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Educational Equity Patterns in South Carolina Career and Technical Education

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Abstract

Fuller Hamilton et al. (2015) review provided a suggested model to improve Career and Technical Education (CTE) equity so that this study could be replicated systematically. National resources examining CTE educational equity components did not exist. The problem addressed in the replication study was the need to explore educational inequity within the South Carolina CTE Health Science career cluster. No CTE educational equity research exists in South Carolina, so the purpose of the replication study was to explore educational inequity within the South Carolina CTE Health Science career cluster. Cultural Replication Theory was the conceptual framework used for this replication study. Four research questions were formulated to examine the CTE enrollment patterns in South Carolina concerning four demographic characteristics, namely sex, race/ethnicity, region, and socioeconomic status. Students enrolled in CTE within South Carolina during the 2018-19 school year was the population selected. Secondary data was collected from a sample of 196,318 CTE enrollees and examined using descriptive analysis procedures. Overall results were not uniform. Inconsistent levels of inequity existed within race, ethnicity, and sex. In addition, inequity was present regarding regional effects and socioeconomic status. Future recommendations for research include conducting a qualitative or mixed-method study to further explain the enrollment patterns of CTE programs in South Carolina. Implications for practice to address the inequities in South Carolina include improving the underrepresentation of educators by sex and race/ethnicity, recommending equity audits, examination of access and availability of opportunities within CTE programs, and encouragement of all educators actively adopting and advancing an equity agenda from the original study.

Keywords: higher education, career, technical education, educational equity, equity in education

1. Introduction

1.1 Introduce the Problem

Career and Technical Education (CTE) is a teaching strategy focusing on building skills for secondary and postsecondary students in high-demand careers and occupations. Research shows the existence of inequities within the educational system that impacts the workforce preparation of underrepresented populations (Fuller Hamilton et al., 2015).

Fuller Hamilton et al. (2015) analyzed CTE enrollment patterns in Illinois by the racial/ethnic make-up and sexual characteristics of all students within the state. Concentrating primarily on Science, Technology, Engineering, and Mathematics (STEM), Fuller Hamilton et al. (2015) were able to show considerable differences in enrollment of male participants in the STEM career cluster in comparison to females and how these enrollment patterns correlated to other enrollment patterns within career clusters in the state and national level. Fuller Hamilton et al. (2015) also showed that all racial/ethnic groups in Illinois, except white students, were generally underrepresented in CTE programming. Consequently, Fuller Hamilton et al. (2015) suggested model to improve CTE equity so this study could be replicated systematically. Analysis of CTE enrollment only completed on the state level was one of the limitations presented. A suggestion shared by the original research team was to use additional information such as socioeconomic status (SES), accompanied by race/ethnicity and sexual characteristics, to understand better the issues of access that impact CTE enrollment (Fuller Hamilton et al., 2015). The results and suggestions from Fuller

Hamilton et al. (2015) provided the tools necessary to replicate the study systematically.

1.2 Explore the Importance of the Problem

The problem was the need to explore educational inequity within the South Carolina CTE Health Science career cluster. Education is a foundational pillar of generational success and is fundamental to workforce productivity (Garces & Mickey-Pabello, 2015). The decline in the United States (U.S.) overall academic achievement raises concerns about the cause of educational inequity within the nation (Geesa et al., 2019). Research supports race/ethnicity and SES being primarily connected to academic achievement gaps within the U.S. educational system (Bodovski et al., 2020). Limited support to populations due to their sexual characteristics and environmental factors have also contributed to the downward turn in the nation's overall educational performance (Covington et al., 2020; Kronsberg et al., 2017; Reardon et al., 2019; Shipman et al., 2019). Educational equity is a measure of fairness that provides every student access to the appropriate knowledge, resources, and skills. Access to these items allows the student to improve their quality of life. Unfortunately, South Carolina is deeply connected to the educational inequities that have shaped the nation and continue to experience vast disparities (*Abbeville v. South Carolina*, 2005,2014; *Briggs v. Elliott*, 1952; Allen, 2019; Temoney & Ullrich, 2018). As STEM transforms into a multifaceted field, the state must explore educational inequities to ensure its workforce is prepared for the rising in-demand occupations.

