



## Differences in Ethnic/Racial Diversity of Texas Community College First-Time in College Full-Time Students Over Time: A Multiyear, Statewide Analysis

Juan Carlos Lebron <sup>a, \*</sup>, John R. Slate <sup>b</sup>, Frederick C. Lunenburg <sup>b</sup>

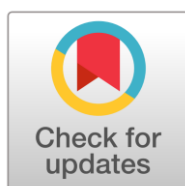
<sup>a</sup> LSC-Montgomery Education Department, Lone Star College-Montgomery, 5000 Research Forest Drive, The Woodlands, Texas 77381, United States.

<sup>b</sup> Department of Educational Leadership, Sam Houston State University, Huntsville, TX 77340, United States.

\*Corresponding Author: [profslate@aol.com](mailto:profslate@aol.com) DOI: <https://doi.org/10.34256/ajir2015>

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**Abstract:** In this multiyear, statewide empirical investigation, the degree to which ethnic/racial diversity of first-time in college full-time Texas community college students changed from the 1999-2000 through the 2014-2015 academic years was determined. Over this time period, the percentage of Hispanic first-time in college full-time Texas community college students showed a statistically significant increase, whereas the percentage of White first-time in college full-time students statistically significantly decreased. No changes were noted with respect to either Black or Asian first-time in college full-time college students during this time period. Although some improvement was noted in the ethnic-racial diversity of Texas first-time in college full-time students, more work remains. Implications for policy and recommendations for research were provided.

**Keywords:** Community Colleges, Full-time Students, First-time in College, Ethnicity/Race, Texas, Asian, White, Hispanic, Black.

### Introduction

Over the past 100 years, community colleges have delivered academic programs through open admission policies, low cost tuition, vocational, and specialized workforce training programs that serve as an essential academic pipeline for many students to access postsecondary education (Cohen, Brawer, & Kisker, 2014; Ma & Baum, 2015). The American community college has evolved as a vital economic resource in the commitment of the United States to educate, serve, and provide workforce-training opportunities to all of its citizens (Bailey, Jaggars, & Jenkins,

2015). Dating back to the early years of the 20th century, the mission of American community colleges has played a critical role in shaping the educational landscape of American higher education (Cohen et al., 2014; Cooper, 2010). As open-door institutions, community colleges provide access to higher education to first-time students, low-income families, and adults seeking further workforce training and certification (Ma & Baum, 2015).

These open-door institutions, which are expected to serve all individuals regardless of

ethnicity, age, gender, or academic proficiency level, serve as flagships to anyone who has the desire to better his or her economic situation and upward mobility. Cohen et al. (2014) stated that multiple factors such as general population growth, increases in part-time enrollment, financial aid expansion, and non-traditional and minority student enrollment increases are all influential in contributing to increases in community college enrollment. American community colleges have been categorized as essential pipelines that provide access and higher education to a diverse student population at an affordable cost (Evans et al., 2016). Jones (2013) noted that as society continues to expand, more institutions of higher education are being “called to prepare students to live and work in an increasingly multicultural society” (p. 249). As open enrollment institutions, community colleges deliver three primary core missions, which include: (a) providing university transfer opportunities, (b) providing workforce training specialization, and (c) providing continuing education opportunities (Bahr, 2013).

According to the American Association of Community Colleges (2014), 41% of all first-time students are enrolled in community colleges. Full-time enrollment in higher education increased 45% between the 2000 and 2010 academic years (National Center for Education Statistics, 2015). Full-time enrollment is expected to increase by 14% between the 2014 and the 2025 academic years. At 2-year institutions, enrollment increased nationally by 29% between the 2000 and the 2014 academic years. The National Center for Education Statistics (2016) reported that Hispanics surpassed Blacks as the country's largest racial/ethnic group other than Whites. The population of Hispanics continues to grow at a faster rate than the overall population, representing 15% of the total U.S. population, with Texas having the highest percentages of the Hispanic population (ranging from 36% to 45%). The population

of Hispanic first-time students showed an increase in enrollment between 1996 and 2001 (Fry, 2005). According to the American Association of Community Colleges (2015a), Hispanics, Blacks, American Indian, and students of two or more races who enrolled at community colleges were more likely to be first-time students than White students.

The College Board (2010) highlighted that “many minority groups, including traditionally disadvantaged groups, are participating in college in record numbers. However, the fastest growing populations in the United States are those minority groups with the lowest levels of educational attainment” (College Board, 2010, p. 18). Lee and Ransom (2011) reported that by 2008, only 42% of 25 to 34 year olds in the U.S. earned an associate degree or higher. Only 30% of Black students and 20% of Hispanic students ages 25 to 34 had attained an associate degree or higher. Data from the same study indicated that 49% of White students and 71% of Asian students had earned an associate degree or higher.

The traditional open door policy of community colleges has allowed students from diverse ethnic/racial backgrounds to access post-secondary education, technical education, and workforce training. Horn and Skomsvold (2011) established that 81% of community college students enroll in a postsecondary institution indicated they wanted to earn a baccalaureate degree or higher. If students begin their undergraduate education at a community college; however, their chances of completing their undergraduate degrees are much lower than are the chances of students who begin their undergraduate education at a 4-year institution (Monaghan & Attewell, 2015). As open admissions institutions, community colleges provide multiple entrance points in which large percentages of students begin their collegiate journey requiring remedial and developmental education.

