

ADVANCED DEGREE ATTAINMENT AS A FUNCTION OF RACE/ETHNICITY IN  
TEXAS POSTSECONDARY INSTITUTIONS OVER TIME: A MULTIYEAR,  
STATEWIDE INVESTIGATION

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Doctor of Education

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by

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## **DEDICATION**

This dissertation is, first and foremost, dedicated to my mother and to my late father, both of whom instilled in me at a very young age the value of education and hard work. This dissertation is also dedicated to my dear friends and colleagues, Dr. Kandi Tayebi, Dr. Lydia Fox, and Dr. Judy Johnson. Their unwavering encouragement, support, and guidance were instrumental throughout my journey to achieve a doctoral education.

## ABSTRACT

Hamrick, Tama S., *Advanced degree attainment as a function of race/ethnicity in Texas postsecondary institutions over time: A multiyear, statewide investigation*. Doctor of Education (Higher Educational Leadership), December 2020, Sam Houston State University, Huntsville, Texas.

### **Purpose**

The overall purpose of this journal-ready dissertation was to ascertain the extent to which progress occurred during the State of Texas' *Closing the Gaps by 2015* and the *60x30TX* education initiatives. In particular, the purpose of this dissertation was to determine the degree to which changes were present in the numbers and percentages of advanced degrees awarded by public, 4-year postsecondary institutions in the State of Texas as a function of race/ethnicity. More specifically, the numbers and percentages of master's, doctoral, and professional degrees awarded to White, Hispanic, and Black students from the 1999-2000 academic year through the 2018-2019 academic year were examined to determine whether statistically significant changes had occurred in the number of master's, doctoral, and professional degrees awarded to the aforementioned racial/ethnic groups. Additionally, the purpose of this dissertation was to ascertain the extent to which trends were present in advanced degree attainment by White, Hispanic, and Black students from Texas public, 4-year postsecondary institutions from the 1999-2000 through the 2018-2019 academic years.

### **Method**

The research design used herein was causal comparative in nature. Archival data were obtained from the Texas Higher Education Coordinating Board's Interactive Accountability website. The study involved downloading information on academic

years, race/ethnicity, and the numbers and percentages of master's degrees, doctoral degrees, and professional degrees awarded.

### **Findings**

White students were awarded the highest numbers and percentages of master's degrees, doctoral degrees, and professional degrees from 1999-2000 through 2018-2019. Regarding master's degrees, White students were awarded 20% fewer master's degrees in 2018-2019 than in 1999-2000. The percentages of Master's degrees awarded to Hispanic and Black students increased by 11.30% and 7.58%, respectively. In reference to doctoral degree attainment between 1999-2000 and 2018-2019, White students were awarded the highest numbers and percentages, followed by Hispanic students, and then Black students. Between 1999-2000 and 2018-2019, the percentage of doctoral degrees awarded to Hispanic students and to Black students increased by 11.07% and 9.39%, respectively. Concerning professional degrees, White students were awarded the highest numbers and percentages from 1999-2000 through 2018-2019. Hispanic students were awarded 13.65% more professional degrees in 2018-2019 than in 1999-2000.

*KEYWORDS:* Advanced degree, Master's degree, Doctoral degree, Doctorate,

Professional degree, Underrepresented, Race/Ethnicity

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## **CHAPTER I**

### **INTRODUCTION**

In the 21st century, higher education has been generally viewed as an engine of economic growth. Of particular importance is the procurement of a highly educated workforce comprised of individuals who have earned an advanced degree and who have attained the knowledge, abilities, and skill sets required to address and to solve myriad complex problems that are of paramount concern, both at the national and global level. Indeed, in the United States, a workforce comprised of individuals who have a graduate education is thought to be particularly essential to the economic health of the nation and to the ability of the nation to remain competitive in the global economy (Altbach, Gumport, & Berdahl, 2011; American Council on Education, 2019; Ebersole, 2010; Franklin & Slate, 2012; Wendler et al., 2010; Wendler et al., 2012).

In addition to the overall importance of a graduate education, is the essentiality of promoting and sustaining diversity, both in venues of graduate education as well as in the workforce (American Council on Education, 2019; Koc, 2013). One of the most remarkable changes in society over the past two decades has been the ever-increasing diversity of the nation's population (United States Census Bureau, 2015). This increase in diversity has been reflected in student populations of postsecondary institutions nationwide—an occurrence that has had, and continues to have, implications for higher education (American Council on Education, 2019; Wendler et al., 2010; Wendler et al., 2012). Although student populations in higher education institutions have become progressively diverse, disparity remains in the enrollment and completion rates of underrepresented students in advanced degree programs (American Council on

Education, 2019). To address this disparity, colleges and universities across the United States have created and implemented diversity initiatives to close the gaps in the educational attainment of underrepresented students and their White counterparts.

Of particular interest in this journal-ready dissertation are two diversity initiatives that were created and implemented by the Texas Higher Education Coordinating Board and the attainment of advanced degrees as a function of race/ethnicity from the 1999-2000 through the 2018-2019 academic year. The first initiative, *Closing the Gaps by 2015* was implemented in 2000 and was designed to close the education gaps between Texas and other states as well as to close the gaps in participation, success, excellence, and research (Texas Higher Education Data, 2015). The second initiative, the *60x30TX* plan, was put into practice in 2015, immediately following the conclusion of the *Closing the Gaps by 2015* initiative. The primary goal presented in the *60x30TX* plan is that 60% of students between the ages of 25 to 34 in the State of Texas will have earned a certificate or degree by the year 2030 (Texas Higher Education Coordinating Board, 2015). Additional goals focus on marketable skills and a ratio of first-year earned wages and student debt (Texas Higher Education Coordinating Board, 2015).

### **Review of the Literature for Diversity in Master's Degree Attainment**

The world has entered a globalized age characterized, in part, by a steady increase in the worldwide population. As of January 1, 2019 the United States was rated as the third most populated country in the world, preceded by China and India, respectively (United States Census Bureau, 2019). The population of the United States has continued to grow from a population of 281,421,906 in 2000 to 328,231,337 in 2019 (United States

Census Bureau, 2019). This trend is projected to continue, with the population reaching 420 million by the year 2060 (United States Census Bureau, 2015).

Not surprisingly, the growth of the population in the United States has been accompanied by an increase in racial and ethnic diversity. Prior to reporting the percentages of this increase, it is important to note that, as a result of increased sensitivities regarding race, the United States Census Bureau (2001) changed the categories on race and Hispanic origin to be considered as two different concepts. Consequently, previous distinctions between ethnic/racial groups have since become somewhat indistinct, making it difficult to disaggregate and to report accurately race data. With these considerations present, according to the United States Census in 2000, 75.1% of the population were White with the remaining 24.9% of the population belonging to a racial/ethnic group other than White, including Black or African American, Hispanic (of any race), Asian, American Indian or Alaska Native, and Native Hawaiian or Other Pacific Islander (United States Census Bureau, 2000a). By 2010, the estimated number of individuals belonging to a racial/ethnic group other than White, including Hispanic origin of any race, had increased to 34.8% (United States Census Bureau, 2010). This trend continued through 2018, with 41.8% of the population belonging to a race or Hispanic origin of any race other than White (United States Census Bureau, 2018a).

With respect to the state of interest in this article, from 2000 to 2018 an increase occurred in the population in the State of Texas, which is now the second most populated state in the nation (United States Census Bureau, 2018b). In 2000, the population in Texas was 20,851,820 (United States Census Bureau, 2000b), which increased to 25,146,114 in 2010, and to an estimated 28,701,845 in 2018 (United States Census

Bureau, 2018c). Indeed, during 2018, Texas had a population increase of 379,128 individuals—a larger increase than in any other state (United States Census Bureau, 2018b).

Similar to the changes in the ethnic/racial diversity at the national level, the population growth in Texas has also been accompanied by an increase in racial/ethnic diversity. In 2000, 71% of the population was White, while the remaining 29% were of another race, including Black or African American, Hispanic (of any race), Asian, American Indian or Alaska Native, and Native Hawaiian or Other Pacific Islander. Between 2000 and 2010, the population in Texas increased by 4,283,741 (Texas Health and Human Services, 2018). Of this number, 70.4% were White, and 29.6% were of another race, including Black or African-American, Hispanic (of any race), Asian, American Indian or Alaska Native, and Native Hawaiian or Other Pacific Islander. By 2018, 53.9% of the Texas population was reported as belonging to a race other than White (Texas Health and Human Services, 2018).