1.3 Describe Relevant Scholarship

1.3.1 United States Educational System

The U.S. educational system is below average compared to other countries regarding graduation rates and achievement in core areas (Geesa et al., 2019). However, not the sole explanation, race/ethnicity, and SES are factors considered to be the origin of subpar education performance within the nation (Bodovski et al., 2020; Reardon et al., 2019). Inequities within the United States educational system provided the rationale for variables to be suggested due to school segregation being a contributor to academic achievement gaps (Bradbury et al., 2019). Research supports desegregation's ability to improve educational achievement for identified underserved populations with no direct loss for affluent students (Gamoran & An, 2016; Hahn et al., 2018). Desegregation also increases racial interaction and understanding. Despite the benefits, resistance and the dismantling of desegregation programs through United States educational policies and practices have allowed the resurgence of segregation in school districts throughout the nation (Gamoran & An, 2016; Hahn et al., 2018; Taylor et al., 2019). Continual gaps between affluent and underserved school districts connect to fiscal and social disparities (Bischoff & Owens, 2019). These limitations influence the availability of resources to close achievement gaps for populations impacted by social and environmental factors. Positive results from targeted interventions support policies and practices, improving achievement gaps within marginalized groups (Baker et al., 2016). Closing the achievement gap provides all groups equal opportunity to obtain success.

1.3.2 Educational Equity

Educational equity focuses on fairness for all students, so individuals have the opportunity to increase their quality of life (Bowman & Culver, 2018). In a well-known ruling for public education, Brown v. Board of Education (1954) resulted in the abolishment of Plessy v. Ferguson (1896). This foundational case by law provided equal opportunity to all students in the United States. Briggs v. Elliott (1952), the first school funding lawsuit in South Carolina, is directly linked to Brown v. Board of Education (1954). Briggs v. Elliott (1952) played a significant role in the strategies used in Brown v. Board of Education (1954). Despite South Carolina's place in the nation's educational history, the federal law forced the state to desegregate its school (*Brown et al. v. School District 20, Charleston, South Carolina*, 1963). South Carolina was the last state to make the change. Ensuing lawsuits in South Carolina following Briggs v. Elliott (1952) and Brown v. Board of Education (1954) show educational inequities continued to exist throughout the state (*Brown et al. v. School District 20, Charleston, South Carolina*, 1963).

The 2020 coronavirus pandemic changed how the world operates. The United States must address inequities that historically have provided limited options for marginalized groups (Dougherty & Lombardi, 2016). Diversity shifts in the U.S. population, accompanied by COVID-19, exacerbated existing disparities (Blundell et al., 2020). Areas where variation exists in education, are internet access and the use of technology for educational purposes. These disparities have gained international attention. The equal distribution of technology is necessary to prepare future generations as the knowledge-based economy grows (Fuller Hamilton et al., 2015). The Internet and technology continue to increase their contributions to the economy and workforce development, offering alternatives to outdated and limited resources (Hohlfeld et al., 2017; Huffman, 2018). In addition, the management of technology through in-person and virtual settings has produced results that significantly affect user performance

in access at all educational levels worldwide (Hohlfeld et al., 2017).

1.3.3 Career and Technical Education

There is an association between childhood factors and labor market value. The association emphasizes the importance of federal education and workforce support to address equity gaps (Advance CTE, 2019). Unlike other developed countries, the United States lacks a national system that directly links education to the workforce. Career and Technical Education has filled the void as a non-system for the U.S. Department of Education. Career and Technical Education uses strategies devoted to rising workforce deficits (Shaw et al., 2019; Stone, 2017). The Strengthening Career and Technical Education for the 21st Century Act (Perkins V) is a bipartisan measure. Perkins V allows every student to enter a CTE program of study (POS) and earn a credential that will prepare them to be College and Career Ready (CCR) after graduation. The National Career Cluster Framework has developed 16 career clusters to help guide learners toward college and career success: Agriculture, Food and Natural Resources; Architecture and Construction: Arts, Audio/Video, Technology and, Communication; Business Management and Administration; Education and Training; Finance; Government and Public Administration; Health Sciences; Hospitality and Tourism; Human Services; Information Technology: Law, Public Safety, Correction, and Security; Manufacturing; Marketing; Science, Technology, Engineering and Mathematics; and Transportation, Distribution and Logistics (Advance CTE, 2019; Fuller Hamilton et al., 2015; Stone, 2017). South Carolina adopted and provided organized instruction and Perkins V funding to all identified career clusters.