The Texas Higher Education Coordinating Board (2015a) gathered data to develop a 60x30 strategic plan that included the recent demographic shifts and population growth rates taking place within the 25 to 34 year old Hispanic and African-American student populations. Under the 60x30 Texas Plan (2015), educational leaders are focusing on improving the completion rate of students from racial/ethnic groups that traditionally have not earned an associate degree or workforce certificate. Higher education leaders in Texas have documented that not enough progress has occurred to prepare for and recognize the continued demographic shifts taking place to ensure that postsecondary completion rates in Texas are representative of the ethnic/racial diversity within the state. (Texas Higher Education Coordinating Board, 2015). Increasing the completion rate and degree attainment of both Black and Hispanic student populations have become an essential priority for higher education administrators across Texas. Higher education administrators have established clearly defined goals to help increase the completion of workforce certificates, associate degrees, and transfer opportunities for students from all racial/ethnic backgrounds to ensure that Texas can be globally competitive by the year 2030 (Texas Higher Education Coordinating Board, 2015).

In an analysis of the national completion rates of traditional college students (i.e., 18-24 years of age) who were exclusively enrolled full-time in 2006, Baum, Ma, and Payea (2013) documented that 78% earned a degree within six years. Of those traditionally aged full-time students, 11% completed their degrees at a different institution other than the one in which they originally enrolled. Adelman (1999, 2006) conceptualized the term "academic momentum," which he used to measure the undergraduate experiences of first-year community college students based on the number of credits earned, academic

performance, and the influences of grade point average on student success and completion rates (p. 80). Full-time enrollment involves registering for a minimum course load of 12 credit hours per academic term.

In a recent report by the Community College Research Center, Klempin (2014) contended that federal financial aid guidelines influence national policies requiring students to be enrolled full-time per academic term to receive their maximum financial aid. Klempin (2014) stated, "high enrollment intensity (full-time rather than part-time) and high enrollment continuity (enrollment in consecutive semesters without breaks) are strongly correlated with college student success at both two and four-year institutions" (p. 1). In research studies on high enrollment intensity, including full-time students who enroll in consecutive terms, evidence exists that full-time enrollment influences on-time graduation and transfer rates of students in higher education (Adelman, 1999, 2004, 2005, 2006; Attewell, Heil, & Reisel, 2012; Berkner, He, & Cataldi, 2002; Carroll, 1989; Crostra, 2014; Klempin, 2014; McCormick, 1999).

An issue not addressed in depth in the research literature was the mixed student enrollment patterns present within community college institutions. Crostra (2014) reported that a gap in the research literature exists on community college student enrollment patterns and the degree to which their enrollment patterns influence postsecondary outcomes. Particularly not well examined in the research literature were current studies in which the focus was placed exclusively on first-time-in-college community college enrollment patterns (Crostra, 2014). Crostra (2014) identified the varied enrollment patterns of first-time-in-college students at five community colleges. The researchers documented two positive relationships of on-time degree completion and increased transfer rates. In an analysis of full-time enrollment intensity and transfer

rates, Park (2015) established that a positive completion relationship exists between full-time enrollment and transfer into four-year institutions among community college first-time in college students. Full-time community college students who attempted 15 credit hours were able to expedite their graduation and were more likely to complete a baccalaureate degree after transferring into a university (Monaghan & Attewell, 2015).

According to Kuh's (2001) theory of student engagement, students with a higher number of credit hours established stronger collegial relationships with faculty/staff members, along with higher levels of connectivity with campus support resources that promote higher completion, persistence, and student success rates. Community college students who spend larger amounts of time on campus can establish essential collegial relationships with faculty, staff, and student support personnel. Park (2015) examined the benefit of increased academic enrollment intensity with first semester community college students and established that full-time students could engage, successfully complete, and transfer to 4-year institutions at a higher rate than students who were not enrolled full-time. These findings were consistent with Adelman (1999, 2004, 2006) and Doyle (2009), giving further support that individuals who enroll as full-time students and maintain full-time enrollment will likely increase college success and graduation rates.

In Texas, the completion rate of students has decreased below the national average, with only 22% of first-time students attending community colleges graduating in three years (Texas Completes, 2012). The State of Texas is ranked 45th nationally in the number of associate degrees attained (Texas Completes, 2012). With respect to enrollment patterns, Texas community college full-time students are 2.5 times more likely to earn an associate degree, 2 times more likely to transfer to a 4-year institution, and 1.4 times

more likely to earn a bachelor's degree than students who are enrolled part-time (Texas Completes, 2012).