The increases in the ethnic/racial diversity of the population of the United States and specifically in Texas have been reflected in student populations at postsecondary institutions. At the national level, in Fall 2018, approximately 24.1% of the graduate student population was reported as belonging to an underrepresented group (American Council on Education, 2019). Although this percentage represented a healthy increase in underrepresented student enrollment, students from this population remain considerably underrepresented in graduate degree programs (American Council on Education, 2019).

The enrollment of students who are historically underrepresented in colleges and universities across the United States is increasing, with the number of first-generation



students comprising 30% of the college student population and the number of students who are both first-generation and economically disadvantaged comprising 24% of the college student population (National Science Foundation, 2018). Although the percentage of underrepresented students entering postsecondary institutions is increasing, these students still remain underrepresented in higher education (American Council on Education, 2019). Underrepresented students encounter many challenges traversing their way through the college experience, an experience that is often complicated by the fact that they are more likely to be first-generation, economically disadvantaged, and a racial/ethnic minority (Fox, Hamrick, & Tayebi, 2017; Terenzini, Springer, Yaeger, & Nora, 1996).

Confronted with difficulties in funding a graduate degree and often limited family support, underrepresented students are much less likely than their counterparts to pursue a graduate education (Baum & Steele, 2017; Carter, 2006). First-generation students, in particular, experience difficulty transitioning to postsecondary institutions and are less likely than their counterparts to enroll in a graduate degree program (Engle, 2007). Moreover, White students who have higher family incomes and whose parents have earned a college degree have distinct advantages for earning a graduate degree (Baum & Steele, 2017), whereas underrepresented students have dissimilar advantages and, when compared to their advantaged counterparts, are less likely to enroll in graduate programs and to graduate with an advanced degree (Baum & Steele, 2017). Yet, for those underrepresented students who do decide to pursue an advanced degree, they are less likely than are White, continuing-generation students with higher family incomes to complete the graduate school application process. Underrepresented students are often

times unacquainted with investigating potential graduate programs, the application process itself, preparing for entrance exams, and with writing personal statements and creating curriculum vitas. Moreover, if underrepresented students successfully manage the challenges of applying to and being accepted into a graduate program, they are often at-risk of persisting in their graduate education because they have difficulty understanding and reconciling the differences between academic expectations at the undergraduate level and the higher academic expectations at the graduate level (Weidman, Twale, & Stein, 2003).

As readers may be aware, a paramount challenge facing the United States is to improve accessibility to a postsecondary education, both at the undergraduate and graduate level. Failing to close the gaps in higher education attainment across underrepresented groups would expose the nation's inability to attain and sustain the level of educational achievement needed for success in the job market and global competitiveness (Perna, 2015). In the past, earning a bachelor's degree was deemed to be sufficient in terms of employment. However, this level of education may no longer be adequate. As noted by Wendler et al. (2010),

A graduate degree will become the new bachelor's degree, the minimal education credential that high-skills employers require. If that is so, then the United States is in peril of losing its competitive edge, with long-term consequences for our economy, our quality of life, and our global standing. (preface)

Indeed, indications are present that obtaining an advanced degree is becoming increasingly important in terms of employability, earning potential, economic health, and global competitiveness (Koc, 2013; Wendler et al., 2010; Wendler et al., 2012). These

indications have led some individuals to contend that a master's degree will be fundamental to success in the labor market (Koc, 2013). Between 2011 and 2012, the dominant degree sought after by employers changed from a bachelor's degree to an advanced degree (Koc, 2013). Specifically, the percentage of those individuals recruited with a master's degree increased from 15% in 2011 to approximately 21% in 2012 (Koc, 2013). When considering earning potential, individuals with a master's degree typically earned more than individuals with a bachelor's degree (Koc, 2013; Wendler et al., 2010; Wendler et al., 2012). In 2017, for workers age 25 or older, the median weekly earnings of individuals with a bachelor's degree was approximately \$1,173, whereas the weekly earnings of individuals with a master's degree was approximately \$1,401 (Torpey, 2018).

The value of a master's degree does not end with employability and potential earnings but extends to the health and stability of the economy and to remaining competitive in a global marketplace. A graduate education cultivates critical thinking and decision-making abilities, as well as other skills, that are necessary for finding solutions to some of the United States' most urgent problems, which include national security, health care, energy, and environmental concerns.

In recognition that fewer Texans were pursuing a postsecondary education as well as the negative effects of this decline on the state's economy, the Texas Higher Education Coordinating Board developed a plan known as *Closing the Gaps by 2015* (Texas Higher Education Data, 2015). This plan was implemented in October 2000 and was intended to close "educational gaps within the State of Texas and between Texas and other states" (Texas Higher Education Data, 2015, para.1). *Closing the Gaps by 2015* was also adopted to increase excellence in higher education programs and to increase research

endeavors in postsecondary institutions across the State of Texas. Specifically, four goals were included in the plan: (a) Close the gaps in participation, (b) Close the gaps in success, (c) Close the gaps in excellence, and (d) Close the gaps in research. Following the *Closing the Gaps by 2015* initiative, the Texas Higher Education Coordinating Board implemented a new plan—the *60x30TX* plan. The overall goal of this initiative is to ensure that 60% of the students between the ages of 25 to 34 in the State of Texas earn a certificate or degree by the year 2030 (Texas Higher Education Coordinating Board, 2015).

The success of the statewide education and diversity initiative, *Closing the Gaps by 2015*, has been examined, thus far, by only one researcher (Franklin, 2013). Noting the importance of a graduate education, changing demographic trends, and the necessity of diversity in advanced degree programs, Franklin (2013) investigated the number of master's, doctoral, and professional degrees awarded to White, Black, and Hispanic students in the State of Texas from 2000 to 2011. For the purpose of this article, only data regarding master's degrees are addressed. Data were obtained from the Texas Higher Education Coordinating Board Interactive Accountability System—an online publicly available database. Franklin (2013) documented that 282,821 master's degrees were awarded by public, 4-year postsecondary institutions in the State of Texas from the 2000 academic year through the 2011 academic year. In 2000, 10,556 master's degrees were awarded to White students—a number that increased to 14,802 by 2011. Hispanic students obtained 2,058 master's degrees in 2000 and 4,906 in 2011.

Regarding the percentage of master's degrees conferred in 2000, 59.26% were awarded to students who were White. This percentage steadily declined over the 12-year

period to 46.88% in 2011. Hispanic students earned 11.55% of master's degrees conferred in 2000—a percentage that steadily increased to 15.54% in 2011. Similar to the increase in master's degrees awarded to Hispanic students, master's degrees awarded to Black students increased from 6.64% in 2000 to 9.00% in 2011. In sum, White students were awarded the highest percentage of master's degrees during the 12-year time frame. In each individual year, the percentage of master's degrees earned by the Hispanic and Black populations steadily increased.

### **Review of the Literature for Diversity in Doctoral Degree Attainment**

From a historical perspective, a graduate education in the United States has traditionally played a substantial role in producing an educated workforce, promoting successful employment, establishing financial stability, furthering and sustaining a healthy economy, and remaining competitive in the global marketplace (Adhikari, 2017; Altbach, Gumport & Berdahl; Franklin, 2013; Franklin & Slate, 2012; Holley & Gardner, 2012; Koc, 2013; National Science Foundation, 2018; Okahana, Klein, Allum, & Sowell, 2018; Wendler et al., 2010; Wendler et al., 2012). Indeed, “the global competitiveness of the US and capacity for innovation hinges fundamentally on a strong system of graduate education” (Wendler et al., 2010, p. 1). Undeniably, individuals who pursue and obtain a doctoral degree gain knowledge, experience, and skill sets that are critical to the nation's progress in terms of generating new knowledge, discovering new scientific methods, establishing effective leadership, furthering influential research, fostering revolutionary innovations, and solving the complex problems currently facing the nation and the world (Koc, 2013; National Science Foundation, 2018; Wendler et al., 2010; Wendler et al., 2012). These individuals work in all areas at the state and national level, including

government, technology, science, business, engineering, industry, and academia (Litalien, Guay, & Morin, 2015; National Science Foundation, 2018; Wendler et al., 2010; Wendler et al., 2012). As noted by Wendler et al. (2012), “the link between graduate education and American prosperity has never been stronger than it is today” (p. 1).

From 2010-2020, Wendler et al. (2012) estimated that 2.6 million jobs would require an advanced degree. Specifically predicted was that the number of jobs requiring a doctorate or professional degree would increase by 20% (Wendler et al., 2012). These estimates may be interpreted to mean that an advanced degree is not an option but a requirement for certain occupations—occupations where a graduate education is typically associated with higher salaries (Koc, 2013; Melguizo & Wolniak, 2012; Pedersen, 2015; Wendler et al., 2012; Xu, 2013). Indeed, the expected lifetime earnings for someone with a doctoral degree is \$3 million, compared to \$2.7 million with a master’s degree and \$2.3 million with a bachelor’s degree (Wendler et al., 2012).