Perkins V funding focuses on CTE program improvements, flexibility, and data accountability. Research supports CTE positively influencing student success in education and workforce development when provided resources (Loera et al., 2016; Mindham & Schultz, 2020; Thessin et al., 2017). High school students who participate in CTE coursework have a higher probability of graduating on time, higher scores in core classes, and a higher overall grade point average (GPA) (Castellano et al., 2017). Participation in high school CTE coursework leads to higher secondary education enrollment odds and wage-earning predictions (Xing et al., 2020). In addition, students within marginalized groups identified as special populations under Perkins V produce more significant results when enrolled in CTE courses (Dougherty & Lombardi, 2016).

1.3.4 Health Science Career Cluster

The Health Science career cluster falls within the STEM career cluster. Health Science is one of the largest growing fields in the U.S. However, workforce shortages exist due to demand (Harris et al., 2019). In South Carolina, chronic health issues and shortages of professionals in the health field plague the state. Similarities in other states in the southeastern region of the U.S. have forced CTE enrollment to become a focal point for the labor market deficits awaiting the field (Shaw et al., 2019). Addressing inequities within the health profession improves shortages experienced in the workforce and effectively focuses on barriers within the field (Covington et al., 2020; Kronsberg et al., 2017). In addition, the lack of racial/ethnic and sex representation within the health field has impacted the healthcare provided in the U.S. (Alsan et al., 2019). By improving the enrollment of underrepresented groups in the CTE Health Science career cluster, South Carolina can improve the quality of life and the labor market for its residents.

1.3.5 STEM Career Cluster

The STEM career cluster prepares students for all career opportunities under engineering and engineering technologies. High-technology jobs within the STEM field have become essential due to COVID-19 heightening societal disparities. Consistent racial/ethnic and sexual underrepresentation exists concerning STEM programming (Fuller Hamilton et al., 2015). Local Educational Agencies must meet goals in areas like academic proficiency and nontraditional program enrollment and develop a local improvement plan when they fail to do so (Perry, 2019). Performance indicators are associated with Perkins V funding to address the area of concern. Students who meet the academic requirements and are considered capable of pursuing the STEM pathway in secondary education do not necessarily enroll in courses classifying them as CCR (Ashford et al., 2016). Exposure to role models, sex-equitable teaching strategies, and welcoming environments promise to close the STEM enrollment gap for women and students influenced by social and environmental factors (Sophia & Zachmann, 2018).

1.4 Hypotheses and Their Correspondence to Research Design

The problem addressed was the need to explore educational inequity within the South Carolina CTE Health Science career cluster. The study was a systematic extension of Fuller Hamilton et al. (2015), completed in Illinois, looking at racial/ethnicity and gender equity patterns within STEM CTE coursework (Fuller Hamilton et al., 2015). Fuller Hamilton et al. (2015) comprised two research questions, while the replication study comprised four. The independent variables identified in Fuller Hamilton et al. (2015) were sex and race/ethnicity. Therefore, in addition

to region and socioeconomic status, both independent variables were used in the replication study.

Null Hypotheses

H_{01}. There is no significant relationship between sex and South Carolina students' CTE enrollment patterns in both Health Science and Non-Health Science Career Clusters.

H_{02}. There is no significant relationship between race/ethnicity and South Carolina students' CTE enrollment patterns in both Health Science and Non-Health Science Career Clusters.

H_{03}. There is no significant relationship between region and South Carolina students' CTE enrollment patterns in both Health Science and Non-Health Science Career Clusters.

H_{04}. There is no significant relationship between socioeconomic status and South Carolina students' CTE enrollment patterns in both Health Science and Non-Health Science Career Clusters.

The selection of a descriptive research design for the replication study was due to its usage in the original study by Fuller Hamilton et al. (2015). The descriptive research design accurately and systematically describes, observes, or validates aspects of groups collected through quantifiable information, like the relationship among variables, in their natural state (Siedlecki, 2020).

2. Method

Systematic extension replication was the strategy selected as the methodology for this quantitative research study. This strategy deliberately attempted to test the implications of Fuller Hamilton et al. (2015).

2.1 Research Questions

The research questions for this replication study were:

RQ1. What are South Carolina students' CTE enrollment patterns, by sex, in both Health Science and Non-Health Science career clusters?

RQ2. What are South Carolina students' CTE enrollment patterns, by race/ethnicity, in both Health Science and Non-Health Science career clusters?

RQ3. What are South Carolina students' CTE enrollment patterns, by region, in both Health Science and Non-Health Science career clusters?

RQ4. What are South Carolina students' CTE enrollment patterns, by socioeconomic status, in both Health Science and Non-Health Science career clusters?