## Statement of the Problem

Bragg and Durham (2012) emphasized a strong need to understand student diversity at the community college level. By ascertaining student ethnic/racial diversity, researchers and educational leaders could understand the degree to which existing policies promote and support diverse student access to community colleges. American community colleges serve as a vital pipeline to individuals in our communities who are seeking access to postsecondary education, including first-generation college students, students from low-income families, as well as adults seeking workforce training to gain additional certificate specialization and new credentials (Ma & Baum, 2016). Horn and Nevill (2006) reported that White and Asian students were more likely to attend full-time for a full year than were Black and Hispanic students. Ma and Baum (2016) determined that the national enrollment at 2-year colleges increased by 2.2 million students over a 10-year period. In addition, Ma and Baum (2016) reported that in the fall 2014, "42% of all students and 25% of all full-time students were enrolled in community colleges" (p. 1). Moreover, the American Association of Community Colleges (2017) indicated that 2-year college enrollment declined from 6.3 million students in 2013 to 5.7 million students, showing a 9.6% drop over the three years. Bragg and Durham (2012) noted:

demand and concern for higher education are increasing. Unease about performance is growing among all levels of higher education institutions, specifically community colleges, which are being encouraged to maintain open access while producing many more

students who complete and receive a credential. (p. 106)

Bragg and Durham (2012) documented that community colleges have traditionally maintained open-door admission policies to support our historically underserved students. In addition, Bragg and Durham (2012) indicated that if community colleges did not exist, many ethnically diverse, lower-socioeconomic, first-time-in-college students would not have access to a postsecondary education.

The State of Texas has led the nation in population growth between 2005 and 2013 attracting diverse residents via domestic and international migration (White et al., 2016). As the State of Texas continues to undergo demographic shifts, new academic and economic challenges will continue to govern the call for higher education administrators to provide intentional student support measures and programming that target at-risk student populations (Texas Higher Education Coordinating Board, 2015). These intentional support measures include identification of effective use of funding resources to implement educational support services, implementation of data analytic measures that allow for the development of effective student support services that aid to improve access, completion, graduation, transfer, and overall success rates of our first time-in-college student populations (Texas Higher Education Coordinating Board, 2015).

The Texas Higher Education Coordinating Board (2015) gathered data to develop a 60x30 TX strategic plan, documenting both the demographic shifts and population growth occurring within multiple segments of student populations. Increasing the completion rate and degree attainment of all students (including the growing Hispanic student population) needs to remain an essential priority for higher education administrators across the State of Texas. Higher education administrators continue to

search for clearly defined strategies that aim to improve completion rates of workforce certificates, associate degrees, and improvement of transfer opportunities for students from all ethnic backgrounds in larger numbers to help Texas become globally competitive by the year 2030 and beyond (Texas Higher Education Coordinating Board, 2015).

### Purpose of the Study

The purpose of this study was to examine the degree to which changes had occurred in the ethnic/racial diversity of Texas community college first-time, full-time in college students. Specifically, the ethnic/racial diversity changes (i.e., Asian, White, Hispanic, and Black) of first-time in college students who were enrolled full-time in Texas community colleges in the 1999-2000 academic year through the 2014-2015 academic year were analyzed. Inferential statistical analyses were conducted to ascertain the extent to which the enrollment percentages of Asian, White, Hispanic, and Black Texas community college first-time, full-time in college students had changed between the 1999-2000 and the 2014-2015 academic years.

### Significance of the Study

Given the national emphasis and commitment on improving student success in community colleges, strategic and data-driven collective efforts are needed to increase on-time degree completion, persistence, graduation, and transfer rates of all students. As ethnic diversity, demographic and enrollment patterns continue to shift, community college administrators designed and implemented statewide and national strategic student success initiatives to address the complex challenges facing community colleges in Texas and the nation. According to

the Texas Association of Community Colleges (2016), the last decade of student success initiatives allowed institutions to establish critical goals, such as: (a) increasing awareness of the challenges and commitment to college completion; (b) expanding the use of data to assess and monitor student success and institutional performance; and (c) developing evidence based effective educational practice that involves putting that knowledge into practice and demonstrating encouraging results.

Park (2015) reported that recent developments in federal and state policy have launched an interest to promote, mandate, and encourage community college students to enroll full-time in an effort to accelerate their successful completion and graduation with a bachelor's degree. A national movement has begun with intentional efforts to help students enroll in a maximum credit load that will eventually help them to navigate through their community college education faster, more efficiently, and with higher rates of persistence and engagement in their studies and participation with on campus events and activities. Adelman (2006) highlighted that students who were not enrolled full-time and who enrolled in less than 20 credits during their first year of community college were at a substantial disadvantage of completing and graduating from a community college. Park (2015) documented that few full-time enrollment research studies existed regarding the influence of enrollment patterns on community college students. Through this research study, valuable information was obtained on the relationship of full-time enrollment of Texas first-time community college students. The information gathered in this study will provide higher education leaders and policymakers with additional data regarding the extent in which statewide student success intervention efforts have influenced the enrollment of first-time in college full-time community college students in Texas.