Of particular concern in terms of societal advancement, the economy, and in remaining competitive at both the national and global level is a diverse doctoral-trained workforce, particularly in the fields of science, technology, engineering, and mathematics (STEM) as well as in the professoriate (Dika & D’Amico, 2016; Griffin & Muniz, 2011; Holley & Gardner, 2012; Okahana, et al., 2018); Smith, Turner, Osei-Kofi, & Richards, 2016; Sowell, Allum, & Okahana, 2015). Indeed, Holley and Gardner (2012) made the following observation regarding the importance of doctoral degree attainment as well as the importance of diversity in doctoral programs:

Over the past 20 years, increased attention has been directed toward doctoral degree attainment. This attention is in part attributable to the central role that the

degree plays in the higher education system. Doctoral programs train future scholars, who in turn construct a variety of academic, research, and other professional careers. Given the importance of the degree to the country's scientific ambitions and economic security, concern has been expressed over the lack of student diversity in doctoral programs. (p. 112)

A stated national priority in the United States is to promote diversity in doctoral programs in the previously mentioned fields as well as in the overall general workforce (Ebersole, 2010; Griffin & Muniz, 2011; Holley & Gardner, 2012; Okahana & Zhou, 2019; Sowell et al., 2015). Important to note is that the priority of diversity is also present in postsecondary education. The likelihood that contemporary colleges and universities will become institutions where underrepresented students, particularly racial/ethnic minority students, are engaged at the doctoral level is increased if postsecondary institutions employ a diverse faculty (Millett & Nettles, 2006). However, this requirement presents a conundrum in that for an ethnically/racially diverse faculty to exist, an ethnically/racially diverse student population must first enroll in and complete doctoral programs (Millett & Nettles, 2006). Moreover, "doctoral education is the training ground for the professoriate, and homogeneity in this population calls our ability to meet the needs of our increasingly diverse student body into question" (Griffin & Muniz, 2011, p. 57).

Although the enrollment of underrepresented students in doctoral programs in STEM and other fields has increased over the past decade, the enrollment of underrepresented students in doctoral programs has been substantially lower than that of their White counterparts (Espinosa, Turk, Taylor, & Chessman, 2019; Griffin & Muniz,

2011; Okahana et al., 2018; Sowell et al., 2015). Despite efforts to diversify the student population in higher education, substantial disparities are present between the enrollment of White students and underrepresented students in STEM and in non-STEM doctoral programs (Griffin & Muniz, 2011; Holley & Gardner, 2012; Okahana et al., 2018; Sowell et al., 2015). Not surprisingly, the low enrollment of underrepresented students in doctoral programs is directly related to low degree completion rates.

In the 2016-2017 academic year, 107,445 doctoral degrees were awarded to White students, whereas only 12,493 were awarded to Hispanic students, and 14,027 doctoral degrees were awarded to Black students (National Center of Education Statistics, 2018). These national statistics are reflected in postsecondary institutions in Texas, the state of interest in this study. In Texas, 3,341 doctoral degrees were awarded to White students, whereas only 1,113 doctoral degrees were awarded to Hispanic students and 514 doctoral degrees were awarded to Black students (Texas Higher Education Accountability System, 2018).

Recognizing the near absence of research studies on underrepresented students in advanced degree programs, Franklin (2013) focused on examining the *Closing the Gaps by 2015*, a statewide Texas education and diversity initiative. Franklin (2013) investigated the number and percentage of master's, doctoral, and professional degrees awarded by public 4-year postsecondary institutions in the State of Texas from the 2000 through the 2011 academic years. For purposes of this article, only Franklin's (2013) analysis of the number and percentage of doctoral degrees awarded are addressed.

Franklin (2013) determined that from the 2000 academic year through the 2011 academic year, a total of 29,335 doctoral degrees were awarded by Texas 4-year



postsecondary institutions to White, Hispanic, and Black students. White students obtained the highest number of doctoral degrees throughout the 12-year time period. Specifically, in 2000, 1,193 doctoral degrees were awarded to White students—a number that slightly increased to 1,341 in 2011. The number of doctoral degrees awarded to Hispanic students increased from 121 in 2000 to 243 in 2011. Similarly, the number of doctoral degrees awarded to Black students increased from 84 in 2000 to 192 in 2011.

Although the number of doctoral degrees awarded steadily increased for White, Hispanic, and Black students from 2000 to 2011, the percentage of doctoral degrees conferred fluctuated for all three groups from 2000 to 2011. Specifically, White students earned the highest percentage of doctoral degrees during the 12-year time period as well as in each individual year, followed by Hispanic and Black students, respectively. White students were awarded 57.41% of doctoral degrees in 2000—a percentage that climbed to 61.19% in 2001 but then steadily declined to 43.81% in 2011. The percentage of doctoral degrees awarded to Hispanic students increased from 5.82% in 2000 to 7.94% in 2011. Similarly, the percentage of doctoral awarded to Black students grew from 4.04% in 2000 to 6.27% in 2011. In short, Franklin (2013) concluded that the number of doctoral degrees conferred by Texas 4-year public colleges and universities increased for White, Hispanic, and Black students from 2000 to 2011. However, the percentage of doctoral degrees awarded to White students decreased from 2000 to 2011, whereas the number of doctoral degrees conferred increased for Hispanic and Black students.

Regarding the percentage change over time for each group, the percentage of doctoral degrees conferred decreased for White students, whereas the percentage of doctoral degrees awarded increased for Hispanic students and for Black students.

Specifically, White students were awarded 13.6% fewer doctoral degrees from 2000 to 2011, whereas Hispanic students were awarded 2.12% more doctoral degrees from 2000 to 2011, and Black students were awarded 2.23% more doctoral degrees from 2000-2011.

Several reasons have been given for the disparities in the ethnic/racial composition of students enrolled in doctoral degree programs, one of which is overall acceptance rates into doctoral programs. In 2018, only 23.5% of all applicants were accepted into doctoral programs in the United States (Okahana & Zhou, 2019). Another source of disparity in doctoral education is the previously mentioned high rate of attrition—an occurrence that is multidimensional and multifaceted in nature (Gardner, 2009). According to Gittings, Bergman, Shuck, and Rose (2018), approximately 40% to 60% of all doctoral students do not persist to graduation. Moreover, underrepresented racial/ethnic minorities who pursue a doctoral education have higher attrition rates and lower degree-completion rates than their White peers (Sowell et al., 2015). Additional causes of attrition include, imposter syndrome, parental level of education, family obligations, age, lack of interaction with faculty mentors, employment issues, and financial resources (Bergman, Gross, Berry, & Shuck, 2014; Gittings et al., 2018; Litalien et al., 2015; Martinsuo & Turkulainen, 2011; Rockinson-Szapkiw, 2019). Further, the Council of Graduate Schools (n.d.) identified six sources of attrition related to institutional and doctoral program characteristics, including selection, mentoring, financial support, program environment, research mode of the field, and processes and procedures.

## **Review of the Literature for Diversity in Professional Degree Attainment**

A graduate education has become increasingly important in terms of employment, financial stability, economic health, and in remaining competitive in the global marketplace. Indeed, graduate degree programs prepare individuals to “teach in our schools and universities, drive innovation, attract intellectual and commercial investment, and strengthen American prestige and economic power” (Wendler et al., 2010, preface). According to Wendler et al. (2012), from 2010 to 2020, 2.6 million jobs would require a graduate degree and occupations requiring a doctoral or professional degree would increase by 20%. Further predicted was that the majority of all new occupations from 2010-2020 would be in the professional and service sectors (Wendler et al., 2010). Some of these occupations require a professional degree—an advanced degree that is different from a master’s or doctoral degree. A professional degree can be defined as “discipline specific, including, but not limited to, degrees such as Dentistry (DDS or DMD), Medicine (MD), Osteopathic Medicine (DO), Veterinary Medicine (DVM), Law (LLB, JD), Optometry (OD), [and] Pharmacy (PharmD)” (Texas Higher Education Coordinating Board, 2017, p. 32).