2.2 Participant Population and Sample

South Carolina CTE secondary students shared similar characteristics, making it appropriate to analyze CTE enrollment patterns in the state. The sample size of South Carolina secondary students enrolled in CTE obtained and analyzed for this study comes from the 2018-19 school year; due to the impact of COVID-19 on the educational system during the 2019-20 school year. Lockdown measures in response to COVID-19 affected student enrollment and the ability of CTE students to receive work-based learning (WBL) experience within the 2019-20 school year. The 2018-19 school year selection was important to avoid introducing bias into the sample selected for research. As a result of the primary researcher being an employee of the South Carolina Department of Education, the OCTE and STS data was accessible for the secondary CTE enrollment for the state. The accessibility allowed the dataset to be considered population-level data (Fuller Hamilton et al., 2015). A total of 196,318 CTE enrollees was the size of the population accessible for this study. Enrollment numbers represented all 16 CTE career clusters, with 79 career pathways accounted for during the 2018-19 school year. The targeted population that the study intended to generalize was the Health Science career cluster. The target population's eligibility criteria based upon CTE enrollment within the health science career cluster are appropriate for the study's problem and purpose, providing further validation. The study's research questions distinguished between the accessible and targeted population through the requested data aggregation.

The dataset for this study was requested and obtained from the South Carolina Department of Education. Data request procedures were completed and submitted to the agency. The request provided essential documentation to the Data Request Review Board (DRRB). Following the approval, a member of the DRRB was contacted to discuss the process for sharing the requested data.

2.3 Research Design

The problem addressed in the replication study was the need to explore educational inequity within the South Carolina CTE Health Science career cluster. No CTE educational equity research exists in South Carolina;

therefore, the purpose of the replication study was the need to explore educational inequity within the South Carolina CTE Health Science career cluster. In replicating the Fuller Hamilton et al. (2015) study, the research undertook the same research design and kept it descriptive due to the sample selection. Therefore, the research questions for this study align with the descriptive research questions layout (Siedlecki, 2020). In addition, replication of cross-tabulation of information and calculation of enrollment percentages in CTE career clusters by sex and race/ethnicity by Fuller Hamilton et al. (2015), in addition to regions and socioeconomic status, was replicated in this study. Through this connection, the descriptive research design was justified. The justification was due to the same research design and descriptive research question layout used by Fuller Hamilton et al. (2015) replicated for the research questions. Existing conditions and underlying patterns with CTE enrollment within the South Carolina Health Science career cluster were also verified. Fuller Hamilton et al. (2015) granted permission to replicate this study through email.

2.3.1 Recruitment

The study systematically replicated the data collection procedures described in detail by Fuller Hamilton et al. (2015). The dataset was requested and obtained from the South Carolina Department of Education, containing a duplication of CTE PowerSchool data on enrollment of all LEA within the state for the 2018-19 school year. The data collection process began during the Spring 2021 semester. The Statistical Package for the Social Sciences (SPSS) was the software selected

3. Results

3.1 Analyses

South Carolina had the representation of all 16 CTE career clusters, with 79 career pathways accounted for during the 2018-19 school year. Five career pathways represent the Health Science career cluster. The aggregation of the identified demographic variables showed a connection to the POS within the Health Science career cluster. The national dataset represented in the study included the 2018-19 annual report submitted by states to the United States Department of Education, a federal mandate to receive Perkins funds (Perry, 2019).

Equally proportioned CTE enrollment within each career cluster based on sexual characteristics (50% male and 50% female) was assumed mathematically improbable (Fuller Hamilton et al., 2015; Xing et al., 2020). The degree of proportionality of enrollment using the 20% (40-60%) range reasoning by Fuller Hamilton et al. (2015) for female participation was used as the working definition for sex parity and replicated and considered necessary throughout the replication study. Fuller Hamilton et al. (2015) implied enrollment representation based on higher or lower participation than expectations upon the make-up of the total CTE public secondary education population. There was no defined definition of underrepresentation or overrepresentation in the original study, but this is justified based on reading the article. In addition, the replication study assessed the extent of parity regarding race/ethnicity, region, and socioeconomic status by comparing CTE participation rates to the distribution of total South Carolina public secondary education populations (Fuller Hamilton et al., 2015)