## Research Questions

The research questions addressed in this investigation were: (a) What is the ethnic/racial diversity (i.e., Asian, White, Hispanic, and Black) of Texas community college first-time in college full-time students in the 1999-2000 academic year?; (b) What is the difference in the enrollment percentages of Texas Asian community college first-time in college full-time students between the 1999-2000 and the 2007-2008 academic years, between the 2007-2008 and the 2014-2015 academic years, and between the 1999-2000 and the 2014-2015 academic years?; (c) What is the difference in the enrollment percentages of Texas White community college first-time in college full-time students between the 1999-2000 and the 2007-2008 academic years, between the 2007-2008 and the 2014-2015 academic years, and between the 1999-2000 and the 2014-2015 academic years?; (d) What is the difference in the enrollment percentages of Texas Hispanic community college first-time in college full-time students between the 1999-2000 and the 2007-2008 academic years, between the 2007-2008 and the 2014-2015 academic years, and between the 1999-2000 and the 2014-2015 academic years?; (e) What is the difference in the enrollment percentages of Texas Black community college first-time in college full-time students between the 1999-2000 and the 2007-2008 academic years, between the 2007-2008 and the 2014-2015 academic years, and between the 1999-2000 and the 2014-2015 academic years?; and (f) What trends are present in the ethnic/racial diversity of first-time in college full-time students enrolled in Texas community college first-time full-time students in the 1999-2000 through the 2014-2015 academic years? The first research question was repeated for the 1999-2000 through the 2014-2015 academic years whereas the rest of the research questions, with the exception of the trends question, were addressed for three academic year

comparisons. The trend question involved all 16 academic years of data.

## Method

### Research Design

A non-experimental causal-comparative research design (Creswell, 2009; Johnson & Christensen, 2012) was used for this study. In non-experimental causal-comparative research, no manipulation of the independent variable occurs (Johnson & Christensen, 2012). In this empirical multiyear study, the independent and dependent variables had already occurred. The independent variable analyzed in this research article was the specific academic year in which students were enrolled in a Texas community college. In this investigation, data were obtained for the 1999-2000 through the 2014-2015 academic years. The dependent variables present in this investigation were the numbers of students by their ethnicity/race who were enrolled in a Texas community college during this time period. These numbers were converted into percentages of the total student enrollment who were Asian, White, Hispanic, or Black. Students whose data were analyzed were only community college students in Texas who were first-time college students who were enrolled full-time in the aforementioned academic years.

The primary focus of this empirical investigation was to examine the degree to which changes occurred in the ethnic/racial diversity (i.e., Asian, White, Hispanic, and Black) of first time in college full-time students at Texas community colleges. Following statistical analyses of the 1999-2000 through the 2014-2015 academic years, the degree to which trends were present in the ethnic/racial of first time in college full-time students enrolled in Texas community colleges were determined.

## Participants and Instrumentation

Archival data on all Texas community colleges were obtained for the 1999-2000 through the 2014-2015 academic years from the Texas Higher Education Coordinating Board Interactive Accountability System. Seventy-two community colleges were labeled within the Texas Higher Education Coordinating Board dataset, including nine community college districts. All institutions are required by the Texas Higher Education Coordinating Board to report persistence, completion, enrollment, student ethnicity/race, and graduation rates annually. The Texas Higher Education Coordinating Board aggregates the data and provides the information publicly through the Texas Higher Education Coordinating Board Interactive Accountability System. The instrument used to gather data for this research study was the Texas Higher Education Coordinating Board Interactive Accountability database. The database contained every Texas community college institution, along with descriptive statistical data for all Texas institutions of higher education. Fifteen years of data were available for analysis.

## Results

Regarding the first research question, the ethnic/racial diversity of Texas community college first-time in college students who were enrolled full-time was calculated for the 1999-2000 through the 2014-2015 academic years. Student enrollment numbers downloaded from the Texas Higher Education Coordinating Board Interactive Accountability System were converted to percentages prior to calculating the descriptive statistics for the first research question. Readers are directed to Tables 1 through 6 for the average fall enrollment numbers and total fall enrollment numbers by student ethnicity/race throughout the academic years of data that were analyzed in this investigation.

**Table 1** Descriptive Statistics for First-Time in College Full-Time Student Enrollment at Texas Community Colleges in the 1999-2000, 2000-2001, and 2001-2002 Academic Years

<b>Academic Year and Ethnicity/Race</b>	<b><i>M</i></b>	<b><i>SD</i></b>	<b>Sum</b>
1999-2000			
Asian	18.86	37.54	1,358
White	349.94	353.75	25,196
Hispanic	178.13	258.19	12,825
Black	69.03	82.92	4,970
2000-2001			
Asian	19.83	34.48	1,428
White	385.08	450.50	27,726
Hispanic	202.21	304.11	14,559
Black	77.19	89.02	5,558
2001-2002			
Asian	20.61	36.34	1,484
White	367.61	329.44	26,468
Hispanic	223.97	352.20	16,126
Black	77.18	81.07	5,557

**Table 2** Descriptive Statistics for First-Time in College Full-Time Student Enrollment at Texas Community Colleges in the 2002-2003, 2003-2004, and 2004-2005 Academic Years

<b>Academic Year and Ethnicity/Race</b>	<b><i>M</i></b>	<b><i>SD</i></b>	<b>Sum</b>
2002-2003			
Asian	19.28	30.54	1,388
White	396.36	437.88	28,538
Hispanic	263.81	563.06	18,994
Black	86.11	98.05	6,200
2003-2004			
Asian	19.96	32.41	1,437
White	363.04	354.48	26,139
Hispanic	248.64	384.66	17,902
Black	85.93	92.40	6,187
2004-2005			
Asian	20.31	37.96	1,462
White	347.46	349.28	25,017
Hispanic	239.25	357.24	17,226