The aforementioned professional degrees typically involve extensive study in one or more areas of science, technology, engineering, and mathematics—fields commonly referred to by those individuals in the academic community as STEM fields. The importance of a graduate educated workforce in STEM areas has been emphasized by several researchers. These researchers have also noted that to realize projected labor demands, the workforce of the future must be educated in STEM areas (Dika & D’Amico, 2016; Griffin & Muniz, 2011; Holley & Gardner, 2012; Jones et al., 2018;

Okahana et al., 2018; Sowell, Allum, & Okahana, 2015; Smith, Turner, Osei-Kofi, & Richards, 2016). Indeed, according to Jones et al. (2018),

. . . science, technology, engineering, and mathematics (STEM) underpin the government's ability to defend the nation and to assure the vitality of the economy. STEM jobs are the fastest growing occupational category and, by 2020, 65% of all jobs in the U.S. will require a post-secondary degree with STEM literacy skills. (p. 40)

Along with the increasing importance of a graduate education, particularly in professional degree STEM fields, is the importance of promoting and sustaining racial/ethnic diversity in graduate degree programs as well as in the workforce. However, although an increasing number of underrepresented students in higher education has been documented, these students remain underrepresented in postsecondary institutions across the nation (American Council on Education, 2019). Similarly, the American Council on Education (2019) noted that, in Fall 2018, 24.1% of graduate students belonged to an underrepresented group. Although this percentage reflects an increase in the underrepresented graduate student population, this population continues to remain substantially underrepresented (American Council on Education, 2019).

Identifying the paucity of research on underrepresented students in advanced degree programs, Franklin (2013) investigated an education and diversity initiative implemented in the State of Texas known as *Closing the Gaps by 2015*. Franklin (2013) focused on the numbers and percentages of advanced degrees awarded to White, Hispanic, and Black students by postsecondary institutions in the State of Texas from the 2000 through the 2011 academic years. Although Franklin (2013) analyzed master's,

doctoral, and professional degree attainment, for purposes of this article, only professional degree attainment are discussed.

Franklin (2013) documented that from the 2000 academic year through the 2011 academic year, a total of 20,579 professional degrees were awarded to White, Hispanic, and Black students by Texas 4-year postsecondary institutions. White students were awarded the highest number of professional degrees for each individual year from 2000 to 2011. The number of degrees awarded to White students fluctuated throughout the 12-year time period, ranging from a low of 951 in 2007 to a high of 1,182 in 2005. The number of professional degrees awarded to Hispanic students increased steadily from 2000 to 2011, climbing from a low of 153 in 2000 to a high of 253 in 2011. Like the number of professional degrees awarded to White students, the number of professional degrees awarded to Black students fluctuated throughout the 2000-2011 academic years. The fewest professional degrees ( $n = 172$ ) were awarded to Black students in 2000 and the most professional degrees ( $n = 226$ ) were awarded in 2003.

Regarding the percentage of professional degrees awarded to White, Hispanic and Black students from 2000 to 2011, White students earned the highest percentage of professional degrees throughout the 12-year time period from 2000-2011, as well as in each individual academic year. The percentage of professional degrees awarded to White students fluctuated throughout the 12-year time frame, with the highest percentage awarded in 2000 (66.42%) and the lowest percentage awarded in 2011 (55.80%). The percentage of professional degrees awarded to Hispanic students and to Black students also varied throughout the 2000 and 2011 academic years. Hispanic students earned the lowest percentage of professional degrees in 2002 (9.46%) and the highest percentage in

2011 (14.10%). Overall, with the exception of the percentage of degrees awarded in 2002, a steady increase was observed in the percentage of professional degrees awarded to Hispanic students from 2000 through 2011. Similar to the percentage of professional degrees awarded to White and Hispanic students, the number of degrees awarded to Black students fluctuated from 2000 through 2011, with the lowest percentage awarded in 2010 (10.18%) and the highest awarded in 2003 (13.64%).

### **Statement of the Problem**

As the population in the United States has increased and become more racially/ethnically diverse, so too has the student population in postsecondary institutions. The majority of researchers, however, have focused primarily on the undergraduate experience of underrepresented students. Few researchers have focused on the experience of underrepresented students pursuing a graduate education—particularly in terms of educational attainment and outcomes at the graduate level. The lack of focus and research in this area is problematic for several reasons. First, obtaining an advanced degree is becoming increasingly important in terms of employability, earning potential, economic health, and global competitiveness (Koc, 2013; Perna, 2015; Wendler et al., 2010; Wendler et al., 2012). Second, in general, many people fail to recognize the wealth of tangible and intangible benefits that could result from a racial and ethnically diverse population. Indeed, although myriad aspects inform access to a graduate education and the attainment of an advanced degree “. . . race is a prevailing factor in many educational outcomes” (American Council on Education, 2019, p. 3). As noted by the American Council on Education (2019),

Racial and ethnic diversity comes with a host of benefits at all levels of education and in the workforce—greater productivity, innovation, and cultural competency, to name a few. Moreover the current and future health of our nation—economic and otherwise—requires that the whole of our population have equitable access to sources of opportunity. (p. 3)

Additionally, promoting and sustaining a racially/ethnically diverse and educated workforce provides many opportunities to interact with and learn from individuals from a variety of backgrounds with different worldviews. Such opportunities promote cultural competency—the ability to increase awareness and knowledge of human beings who are different from one another. Argued herein is that cultural competency necessitates that individuals go beyond increasing awareness and knowledge of dissimilarities to embracing the power of critical thinking, innovation, and problem solving abilities that a diverse group of people have the potential to offer. Cultural competency is especially important when considering that the world is becoming increasingly globalized and, as such, compels individuals to interact effectively in differing societies and in areas such as internationalized economics and trade, governments, policy making, politics, and technological advancement. Third, although an increasing number of postsecondary institutions have implemented initiatives to promote diversity and to elevate the number of underrepresented students in advanced degree programs, few researchers have focused on the success of these initiatives, particularly in terms of enrollment and completion rates, for underrepresented students in graduate degree programs.

As previously noted, increases in the ethnic/racial diversity of the United States population are reflected in the undergraduate student populations of Texas postsecondary

institutions. However, unlike the undergraduate student population, which mirrors more closely the diversity of the nation's population, substantial racial/ethnic disparities exist in the graduate student population, particularly at the doctoral level (Ebersole, 2010; Griffin & Muniz, 2011; Holley & Gardner, 2012; Okahana & Zhou, 2019; Sowell et al., 2015). This state of affairs is problematic when considering the urgency of producing a heterogeneous, doctoral-trained workforce—a workforce comprised of diverse individuals who have the knowledge, critical thinking skills, and problem solving abilities that are needed in the 21st century's knowledge economy (Wendler et al., 2010; Wendler et al, 2012). As noted by Wendler et al. (2010),

. . . graduate education goes beyond just providing students with advanced knowledge and skills—it also further develops critical thinking skills and produces innovators. It is the application of knowledge and skills in creative and innovative ways that will help ensure our country's future economic prosperity, influence social growth, and maintain our leadership position in the global economy. (p. 1)

### **Purpose of the Study**

The overall purpose of this journal-ready dissertation was to ascertain the extent to which progress occurred during the State of Texas' *Closing the Gaps by 2015* and the *60x30TX* education initiatives. In particular, the purpose of this dissertation was to determine the degree to which changes were present in the numbers and percentages of advanced degrees awarded by public, 4-year postsecondary institutions in the State of Texas as a function of race/ethnicity. More specifically, the numbers and percentages of master's, doctoral, and professional degrees awarded to White, Hispanic, and Black



students from the 1999-2000 academic year through the 2018-2019 academic year were examined to determine whether statistically significant changes had occurred in the number of master's, doctoral, and professional degrees awarded to the aforementioned racial/ethnic groups. Additionally, the purpose of this dissertation was to ascertain the extent to which trends were present in advanced degree attainment by White, Hispanic, and Black students from Texas public, 4-year postsecondary institutions from the 1999-2000 through the 2018-2019 academic years.

### **Significance of the Study**

Procuring a heterogeneous and educated workforce, in particular a workforce comprised of diverse individuals who have a graduate education, is of paramount importance to individuals' employment and financial stability and, perhaps more importantly, to the economic health of the United States and its ability to remain competitive in the global marketplace. Toward this end, the Texas Higher Education Coordinating Board implemented two education initiatives in the State of Texas. The first initiative was *Closing the Gaps by 2015*, which was in operation from 2000 through 2015. The purpose of this initiative was to close the gaps in education in terms of participation, success, excellence, and research (Texas Higher Education Data, 2015). The second initiative was the *60x30TX* plan, which was put into practice in the 2015-2016 academic year and which will continue through the 2029-2030 academic year. The goals of this plan are to ensure that 60% of students between the ages of 25 to 34 earn a certificate or degree by 2030, graduate with identifiable marketable skills, and obtain employment where student loan debt does not exceed 60% of first-year wages (Texas Higher Education Coordinating Board, 2015).