3.2 Analysis of the Findings

Research Question 1

The health science career cluster was dominated by female CTE enrollees with an incidence of 75.4% (n = 23,699), whereas men represented 24.6% (n = 7,734). However, no observation of inequity in non-Health Sciences, where males had an incidence of 57.9% (n = 95,495) while females had an incidence of 42.1%. These percentages fall within the 40-60% range, which is considered an acceptable level of gender parity. At the career cluster level, females dominated enrollment in several career clusters, namely Education and Training (88% female), Health Science (75.4% female), and Human Services/Family and Consumer Sciences (71.1% female). Males dominated a corresponding set of career clusters, namely Transportation, Distribution, and Logistics (94.4% male), Manufacturing (93% male), Architecture and Construction (92.8% male), and Science, Technology, Engineering, and Mathematics (STEM, 79.6% male). While there was a disparity in specific career clusters, this disparity cut in both directions, so the overall null hypothesis cannot be solidly rejected.

Research Question 2

Overall enrollment numbers showed no disparity along racial/ethnic lines relative to the overall population's distribution. However, there were apparent differences in racial enrollment numbers across Health Science and non-Health Science career clusters. The career clusters were comparable up to several tenths of a percent. For Health Science and non-Health Science career clusters, enrollment for Whites and Black or African American CTE enrollees were 53.8% and 53.6% White and 32.2% and 32.7% Black or African American, respectively.

These numbers mirror the overall racial distribution of CTE enrollment in South Carolina.

Research Question 3

The alternative hypothesis for this research question had the most prominent data support of the first three research questions, given inequity in health science and myriad under- and overrepresentations in specific career clusters. The overrepresentation of CTE enrollees from the Midlands and Trident regions in the Health Science career cluster relative to the overall sample was 17.9% vs. 14% and 19% vs. 13.3%, respectively. There was also an underrepresentation of CTE enrollees from the S.C. Public Charter District, comprising only 0.2% of the Health Sciences career cluster vs. 1.4% overall. There were no similar observations of inequities relative to the non-Health Science career cluster. Concerning specific career enrollments, there were under- and overrepresentations of CTE enrollees from each geographic area. Indeed, these were much more extensive than those by race/ethnicity and can be reviewed in detail in Chapter 4, Table 7.

Research Question 4

For the Health Science career cluster, this included 49.3% of the CTE enrollees and 56.5% of the CTE enrollees in the non-Health Science career cluster. These results demonstrate a high level of overall poverty for Health Science and a slightly higher level for non-Health Science. At the career cluster level, observation of high levels of poverty was in many career clusters, including Architecture and Construction (63.4%), Education and Training (64.5%), Hospitality and Tourism (64.7%), Human Services/Family and Consumer Sciences (63.5%), and Law, Public Safety, Corrections, and Security (62%). By contrast, only one career cluster had below-average poverty levels, the STEM career cluster (43.4%). Hence, there was strong support for the alternative hypothesis and significant enrollment inequity along socioeconomic lines.

4. Discussion

The research study offers valuable information to Doctor of Physical Therapy (DPT) students, educators in physical therapy education, and administrators of an accelerated DPT curriculum with blended learning. DPT students beginning an accelerated DPT program with blended learning should be educated on the complexity and cognitive demand of blending learning. The development of organizational skills and motivational factors to minimize cognitive overload is vital for success. Students who experience cognitive overload, experience academic performance challenges, or are identified as being at-risk for failure may benefit from academic tutoring services within the first year of the curriculum.

The implications of the present study primarily derive from its novel and unexpected results. The most pronounced was that there were no racial/ethnic inequities in overall or Health Science enrollment, both of which were expected. This result is specific to South Carolina, but it suggests, despite being a Southern state, one with incredibly close ties to the confederacy in the Civil War, that South Carolina is ahead of the national curve on racial equity in CTE. Given that the state has a much higher percentage of Black or African American residents than the national average, this result is also heartening because it suggests a high level of access. However, these results imply that South Carolina would benefit from efforts to ensure this high racial/ethnic outcome equity does not erode. For specific career clusters, none of the over- or underrepresentation along racial lines stuck out as troubling. Still, policymakers may find them valuable to review in determining if the current outcomes are where they should be.

For sex, the results of this study showed a reasonable level of parity for non-Health Science career clusters. However, Health Science remained female-dominated, suggesting the need to make better efforts to promote nursing and other health science career cluster focus areas to men and ensure these areas feel accessible. Overall, the STEM career cluster, a national preoccupation, remained male-dominated. However, while STEM was approaching the desired 75/25 minimum for CTE courses in a nontraditional focus area at 21% female, three other career clusters had over 90% male enrollment. Although hence, the results suggest that efforts to make STEM more equitable relative to sex should continue, these fields—namely, Transportation, Distribution, and Logistics (94.4% male), Manufacturing (93% male), Architecture and Construction (92.8% male)—may be of even more significant concern to equalize going forward.