Black	85.63	90.32	6,165
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**Table 3** Descriptive Statistics for First-Time in College Full-Time Student Enrollment at Texas Community Colleges in the 2005-2006, 2006-2007, and 2007-2008 Academic Years

Academic Year and Ethnicity/Race	<i>M</i>	<i>SD</i>	Sum
2005-2006			
Asian	21.82	36.55	1,571
White	348.49	356.07	25,091
Hispanic	243.25	341.79	17,514
Black	83.92	89.51	6,042
2006-2007			
Asian	23.85	42.49	1,717
White	354.06	367.29	25,492
Hispanic	250.53	361.73	18,038
Black	87.96	95.86	6,333
2007-2008			
Asian	22.44	37.70	1,616
White	342.79	340.66	24,681
Hispanic	271.50	371.58	19,548
Black	91.46	110.64	6,585

**Table 4** Descriptive Statistics for First-Time in College Full-Time Student Enrollment at Texas Community Colleges in the 2008-2009, 2009-2010, and 2010-2011 Academic Years

Academic Year and Ethnicity/Race	<i>M</i>	<i>SD</i>	Sum
2008-2009			
Asian	25.42	41.04	1,830
White	365.94	346.13	26,348
Hispanic	323.79	464.46	23,313
Black	107.56	125.55	7,744
2009-2010			
Asian	25.14	45.95	1,810
White	333.39	283.31	24,004
Hispanic	339.08	430.98	24,414
Black	114.71	139.53	8,259
2010-2011			
Asian	26.53	53.16	1,910
White	288.47	22,325	
Hispanic	479.07	25,167	

Black 138.79 8,669

**Table 5** Descriptive Statistics for First-Time in College Full-Time Student Enrollment at Texas Community Colleges in the 2011-2012, 2012-2013, and 2013-2014 Academic Years

Academic Year and Ethnicity/Race	<i>M</i>	<i>SD</i>	Sum
2011-2012			
Asian	25.40	49.22	1,854
White	308.67	418.31	22,533
Hispanic	324.25	423.80	23,670
Black	113.49	159.27	8,285
2012-2013			
Asian	24.82	47.24	1,812
White	297.52	442.96	21,719
Hispanic	318.34	402.71	23,239
Black	110.38	151.87	8,058
2013-2014			
Asian	25.45	47.00	1,828
White	271.89	406.04	19,848
Hispanic	305.37	394.03	22,292
Black	97.18	135.79	7,094

**Table 6** Descriptive Statistics for First-Time in College Full-Time Student Enrollment at Texas Community Colleges in the 2014-2015 Academic Year

Academic Year and Ethnicity/Race	<i>M</i>	<i>SD</i>	Sum
2014-2015			
Asian	24.46	50.13	1,810
White	242.53	334.13	17,947
Hispanic	288.34	370.71	21,337
Black	89.19	136.37	6,600

In the 1999-2000 academic year, 56% of Texas community college first-time fulltime students were White, followed by 25% Hispanic, 12% Black, and 2% Asian. Similar percentages were present in the 2000-2001 academic year with the highest percentage of first-time full-time students being White, 55%, followed by Hispanic, 26%, Black, 12%, and Asian, 2%. These percentages remained stable

through the 2004-2005 academic year. For the 2006-2007 academic year, the percentage of White student enrollment decreased to 49%, and Hispanic student enrollment increased to 31% of total student enrollment at Texas community colleges. Black students, 12%, and Asian students, 3%, constituted the two smallest ethnic/racial groups. Over the next several years, the percentage of White

students steadily decreased and the percentage of Hispanic students steadily increased. The percentages of Black and Asian students remained constant. In the 2010-2011 academic year, the percentage of White students decreased to 39%, and the percentage of Hispanic students increased to 37% of total student enrollment, followed by Black students at 15% and Asian students at 3%. Of note is the 2012-2013 academic year because it was the first year in which the percentage of Hispanic students was higher than the percentage of White students, 39%

and 37% respectively. In the most recent academic year, 2014-2015, the percentage of Hispanic students was 41% of the total student enrollment, followed by White students at 36%. Black student and Asian student enrollment remained consistently low at 12% and 3%, respectively. Readers are directed to Tables 7 through 12 for the descriptive statistics regarding the ethnic/racial diversity of first-time in college full-time Texas community college students from the 1999-2000 through the 2014-2015 academic years.