Given the urgency of promoting and sustaining a diverse and graduate-educated workforce, the implementation of the aforementioned initiatives is both judicious and relevant. However, simply creating initiatives and implementing them is not enough. These initiatives must be examined to ascertain the attained levels of success and equity as they relate to underrepresented students' completion of advanced degree programs. The results of such an examination would provide essential information to legislators, administrators, graduate program recruiters, and to other educational leaders tasked with making critical decisions with far-reaching implications at all levels of education (Franklin, 2013). Yet, a review of the literature yielded few published research studies where researchers investigated underrepresented students' attainment of an advanced degree. Moreover, in the State of Texas, only one study has been conducted (Franklin, 2013) whose author examined the success of the state's *Closing the Gaps by 2015* by investigating the attainment of advanced degrees as a function of race/ethnicity from the 2000-2011 academic years.

Because few researchers have explored the effectiveness of education and diversity initiatives both on a national level and on a state level, specifically in Texas, little evidence exists regarding the effectiveness of these initiatives. The significance of this dissertation resides, in part, in a contribution to the limited literature on diversity and equity in graduate education. More specifically, this dissertation served as an update to Franklin's (2013) study on *Closing the Gaps by 2015*. In this study, Franklin (2013) addressed diversity and equity in graduate education from 2000 to 2011. In this dissertation, the data that were analyzed included the 20 years of *Closing the Gaps by 2015* initiative (2012-2015) as well as for the *60x30TX* initiative from 2015-2019

academic years. An investigation of the participation of underrepresented students in Texas master's, doctoral, and professional programs throughout the aforementioned time period encapsulated more fully any disparities that might be present in terms of a graduate level education.

### **Definition of Terms**

To ensure that readers will have a complete understanding of the terms and phrases in this journal-ready dissertation, definitions of key terms are provided below.

#### **Academic Year**

An academic year is defined as the “12-month period of time generally extending from September to August” (Texas Higher Education Coordinating Board, 2017, p. 1).

#### **Black or African American**

Black or African American is defined as “the race of a person having origins in any of the black racial groups of Africa” (Texas Higher Education Coordinating Board, 2017, p. 8).

#### **Closing the Gaps by 2015**

*Closing the Gaps by 2015* was an initiative created in 2000 by the Texas Higher Education Coordinating Board to prevent educational decline and to stimulate a healthy state economy. More specifically, this initiative was designed to increase college completion rates for racial/ethnic and other underrepresented students by focusing on participation, success, excellence, and research (Texas Higher Education Coordinating Board, n.d.).

**Doctoral Degree**

A doctoral degree is “an academic degree beyond the level of a master’s degree that typically represents the highest level of formal study or research in a given field” (Texas Higher Education Coordinating Board, 2017, p. 26).

**Hispanic**

Hispanic is defined as “an ethnic origin of a person of Cuban, Mexican, Puerto Rican, South or Central America, or other Spanish culture or origin, regardless of race” (Texas Higher Education Coordinating Board, 2017, p. 38).

**Master’s Degree**

A master’s degree is a degree “that requires the successful completion of a program of study at least the full-time equivalent of [one] but no more than [two] academic years beyond the bachelor’s degree” (Texas Higher Education Coordinating Board, 2017, p. 43).

**Professional Degree**

A professional degree is “discipline specific, including, but not limited to, degrees such as Dentistry (DDS or DMD), Medicine (MD), Osteopathic Medicine (DO), Veterinary Medicine (DVM), Law (LLB, JD), Optometry (OD), [and] Pharmacy (PharmD)” (Texas Higher Education Coordinating Board, 2017, p. 32).

**Public Postsecondary Institution**

For the purposes of this study a public postsecondary institution in the United States is defined as a state-funded establishment that provides an education beyond high school, including both undergraduate and postgraduate education.

**60x30TX Plan**

Following the conclusion of the *Closing the Gaps by 2015*, the Texas Higher Education Coordinating Board implemented a new initiative. The overall goal of the *60x30TX* initiative is to ensure that 60% of the students between the ages of 25 to 34 in the State of Texas earn a certificate or degree by the year 2030 (Texas Higher Education Coordinating Board, 2015). More specifically, a minimum of 550,000 students will have earned a certificate, an associate's degree, or a bachelor's degree by the year 2030. Additionally, those students will graduate with marketable skills and a student loan debt not to exceed 60% of first-year wages (Texas Higher Education Coordinating Board, 2015).

**Texas Higher Education Coordinating Board**

The Texas Higher Education Coordinating Board (THECB) was created by Texas legislature in 1965 to monitor all public post-secondary education in the state of Texas. Specifically, "the mission of the THECB is to provide leadership and coordination for Texas higher education and to promote access, affordability, quality, success, and cost efficiency through *60x30TX*, resulting in a globally competitive workforce that positions Texas as an international leader" (Texas Higher Education Coordinating Board, n.d. para.1)

**White**

White is defined as "a race of a person having origins in any of the original peoples of Europe, the Middle East or North Africa" (Texas Higher Education Coordinating Board, 2017, p. 68).

### **Literature Review Search Procedures**

For this journal-ready dissertation, the literature related to underrepresented students and their attainment of master's, doctoral, and professional degrees were reviewed. The literature review search was conducted using education databases, including Education Source and Educational Research Information Clearinghouse (ERIC). Additional databases that were used in the search included the United States Census Bureau, the Texas Higher Education Coordinating Board, the Texas Higher Education Board Interactive Accountability System, the U. S. Bureau of Labor Statistics, the Council of Graduate Schools, the National Center for Education Statistics, and the National Science Foundation. These latter databases were searched to retrieve relevant demographic and education-related statistical information.

For the searches that were conducted using education databases, only full-text academic journal or other scholarly work published between 2000 and 2019 were considered. Keywords used in the education database searches included, *graduate education, graduate degree advanced degree, master's degree, doctoral degree or doctorate, professional degree, professional education, professional schools, degree attainment, disadvantaged students, underrepresented minorities, racial or ethnic minorities, race or ethnicity, and equity*. Additionally, Boolean phrases including the keywords were also used to locate relevant literature.

### **Delimitations**

For this journal-ready dissertation, archival data were obtained from the Texas Higher Education Coordinating Board Interactive Accountability website. Data included the number of master's, doctoral, and professional degrees earned by White, Hispanic,

and Black students in the State of Texas for the 2011-2012 academic year through the 2018-2019 academic year. Data for this study were delimited to include only public, 4-year colleges and universities that documented and reported degree information to the Texas Higher Education Coordinating Board. Because of the unavailability of relevant data, private and for-profit institutions were not included in the study. Finally, because the data for this investigation were self-reported, this data may not have been entirely inclusive or accurate.

### **Limitations**

For this journal-ready dissertation, the number of master's, doctoral, and professional degrees as a function of race/ethnicity that were awarded by Texas postsecondary institution were examined for the 1999-2000 academic year through the 2018-2019 academic year. Because self-reported, archival data were used for this quantitative study, limitations related to reliability and validity must be addressed. The criteria for research reliability were met because the aforementioned archival data did not change—the data remained consistent and stable over time thus allowing for repeatability of the study and the consequential results.

Although the criteria for the reliability of this study were met, external and internal validity were present. Because the data were limited to graduate degree attainment in the State of Texas, the degree to which results might be generalizable to other states is not known. Similarly, limitations to the internal validity of this study were also present. The first limitation to internal validity involved the tenuous causal relationship between Texas education initiatives and the number and percentage of

graduate degrees earned in Texas as a function of race/ethnicity over time. The second limitation is that self-reported data were used for this journal-ready dissertation.

### **Assumptions**

The foremost assumption of this journal-ready dissertation was that the data on the numbers and percentages of graduate degrees awarded to White, Hispanic, and Black students in the State of Texas were accurate. Moreover, it was assumed that once these data were received, they were entered accurately in the Texas Higher Education Coordinating Board's database and, additionally, that these data were accurately presented on this Board's website. Should errors have been made in the reports of data, data collection, and/or data entry, these errors might have potentially influenced the findings and conclusions for this journal-ready dissertation.

### **Procedures**

Following the approval of this journal-ready dissertation from the doctoral dissertation committee, an application was submitted to the Sam Houston State University Institutional Review Board to conduct the study. Subsequent to the approval of the Institutional Review Board, data were collected from the Texas Higher Education Coordinating Board Interactive Accountability System and were converted to an Excel file and then transferred to SPSS for data analyses. The data collected and analyzed included advanced degrees awarded to White, Hispanic, and Black students by 4-year, public postsecondary institutions in the State of Texas for the 1999-2000 academic year through the 2018-2019 academic year.



