diversity, and equity through Black and Latinx students' lived experiences. *American Educational Research Journal*, *54*(5), 868–903. https://doi.org/10.3102/0002831217708550

Wang, X., Chan, H., Phelps, L. A., & Washbon, J. I. (2015). Fuel for success. *Community College Review*, *43*(2), 165–190. https://doi.org/10.1177/0091552115569846

Washington State Board for Community and Technical Colleges Data Warehouse Data Dictionary. (2020).

Washington State Legislature. *Chapter 28B.50 RCW: Community and technical colleges*, (2020). https://apps.leg.wa.gov/RCW/default.aspx?cite=28B.50&full=true

What Works Clearinghouse, Institute of Education Sciences, & U.S. Department of Education. (2017). Transition to college intervention report: Dual enrollment programs. *WWC Intervention Report, February*, 1–46. https://ies.ed.gov/ncee/wwc/Docs/InterventionReports/wwc_dual_enrollment_022817.pdf

Who We Are | National Alliance of Concurrent Enrollment Partnerships. (2020). http://www.nacep.org/about-nacep/who-we-are/

Wilkins, A., & Burke, P. J. (2015). Widening participation in higher education: the role of professional and social class identities and commitments. *British Journal of Sociology of Education*. https://doi.org/10.1080/01425692.2013.829742

Wyner, J. (2014). *What excellent community colleges do*.Harvard Education Press.

Xu, D., Ran, F. X., Fink, J., Jenkins, D., & Dundar, A. (2018). Collaboratively clearing the path to a baccalaureate degree: Identifying effective 2-to 4-Year college transfer partnerships. *Community College Review*, *46*(3), 231–256. https://doi.org/10.1177/0091552118772649

Xu Jade, Y., & Webber, K. L. (2018). College student retention on a racially diverse campus: A theoretically guided reality check. *Journal of College Student Retention: Research, Theory & Practice*, *20*(1), 2–28. https://doi.org/10.1177/1521025116643325

Yosso, T.J. (2005). Whose culture has capital? *Race, Ethnicity and Education*, 8(1), pp. 69–91

Zambrana, R. E., Ray, R., Espino, M. M., Castro, C., Cohen, B. D., & Eliason, J. (2015). "'Don't leave us behind'": The importance of mentoring for underrepresented minority faculty.

American Educational Research Journal, *52*(1), 40–72.

https://doi.org/10.3102/0002831214563063