**Table 7** Descriptive Statistics for First-Time in College Full-Time Student Enrollment Percentages at Texas Community Colleges in the 1999-2000, 2000-2001, and 2001-2002 Academic Years

Academic Year and Ethnicity/Race	M%	SD%
1999-2000		
Asian	2.31	2.84
White	56.33	21.85
Hispanic	25.39	23.89
Black	12.16	10.25
2000-2001		
Asian	2.24	2.87
White	55.18	21.70
Hispanic	26.03	23.73
Black	12.48	10.46
2001-2002		
Asian	2.39	3.01
White	54.68	21.33
Hispanic	26.93	23.52
Black	11.89	9.42

**Table 8** Descriptive Statistics for First-Time in College Full-Time Student Enrollment at Texas Community Colleges in the 2002-2003, 2003-2004, and 2004-2005 Academic Years

Academic Year and Ethnicity/Race	M%	SD%
2002-2003		
Asian	2.24	2.76
White	53.99	21.33
Hispanic	28.07	23.57

Black	12.38	09.96
2003-2004		
Asian	2.35	2.75
White	52.27	21.39
Hispanic	28.74	23.28
Black	12.97	10.68
2004-2005		
Asian	2.31	3.10
White	51.10	21.29
Hispanic	29.58	22.99
Black	13.34	10.97

**Table 9** Descriptive Statistics for First-Time in College Full-Time Student Enrollment at Texas Community Colleges in the 2005-2006, 2006-2007, and 2007-2008 Academic Years

<b>Academic Year and Ethnicity/Race</b>	<b>M%</b>	<b>SD%</b>
2005-2006		
Asian	2.71	3.39
White	49.83	20.97
Hispanic	30.98	22.53
Black	12.48	10.03
2006-2007		
Asian	2.69	3.12
White	49.58	21.21
Hispanic	30.86	22.50
Black	13	10.85
2007-2008		
Asian	2.63	3.07
White	47.10	20.86
Hispanic	32.97	22.23
Black	13.25	10.54

**Table 10** Descriptive Statistics for First-Time in College Full-Time Student Enrollment at Texas Community Colleges in the 2008-2009, 2009-2010, and 2010-2011 Academic Years

<b>Academic Year and Ethnicity/Race</b>	<b>M%</b>	<b>SD%</b>
2008-2009		
Asian	2.71	2.82
White	45.42	19.98
Hispanic	34.54	22.18

Black	13.93	11.13
2009-2010		
Asian	2.44	3.02
White	41.40	18.79
Hispanic	35.15	20.89
Black	13.61	10.99
2010-2011		
Asian	2.61	3.36
White	39.02	19.04
Hispanic	37.25	20.99
Black	14.76	11.95

**Table 11** Descriptive Statistics for First-Time in College Full-Time Student Enrollment at Texas Community Colleges in the 2011-2012, 2012-2013, and 2013-2014 Academic Years

Academic Year and Ethnicity/Race	M%	SD%
2011-2012		
Asian	2.53	3.12
White	39.13	19.09
Hispanic	38.03	22
Black	14.31	11.58
2012-2013		
Asian	2.68	3.40
White	37.24	18.71
Hispanic	39.38	21.79
Black	14.54	11.17
2013-2014		
Asian	2.97	3.44
White	36.29	18.10
Hispanic	40.62	21.19
Black	13.56	9.78

**Table 12** Descriptive Statistics for First-Time in College Full-Time Student Enrollment at Texas Community Colleges in the 2014-2015 Academic Year

Academic Year and Ethnicity/Race	M%	SD%
2014-2015		
Asian	2.94	3.53
White	35.69	18.17
Hispanic	41.22	21.88

Prior to conducting inferential statistics to answer research questions two through five, checks were conducted to determine the extent to which these data were normally distributed (Onwuegbuzie & Daniel, 2002). Although some of the data were not normally distributed, a decision was made to use parametric dependent sample *t*-tests to answer the research questions. As noted in each research question, three yearly comparisons were made: (a) between the 1999-2000 and the 2007-2008 academic years; (b) between the 2007-2008 and the 2014-2015 academic years; and (c) between the 1999-2000 and the 2014-2015 academic years.

With respect to Asian students who were first-time in college full-time students in Texas community colleges, the parametric dependent samples *t*-test did not reveal a statistically significant difference in their percentage,  $t(68) = -1.29, p = .20$ , between the 1999-2000 and the 2007-2008 academic years (see Tables 7 and 9 for the statistics for these two academic years). The percentage of Asian first-time in college full-time students was comparable in both of these academic years. The parametric dependent samples *t*-test did not reveal a statistically significant difference in the percentage of Asian first-time in college full-time students,  $t(70) = -0.49, p = .63$ , between the 2007-2008 and the 2014-2015 academic years. The percentage of Asian first-time in college full-time students in the 1999-2000 academic year was 2.31%, 2.63% in the 2007-2008 academic year, and 2.9%, in the 2014-2015 academic year. Again, similar percentages of Asian first-time in college full-time students were present in these academic years. Finally for the 1999-2000 and the 2014-2015 comparison, a statistically significant difference was not yielded in the percentage of Asian first-time in college full-time students,  $t(68) = -1.26, p = .21$ . Presented

in Tables 7 and 12 are the descriptive statistics for Asian student percentages in these two academic years.