### **Organization of the Study**

Three research studies were conducted for this journal-ready dissertation. In the first study, seven research questions were addressed regarding the numbers and percentages of master's degrees earned by White, Hispanic, and Black students in the State of Texas for the 1999-2000 academic year through the 2018-2019 academic year. For the second study, research questions were analyzed regarding the number and percentages of doctoral degrees obtained by White, Hispanic, and Black students in Texas for the 1999-2000 academic year through the 2018-2019 academic year. Finally, the research questions for the third study addressed the numbers and percentages of professional degrees obtained by White, Hispanic, and Black students in Texas for the 1999-2000 academic year through the 2018-2019 academic year.

This journal-ready dissertation is comprised of five chapters. The first chapter includes an introduction, a statement of the problem, the purpose of the study, the significance of the study, a definition of terms, the literature review search procedures, the delimitations, the limitations, and the assumptions. In the second chapter, the degree to which differences existed in master's degree attainment as a function of race/ethnicity are discussed. In the third chapter, the extent to which differences were present in doctoral degree attainment as a function of race/ethnicity are addressed. In Chapter IV, the degree to which differences existed in professional degree attainment as a function of race/ethnicity are discussed. Finally, in Chapter V, the results for the first, second, and third study are summarized and addressed. Also addressed are the implications for policies and recommendations for future research.

**CHAPTER II****DIFFERENCES IN MASTER'S DEGREE ATTAINMENT AS A FUNCTION OF  
RACE/ETHNICITY: A TEXAS MULTIYEAR, STATEWIDE ANALYSIS**

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This dissertation follows the style and format of *Research in the Schools (RITS)*.

### **Abstract**

In this multiyear, statewide investigation, the degree to which changes had occurred in the numbers and percentages of master's degrees awarded to White, Hispanic, and Black students in Texas public postsecondary institutions from the 1999-2000 academic year through the 2018-2019 academic year was examined. The highest number of master's degrees was consistently awarded to White students, followed by Hispanic students and Black students, respectively. Statistically significant differences were present for the percentages of master's degrees awarded to White, Hispanic, and Black students between the 1999-2000 academic year and the 2018-2019 academic year. The percentage of master's degrees awarded to White students decreased by nearly 20%, whereas the percentage of master's degrees awarded to Hispanic students and to Black students increased by 30% and 18%, respectively. As such, the ethnic/racial diversity of master's degree recipients increased over the academic years of data analyzed herein.

*Keywords:* Graduate degree, Advanced degree, Master's degree, Race/ethnicity, Equity

DIFFERENCES IN MASTER'S DEGREE ATTAINMENT AS A FUNCTION OF  
RACE/ETHNICITY: A MULTIYEAR, STATEWIDE ANALYSIS

The contemporary world has entered a globalized age characterized, in part, by a steady increase in the worldwide population. As of January 1, 2019 the United States was rated as the third most populated country in the world, preceded by China and India, respectively (United States Census Bureau, 2019). The population of the United States has continued to grow from a population of 281,421,906 in 2000 to 328,231,337 in 2019 (United States Census Bureau, 2019). This trend is projected to continue, with the population reaching 420 million by the year 2060 (United States Census Bureau, 2015).

Not surprisingly, the growth of the population in the United States has been accompanied by an increase in racial and ethnic diversity. Prior to reporting the percentages of this increase, it is important to note that, as a result of increased sensitivities regarding race, the United States Census Bureau (2001) changed the categories on race and Hispanic origin to be considered as two different concepts. Consequently, previous distinctions between ethnic/racial groups have since become somewhat indistinct, making it difficult to disaggregate and to report accurately race data. With these considerations present, according to the United States Census in 2000, 75.1% of the population were White with the remaining 24.9% of the population belonging to a racial/ethnic group other than White, including Black or African American, Hispanic (of any race), Asian, American Indian or Alaska Native, and Native Hawaiian or Other Pacific Islander (United States Census Bureau, 2000a). By 2010, the estimated number of individuals belonging to a racial/ethnic group other than White, including Hispanic origin of any race, had increased to 34.8% (United States Census Bureau, 2010). This

trend continued through 2018, with 41.8% of the population belonging to a race or Hispanic origin of any race other than White (United States Census Bureau, 2018a).

With respect to the state of interest in this article, from 2000 to 2018 an increase occurred in the population in the State of Texas, which is now the second most populated state in the nation (United States Census Bureau, 2018b). In 2000, the population in Texas was 20,851,820 (United States Census Bureau, 2000b), which increased to 25,146,114 in 2010, and to an estimated 28,701,845 in 2018 (United States Census Bureau, 2018c). Indeed, during 2018, Texas had a population increase of 379,128 individuals—a larger increase than in any other state (United States Census Bureau, 2018b).

Similar to the changes in the ethnic/racial diversity at the national level, the population growth in Texas has also been accompanied by an increase in racial/ethnic diversity. In 2000, 71% of the population was White, while the remaining 29% were of another race, including Black or African American, Hispanic (of any race), Asian, American Indian or Alaska Native, and Native Hawaiian or Other Pacific Islander. Between 2000 and 2010, the population in Texas increased by 4,283,741 (Texas Health and Human Services, 2018). Of this number, 70.4% were White, and 29.6% were of another race, including Black or African-American, Hispanic (of any race), Asian, American Indian or Alaska Native, and Native Hawaiian or Other Pacific Islander. By 2018, 53.9% of the Texas population was reported as belonging to a race other than White (Texas Health and Human Services, 2018).

The increases in the ethnic/racial diversity of the population of the United States and specifically in Texas have been reflected in student populations at postsecondary

institutions. At the national level, in Fall 2018, approximately 24.1% of the graduate student population was reported as belonging to an underrepresented group (American Council on Education, 2019). Although this percentage represented a healthy increase in underrepresented student enrollment, students from this population remain considerably underrepresented in graduate degree programs (American Council on Education, 2019).

The enrollment of students who are historically underrepresented in colleges and universities across the United States is increasing, with the number of first-generation students comprising 30% of the college student population and the number of students who are both first-generation and economically disadvantaged comprising 24% of the college student population (National Science Foundation, 2018). Although the percentage of underrepresented students entering postsecondary institutions is increasing, these students still remain underrepresented in higher education (American Council on Education, 2019). Underrepresented students encounter many challenges traversing their way through the college experience, an experience that is often complicated by the fact that they are more likely to be first-generation, economically disadvantaged, and a racial/ethnic minority (Fox, Hamrick, & Tayebi, 2017; Terenzini, Springer, Yaeger, & Nora, 1996).

Confronted with difficulties in funding a graduate degree and often limited family support, underrepresented students are much less likely than their counterparts to pursue a graduate education (Baum & Steele, 2017; Carter, 2006). First-generation students, in particular, experience difficulty transitioning to postsecondary institutions and are less likely than their counterparts to enroll in a graduate degree program (Engle, 2007). Moreover, White students who have higher family incomes and whose parents have

earned a college degree have distinct advantages for earning a graduate degree (Baum & Steele, 2017), whereas underrepresented students have dissimilar advantages and, when compared to their advantaged counterparts, are less likely to enroll in graduate programs and to graduate with an advanced degree (Baum & Steele, 2017). Yet, for those underrepresented students who do decide to pursue an advanced degree, they are less likely than are White, continuing-generation students with higher family incomes to complete the graduate school application process. Underrepresented students are often times unacquainted with investigating potential graduate programs, the application process itself, preparing for entrance exams, and with writing personal statements and creating curriculum vitas. Moreover, if underrepresented students successfully manage the challenges of applying to and being accepted into a graduate program, they are often at-risk of persisting in their graduate education because they have difficulty understanding and reconciling the differences between academic expectations at the undergraduate level and the higher academic expectations at the graduate level (Weidman, Twale, & Stein, 2003).

As readers may be aware, a paramount challenge facing the United States is to improve accessibility to a postsecondary education, both at the undergraduate and graduate level. Failing to close the gaps in higher education attainment across underrepresented groups would expose the nation's inability to attain and sustain the level of educational achievement needed for success in the job market and global competitiveness (Perna, 2015). In the past, earning a bachelor's degree was deemed to be sufficient in terms of employment. However, this level of education may no longer be adequate. As noted by Wendler et al. (2010, preface),

A graduate degree will become the new bachelor's degree, the minimal education credential that high-skills employers require. If that is so, then the United States is in peril of losing its competitive edge, with long-term consequences for our economy, our quality of life, and our global standing. (p. 3)

Indeed, indications are present that obtaining an advanced degree is becoming increasingly important in terms of employability, earning potential, economic health, and global competitiveness (Koc, 2013; Wendler et al., 2010; Wendler et al., 2012). These indications have led some individuals to contend that a master's degree will be fundamental to success in the labor market (Koc, 2013). Between 2011 and 2012, the dominant degree sought after by employers changed from a bachelor's degree to an advanced degree (Koc, 2013). Specifically, the percentage of those individuals recruited with a master's degree increased from 15% in 2011 to approximately 21% in 2012 (Koc, 2013). When considering earning potential, individuals with a master's degree typically earned more than individuals with a bachelor's degree (Koc, 2013; Wendler et al., 2010; Wendler et al., 2012). In 2017, for workers age 25 or older, the median weekly earnings of individuals with a bachelor's degree was approximately \$1,173, whereas the weekly earnings of individuals with a master's degree was approximately \$1,401 (Torpey, 2018).