For geography, it is not easy to draw any practical conclusions. Instead, the most pointed result regarding the regional differences is that they exist. However, literature has primarily only addressed regions in terms of urban/rural divides. Therefore, from a theoretical and academic standpoint, an important implication of these results is the need to address a more expanded and fully developed conceptualization of regional differences when studying CTE enrollment and, perhaps, education issues at large.

Finally, regarding socioeconomic status, the results have mostly positive implications. The high enrollment rate by

CTE enrollees below the poverty line suggests that South Carolina's CTE programming may be effective in helping bridge the educational gap that hamstrings the perspectives of many impoverished people, especially in the South. The STEM career cluster stands out as one area where people from low-SES backgrounds remain underrepresented, indicating that further efforts are needed to equalize STEM enrollment in this regard. The overrepresentation of low-SES students in specific fields offers no immediate problem. However, it may prove valuable for educational leaders and policymakers to study this list of overrepresentations and determine why those specific career clusters attract people from low-SES backgrounds and whether it has any policy implications to consider moving forward. Overall, CTE appears to be a promising way of addressing inequity relative to SES in South Carolina. Still, effort should continue to maintain and improve equity, especially in the Health Science and STEM career clusters.

4.1 Limitations

The most prominent limitation was the conduction of the present study using secondary data. This data was retrieved from CTE enrollment records. Using such records was eminently practical, given the substantive challenges associated with collecting new, large-scale data. Nonetheless, using data confined the study to the specific data points and variables available in the dataset. In addition, the present study utilized a replication design, following Hamilton et al.'s (2015) study design and overall methodology. This choice afforded the study a template for collecting valuable data and validly addressing the research questions. However, it also meant that the study was limited to the specific issues addressed previously by Hamilton et al.'s (2015) research. This tradeoff mainly benefited but constrained the current study to a set of parameters that could not be changed within the study framework.

Another significant limitation is in the descriptive design. The descriptive design selected was appropriate given that the research questions specifically described the study population and the state of critical variables. However, this design also prevented the study from reaching more profound conclusions. The final limitation mentioned was that a fuller analysis of certain aspects of the data, like the meaning of the geographic results, was beyond the scope of the analysis. This limitation also makes it difficult to draw meaningful insight into the most valid interpretation of the results. Instead, this is the province of researchers to explore in future studies.

4.2 Conclusion

When the manipulation of independent variables does not occur, the studies are considered non-experimental or observational. Other examples of non-experimental research designs were under consideration. One, in particular, was the correlational cause-probing research design. The correlational cause-probing research design was initially considered an alternative for this quantitative study because researchers use the design to compare a relationship between two variables and cannot manipulate the independent variables. However, the design would require multiple rounds of data collection or a comparison between a case and a control group. In addition, inferring causal relationships between variables could become risky. The ultimate decision was made to select the descriptive research design due to the systematic extension replication being the strategy selected as the methodology for this quantitative research study. The replication study deliberately attempted to test the implications of Fuller Hamilton et al. (2015). The descriptive research design aligned with the study's problem, purpose, and research questions.

Fuller Hamilton et al. (2015) justified enrollment representation based on higher or lower participation than expectations upon the make-up of the total CTE public secondary education population. There was no defined definition of underrepresentation or overrepresentation in the original study, but this is justified based on reading the article. At the specific career cluster level, there was some over- and underrepresentation. These included both categories for Asians, Black or African Americans, Whites, Native Hawaiian or other Pacific Islander, Hispanic/Latino, and mixed ethnicity CTE enrollees. Perhaps the most notable result was the overrepresentation of White CTE enrollees in Agriculture, Food and Natural Resources, and Manufacturing, where almost all other races/ethnicities were underrepresented. Representation equity was difficult to determine given the overall enrollment equity but the vast array of under- and overrepresentations in career clusters.

Though they were not wholly positive, the results painted a more compelling picture of South Carolina's CTE enrollment equity than anticipated. These results suggest that CTE in South Carolina may be having success achieving equity in many areas, though if so, the project is far from complete. Therefore, more research to monitor the issue going forward is imperative, primarily to determine what degree of the promising results identified in this study are maintained and built upon—or lost through attrition.

Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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