Concerning the percentage of White students who were first-time in college full-time students in Texas community colleges, the parametric dependent samples *t*-test revealed a statistically significant difference in their percentage,  $t(68) = 9.49, p < .001$ , between the 1999-2000 and the 2007-2008 academic years. This difference represented a large effect size (Cohen's *d*) of 1.14 (Cohen, 1988). In the 2007-2008 academic year, White students represented 47% of first-time in college full-time students which was markedly lower than the 56% of White first-time in college full-time students enrolled in Texas community colleges in the 1999-2000 academic year. Readers are directed to Tables 7 and 9 for the descriptive statistics for White student percentages in these two academic years. For the 2007-2008 and the 2014-2015 academic year comparison, a statistically significant difference was yielded in the percentage of White first-time in college full-time students who were enrolled at Texas community colleges,  $t(70) = 11.56, p < .001$ . This difference represented a large effect size (Cohen's *d*) of 1.37 (Cohen, 1988). The percentage of White first-time in college full-time students enrolled in Texas community colleges decreased from 47% in the 2007-2008 academic year to 37% in the 2014-2015 academic year. Tables 7 and 9 contain the descriptive statistics for the White student percentages in these two academic years. With respect to the 1999-2000 and the 2014-2015 academic year comparison, a statistically significant difference was revealed in the percentage of White first-time in college full-time students,  $t(68) = 14.88, p < .001$ . This difference represented a large effect size (Cohen's *d*) of 1.79 (Cohen, 1988). The percentage of White first-time in college full-

time students enrolled in Texas community colleges steadily decreased from 56% in the 1999-2000 academic year to 36% in the 2014-2015 academic year. Delineated in Tables 7 and 9 are the descriptive statistics for the White student percentages in these two academic years.

Concerning the enrollment of Hispanic first-time in college full-time students who were enrolled in Texas community colleges, a parametric dependent samples *t*-test revealed a statistically significant difference in their percentage,  $t(68) = -10.63, p < .001$ , between the 1999-2000 and the 2007-2008 academic years. This difference represented a large effect size (Cohen's *d*) of 1.27 (Cohen, 1988). The percentage of Hispanic first-time in college full-time students enrolled in Texas community colleges increased from 25% in the 1999-2000 academic year to 33% in the 2007-2008 academic year. Readers are directed to Table 7 and 9 for the descriptive statistics for Hispanic student percentages in these two academic years. Regarding the 2007-2008 and the 2014-2015 academic year comparison, a statistically significant difference was revealed in the percentage of Hispanic first-time in college full-time students enrolled in Texas community colleges,  $t(70) = -9.47, p < .001$ . This difference represented a large effect size (Cohen's *d*) of 1.12 (Cohen, 1988). The percentage of Hispanic first-time in college full-time students enrolled in Texas community colleges increased from 33% in the 2007-2008 academic year to 42% in the 2014-2015 academic year. Tables 7 and 9 contain the descriptive statistics for the Hispanic student percentages in these two academic years. Finally, for the 1999-2000 and the 2014-2015 academic year comparison, a statistically significant difference was revealed in the percentage of Hispanic first-time in college full-time students enrolled in Texas community colleges,  $t(68) = -12.67, p < .001$ . This difference represented a large effect size (Cohen's *d*) of 1.52 (Cohen, 1988). The percentage of Hispanic first-time in college

full-time students enrolled in Texas community colleges increased steadily from 25% in the 1999-2000 academic year to 41% in the 2014-2015 academic year. Revealed in Tables 7 and 9 are the descriptive statistics for Hispanic student percentages in these two academic years

With respect to the enrollment of Black first-time in college full-time students enrolled in Texas community colleges, a parametric dependent samples *t*-test did not reveal a statistically significant difference in their percentage,  $t(68) = -1.77, p = .08$ , between the 1999-2000 and the 2007-2008 academic years. Similar percentages of Black first-time in college full-time students enrolled in Texas community colleges were present, 12% and 13%, respectively, in the 1999-2000 and the 2007-2008 academic years. Tables 7 and 9 contain the descriptive statistics for Black student percentages in these two academic years. Concerning the 2007-2008 and 2014-2015 academic year comparison, a statistically significant difference was not yielded in the percentage of Black first-time in college full-time students enrolled in Texas community colleges,  $t(70) = 1.29, p = .20$ . Again, similar percentages of Black first-time in college full-time students enrolled in Texas community colleges were present in both of these academic years with 13% in 2007-2008 and 12% in 2014-2015. Presented in Tables 7 and 9 are the descriptive statistics for the Black student percentages in these two academic years. Finally for the 1999-2000 and the 2014-2015 comparison, a statistically significant difference was not yielded in the percentage of Black first-time in college full-time students enrolled in Texas community colleges,  $t(68) = -0.38, p = .70$ . The percentages of Black first-time in college full-time students remained constant over the academic years of data that were analyzed herein. Revealed in Tables 7 and Table 12 are the descriptive statistics for this analysis.

## Discussion

Presented in this investigation was the degree to which ethnic/racial diversity of first-time in college full-time Texas community college students changed from the 1999-2000 through the 2014-2015 academic years. Fifteen years of archival data from the Texas Higher Education Coordinating Board Interactive Accountability System were obtained and analyzed from all Texas community colleges.

For the 16 years of data that were analyzed, statistically significant differences were present with respect to Hispanic first-time in college students who were enrolled full-time in Texas community colleges between the 1999-2000 and 2007-2008 academic years. The percentage of Texas community college students who were first-time in college students who were enrolled in Texas community colleges on a full-time basis and who were Hispanic steadily increased over this time period. Concomitant with this increase in the percentage of Hispanic students was a statistically significant decrease in the percentage rate of White students who were first-time in college and who were enrolled in Texas community colleges on a full-time basis. No changes were noted with respect to the percentage of Texas community college students who were first-time in college students who were enrolled in Texas community colleges on a full-time basis for either Black or Asian students during this time period.