The value of a master's degree does not end with employability and potential earnings but extends to the health and stability of the economy and to remaining competitive in a global marketplace. A graduate education cultivates critical thinking and decision-making abilities, as well as other skills, that are necessary for finding solutions to some of the United States' most urgent problems. Such problems include national security, health care, energy, and environmental concerns.



In recognition that fewer Texans were pursuing a postsecondary education as well as the negative effects of this decline on the state's economy, the Texas Higher Education Coordinating Board developed a plan known as *Closing the Gaps by 2015* (Texas Higher Education Data, 2015). This plan was implemented in October 2000 and was intended to close "educational gaps within the State of Texas and between Texas and other states" (Texas Higher Education Data, 2015, para.1). *Closing the Gaps by 2015* was also adopted to increase excellence in higher education programs and to increase research endeavors in postsecondary institutions across the State of Texas. Specifically, four goals were included in the plan: (a) Close the gaps in participation, (b) Close the gaps in success, (c) Close the gaps in excellence, and (d) Close the gaps in research. Following the *Closing the Gaps by 2015* initiative, the Texas Higher Education Coordinating Board implemented a new plan—the *60x30TX* plan. The overall goal of this initiative is to ensure that 60% of the students between the ages of 25 to 34 in the State of Texas earn a certificate or degree by the year 2030 (Texas Higher Education Coordinating Board, 2015).

The success of the statewide education and diversity initiative, *Closing the Gaps by 2015*, has been examined, thus far, by only one researcher (Franklin, 2013). Noting the importance of a graduate education, changing demographic trends, and the necessity of diversity in advanced degree programs, Franklin (2013) investigated the number of master's, doctoral, and professional degrees awarded to White, Black, and Hispanic students in the State of Texas from 2000 to 2011. For the purpose of this article, only data regarding master's degrees will be addressed. Data were obtained from the Texas Higher Education Coordinating Board Interactive Accountability System—an online

publicly available database. Franklin (2013) documented that 282,821 master's degrees were awarded by public, 4-year postsecondary institutions in the State of Texas from the 2000 academic year through the 2011 academic year. In 2000, 10,556 master's degrees were awarded to White students—a number that increased to 14,802 by 2011. Hispanic students obtained 2,058 master's degrees in 2000 and 4,906 in 2011.

Regarding the percentage of master's degrees conferred in 2000, 59.26% were awarded to students who were White. This percentage steadily declined over the 12-year period to 46.88% in 2011. Hispanic students earned 11.55% of master's degrees conferred in 2000—a percentage that steadily increased to 15.54% in 2011. Similar to the increase in master's degrees awarded to Hispanic students, master's degrees awarded to Black students increased from 6.64% in 2000 to 9.00% in 2011. In sum, White students were awarded the highest percentage of master's degrees during the 12-year time frame. In each individual year, the percentage of master's degrees earned by the Hispanic and Black populations steadily increased.

### **Statement of the Problem**

As the population in the United States has increased and become more racially/ethnically diverse, so to has the student population in postsecondary institutions across the nation. Yet, the majority of researchers have focused primarily on the undergraduate experience of underrepresented students. Few researchers, however, have focused on the experience of underrepresented students pursuing a graduate education—particularly in terms of educational attainment and outcomes at the graduate level. The lack of focus and research in this area is problematic for several reasons. First, as previously noted, obtaining an advanced degree is becoming increasingly important in

terms of employability, earning potential, economic health, and global competitiveness (Koc, 2013; Perna, 2015; Wendler et al., 2010; Wendler et al., 2012). Second, in general, many people fail to recognize the wealth of tangible and intangible benefits that could result from a racial and ethnically diverse population. Indeed, although myriad aspects inform access to a graduate education and the attainment of an advanced degree “. . . race is a prevailing factor in many educational outcomes” (American Council on Education, 2019, p. 3). As noted by the American Council on Education (2019),

Racial and ethnic diversity comes with a host of benefits at all levels of education and in the workforce—greater productivity, innovation, and cultural competency, to name a few. Moreover, the current and future health of our nation—economic and otherwise—requires that the whole of our population have equitable access to sources of opportunity. (p. 3)

Additionally, promoting and sustaining a racially/ethnically diverse and educated workforce provides many opportunities to interact with and learn from individuals from a variety of backgrounds with different worldviews. Such opportunities promote cultural competency—the ability to increase awareness and knowledge of human beings who are different from one another. Argued herein is that cultural competency necessitates that individuals go beyond increasing awareness and knowledge of dissimilarities to embracing the power of critical thinking, innovation, and problem solving abilities that a diverse group of people have the potential to offer. Cultural competency is especially important when considering that the world is becoming increasingly globalized and, as such, compels individuals to interact effectively in differing societies and in areas such as internationalized economics and trade, governments, policy making, politics, and

technological advancement. Third, although an increasing number of postsecondary institutions have implemented initiatives to promote diversity and to elevate the number of underrepresented students in advanced degree programs, few researchers have focused on the success of these initiatives, particularly in terms of enrollment and completion rates, for underrepresented students in master's degree programs.

### **Purpose of the Study**

The overall purpose of this study was to determine the degree to which changes had occurred in the numbers of master's degrees awarded to White, Hispanic, and Black students in Texas public postsecondary institutions from the 1999-2000 academic year through the 2018-2019 academic year. Also ascertained were the percentages of master's degrees awarded to White, Hispanic, and Black students during the same time frame. Specifically, analyses were conducted from the 1999-2000 academic year through the 2018-2019 academic year to determine whether statistically significant changes had occurred in the numbers and percentages of master's degrees awarded to White, Hispanic, and Black students. The final purpose involved ascertaining the extent to which trends were present in both the numbers and percentages of master's degrees awarded to White, Hispanic, and Black students in Texas for the 1999-2000 through the 2018-2019 academic years.

### **Significance of the Study**

To date, few research investigations have been published regarding the enrollment of underrepresented students in master's degree programs. Moreover, few research studies have been published concerning the effectiveness and success of diversity and education initiatives designed to decrease the racial/ethnic disparity in master's degree programs at the national level and at the state level, specifically in the State of Texas.

Indeed, Franklin (2013) noted the near absence of research and literature on underrepresented students' attainment of graduate degrees and conducted a statewide investigation into Texas' *Closing the Gaps by 2015* initiative by focusing on the attainment of graduate degrees as a function of race/ethnicity from 2000 to 2011. The significance of this article resides primarily in providing an update to Franklin's (2013) findings through an investigation of underrepresented students' completion rates at the master's degree level for all 20 years of the *Closing the Gaps by 2015* initiative—1999-2000 through 2014-2015 as well as the *60x30TX* 2015-2016 through the 2018-2019 academic years. This update is an opportunity to analyze and to capture more fully the success of this initiative, specifically in terms of the goal regarding success.

Additionally, this investigation will contribute to the limited research and literature on the educational attainment of underrepresented students at the graduate level.

### **Research Questions**

The following research questions were addressed in this study: (a) What are the numbers of master's degrees awarded to White students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?; (b) What are the numbers of master's degrees awarded to Hispanic students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?; (c) What are the numbers of master's degrees awarded to Black students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?; (d) What is the difference in the percentage of master's degrees awarded to White students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic

year?; (e) What is the difference in the percentage of master's degrees awarded to Hispanic students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?; (f) What is the difference in the percentages of master's degrees awarded to Black students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?; and (g) What is the trend in the percentages of master's degrees awarded to White, Hispanic, and Black students at public postsecondary institutions in Texas between the 1999-2000 academic year and the 2018-2019 academic year?