## Connections with Existing Literature

According to the American Association of Community Colleges (2014), 41% of all first-time students enrolled in community colleges. By examining demographic shifts and student ethnic/racial diversity enrollment patterns, educational leaders can evaluate student success initiatives and policies that are needed to assist and support students while increasing

and enhancing access to higher education and achieving graduation (Bragg & Durham, 2012). With an estimated 27.9 million citizens in Texas, White et al. (2016) reported that Texas is experiencing a major demographic shift as a result of domestic migration and immigration influencing the state. Texas 2-year public colleges have grown more rapidly than universities since the mid-1960s and these 2-year institutions are expected to experience larger student enrollments than universities, despite the declines in student enrollment from 2011 to 2014 (Texas Higher Education Coordinating Board, 2017).

Bragg and Durham (2012) emphasized a strong need for educational leaders to understand student diversity at the community college level. "If not for community colleges, the overall higher education system would enroll fewer racial and ethnic minorities and fewer low-income, immigrant, and first-time-in-college students, which explains why access has been the quintessential tenet of community colleges for decades" (Bragg & Durham, 2012, p. 108). A gap in the research literature exists on community college student enrollment patterns and the degree to which their enrollment patterns influence postsecondary outcomes (Crostra, 2014). Particularly not well examined in the research literature are current studies that focus exclusively on first-time-in-college community college enrollment patterns (Crostra, 2014).

## Implication for Policy and Practice

In this multiyear, statewide investigation, the degree to which changes occurred in the ethnic/racial diversity of first-time in college full-time students enrolled in Texas community colleges was addressed. Based upon the results of this statewide, multiyear investigation, several implications are present for policy and practice. First, researchers and educational leaders are



encouraged to monitor the demographic shifts that continue to take place within first-year student populations at community colleges. Such efforts should be directed toward designing intrusive student support initiatives and expanding recruitment efforts based on demographic shifts. Second, as demographic shifts continue to influence the State of Texas, community college leaders should expand funding opportunities that strategically focus on increasing Hispanic student success, as well as increasing Black student success, in higher education. Third, researchers and educational leaders should evaluate the differences in enrollment percentages over time of multiple ethnic/diverse groups of students to help design different student support initiatives that target the unique needs of first-year students. Fourth, the results of this multi-year investigation can provide researchers and educational leaders with important data and metrics to help improve access, success, and equity within and among community college student populations. Fifth, researchers are encouraged to continue the partnerships between the Texas Higher Education Coordinating Board and the Texas Legislature to design and implement student success initiatives that target goal attainment of specific student populations. Bailey, Jaggars, and Jenkins (2015) emphasized the need for continued reform within our community college institutions to help students clarify their academic objectives and to implement intrusive student success programs to increase graduation rates with minimal financial costs.

### Recommendations for Future Research

In this multiyear, statewide investigation, the degree to which changes occurred in the ethnic/racial diversity of first-time in college full-time students enrolled in Texas community colleges was addressed. Based upon the results of this investigation, several recommendations for further research

are apparent. First, researchers are encouraged to replicate this investigation in other states to ascertain whether the results of this multiyear analysis are generalizable outside of Texas. Second, researchers are encouraged to replicate this investigation at Texas 4-year institutions. The extent to which results of this investigation based on community colleges would be generalizable to 4-year institutions is not known. A third recommendation is for researchers to examine the ethnic/racial diversity of community college students who are first-time in college students who are enrolled part-time. The results of this multiyear analysis were based on first-time in college students who were enrolled in Texas community colleges on a full-time basis. Given that the majority of community college students are enrolled on a part-time basis, the degree to which findings delineated herein would be transferable to community college students who are enrolled in Texas community colleges on a part-time basis is not known.

Fourth, researchers are encouraged to extend the previous recommendation to other states, as well as to 4-year institutions. Finally, researchers are encouraged to examine the ethnic/racial diversity of all students who are enrolled in community colleges, regardless of their enrollment status. These analyses should be conducted over multiple academic years to ensure that any trends, if present, could be determined.

### Conclusion

The purpose of this research study was to determine the extent to which the ethnic/racial diversity of first-time in college full-time Texas community college students had changed from the 1999-2000 through the 2014-2015 academic years. Over this time period, the percentage of Hispanic first-time in college full-time Texas community college students statistically significantly increased,

whereas the percentage of White first-time in college full-time students enrolled in Texas community colleges statistically significantly decreased. No changes were noted with respect to either Black or Asian first-time in college full-time college students enrolled in Texas community colleges during this time period.

Though some improvement was noted in the ethnic/racial diversity of Texas first-time in college full-time students, more work remains. Educational leaders at community colleges need to continue their efforts to improve the national graduation rates of community college students. Bailey et al. (2015) accentuated that if community colleges are to improve student graduation rates, a full commitment to overhaul and institutionally restructure traditional approaches to student success must take place with targeted reforms in an effort to assist students more efficiently.

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