## **Method**

### **Research Design**

The research design for this study was a non-experimental, causal comparative research design. A causal comparative design is typically used when a study involves an examination of “the relationship between one or more categorical independent variables and one or more quantitative dependent variables” (Johnson & Christensen, 2017, p. 43). Therefore, because a comparison of groups in terms of the enrollment numbers and percentages of underrepresented students enrolled in a master's degree program were analyzed over time, a causal comparative approach was the appropriate method of inquiry. Such a research design is typically used in educational research (Mertler & Vennatta, 2010). An archival dataset was obtained from the Texas Higher Education Coordinating Board's Interactive Accountability website. Data included the number of master's degrees earned by White, Hispanic, and Black students in the State of Texas for the 1999-2000 academic year through the 2018-2019 academic year. Data for this study included only public, 4-year colleges and universities that documented and reported

race/ethnicity and graduate degree information to the Texas Higher Education Coordinating Board. More specifically, the study involved downloading independent variable information on academic years and race/ethnicity and dependent variable information on the numbers and percentages of master's degrees awarded to the three aforementioned racial/ethnic groups.

### **Participants and Instrumentation**

Participants in this study were 4-year public colleges and universities in the State of Texas that reported race/ethnicity information and master's degree attainment to the Texas Higher Education Coordinating Board. The data were accessed online through the Texas Higher Education Coordinating Board's Interactive Accountability system for the 1999-2000 academic year through the 2018-2019 academic year. This system is used to highlight the priorities of Texas' higher education, to assess the effectiveness of Texas postsecondary institutions, and to evaluate institutional data for purposes of improving both student and institutional outcomes. Excluded from this study were data from private colleges and universities, community colleges, technical institutions, and health-related institutions.

### **Results**

The dependent variables in this study were the numbers and percentages of master's degrees awarded, and the independent variables were race/ethnicity and individual academic years. Because the Texas Higher Education Coordinating Board combines these variables, the appropriate inferential statistical procedures to use were paired samples *t*-tests. A check of the underlying assumptions of this statistical procedure revealed that the majority of them were met (Slate & Rojas-LeBouef, 2011).

Accordingly, paired sample *t*-tests were used to answer the inferential research questions presented earlier. The results for each of the seven research questions will be reported separately.

### **Results for Research Question One**

The first research question in this study was “What are the numbers of master’s degrees awarded to White students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?” To answer this question, descriptive statistics were calculated. As presented in Table 2.1, the number of master’s degrees awarded to White students from the 1999-2000 academic year through the 2018-2019 academic year steadily increased from a total of 10,032 in the 1999-2000 academic year to a total of 16,286 in the 2018-2019 academic year. The only exceptions to this steady increase were the number of master’s degrees awarded to White students in the 2013-2014 and 2014-2015 academic years that decreased to 14,985 and 14,866, respectively. Overall, the average number of master’s degrees awarded by Texas universities to White students ranged from 300 to 400, demonstrating that Texas universities increased their average output of White students who obtained master’s degrees between the 1999-2000 and 2018-2019 academic years by 62.34%.

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Insert Table 2.1 about here  
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### **Results for Research Question Two**

To answer the second research question, “What are the numbers of master’s degrees awarded to Hispanic students at public postsecondary institutions in Texas from



the 1999-2000 academic year through the 2018-2019 academic year?"; descriptive statistics were calculated. As delineated in Table 2.2, the number of master's degrees awarded to Hispanic students increased from the 1999-2000 academic year through the 2018-2019 academic year. A total of 2,058 master's degrees were awarded to Hispanic students in the 1999-2000 academic year, which progressively increased to 4,349 in the 2009-2010 academic year, a midpoint in the years of interest in this study. By the 2018-2019 academic year, the number of master's degrees awarded to Hispanic students had increased to 8,389, an increase of 307.63%. As revealed in Table 2.2, the average number (*M*) of master's degrees awarded to Hispanic students by Texas universities increased from 64 to 227.

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Insert Table 2.2 about here  
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### **Results for Research Question Three**

The third research question in this study was, "What are the numbers of master's degrees awarded to Black students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?" To answer this question, descriptive statistics were calculated. As revealed in Table 2.3, the number of master's degrees awarded to Black students progressively increased for each academic year. In the 1999-2000 academic year, 1,182 master's degrees were awarded, a number that increased to 2,661 in the 2009-2010 academic year. By the 2018-2019 academic year, 4,202 master's degrees had been awarded to Black students by Texas universities, which represented an increase of 255.50%. Regarding the average number (*M*) of

master's degrees awarded to Black students from 1999-2000 through the 2018-2019 academic years, increased from approximately 37 to 117.

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Insert Table 2.3 about here  
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#### **Results for Research Question Four**

The fourth research question in this study was, “What is the difference in the percentage of master’s degrees awarded to White students at public postsecondary institutions in Texas from the 1999-2000 through the 2018-2019 academic year? To answer this question, a paired samples *t*-test was performed and yielded a statistically significant difference,  $t(27) = 10.29$ ,  $p < .001$ , Cohen’s  $d = 0.80$ . The effect size for this difference was large (Cohen, 1988). The percentage of master’s degrees awarded to White students in the 2018-2019 academic year was statistically significantly lower than the percentages of master’s degrees awarded to White students in the 1999-2000 academic year. Slightly more than 70% of the master’s degrees in the 1999-2000 academic year were awarded to White students. In comparison, just over 50% of the master’s degree in the most recent academic year, 2018-2019, were awarded to White students. Descriptive statistics for this analysis are delineated in Table 2.4.

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Insert Table 2.4 about here  
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### **Results for Research Question Five**

To answer the fifth research question, “What is the difference in the percentage of master’s degrees awarded to Hispanic students from the 1999-2000 academic year through the 2018-2019 academic year?”, a paired samples *t*-test was calculated and yielded a statistically significant difference,  $t(27) = -9.70$ ,  $p < .001$ , Cohen’s  $d = 0.65$ . The effect size for this difference was moderate (Cohen, 1988). The percentage of master’s degrees awarded to Hispanic students in the 2018-2019 academic year was statistically significantly higher than the percentage of master’s degrees awarded to Hispanic students in the 1999-2000 academic year. As revealed in Table 2.4, only 19.21% of master’s degrees were awarded to Hispanic students in the 1999-2000 academic year—a percentage that increased to 30.51% in the 2018-2019 academic year.

### **Results for Research Question Six**

Regarding the sixth research question, “What is the difference in the percentage of master’s degrees awarded to Black students from the 1999-2000 academic year through the 2018-2019 academic year?”, a paired samples *t*-test was performed and revealed the presence of a statistically significant difference,  $t(27) = -6.74$ ,  $p < .001$ , Cohen’s  $d = 0.21$ . The effect size for this difference was small (Cohen, 1988). The percentage of master’s degrees awarded to Black students was statistically significantly higher in the 2018-2019 academic year than in the 1999-2000 academic year. Slightly over 10% of master’s degrees were awarded to Black students in 1999-2000. This percentage increased to just over 18% in the 2018-2019 academic year. Descriptive statistics for this analysis are delineated in Table 2.4.

### **Results for Research Question Seven**

The seventh research question was “What is the trend in the percentages of master’s degrees awarded to White, Hispanic, and Black students at public postsecondary institutions in Texas between the 1999-2000 academic year and the 2018-2019 academic year?”. As depicted in Figure 2.1, the percentage of master’s degrees awarded to White students steadily decreased between the 1999-2000 and 2018-2019 academic years. Slightly over 70% of master’s degrees were awarded to White students in the 1999-2000 academic year—a percentage that decreased to just over 51% in the 2018-2019 academic year. However, unlike the trend in the percentages of master’s degrees awarded to White students, the percentage of master’s degrees awarded to Hispanic students gradually increased between the 1999-2000 and 2018-2019 academic years. In the 1999-2000 academic year, 19.21 % of master’s degrees were awarded to Hispanic students. This percentage increased to 30.51% in the 2018-2019 academic year, representing a total increase of 11.30% between the 1999-2000 academic year and the 2018-2019 academic year. The trend in the percentages of master’s degrees awarded to Black students was similar to the trend for Hispanic students. In the 1999-2000 academic year, 10.61% of master’s degrees were awarded to Black students, this percentage increased to 18.19% in the 2018-2019 academic year, for a total increase of nearly 8%. Overall, the percentage of master’s degrees awarded to White students at public postsecondary institutions in Texas decreased, whereas the number of doctoral degrees awarded to Hispanic and Black students increased between the 1999-2000 academic year and the 2018-2019 academic year.

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Insert Figure 2.1 about here  
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### **Discussion**

In this multiyear statewide investigation, master's degree attainment as a function of race/ethnicity in Texas postsecondary institutions was examined within the framework of two Texas education and diversity initiatives—*Closing the Gaps by 2015* and *60x30TX*. For 20 academic years (i.e., 1999-2000 through 2018-2019), White students were awarded higher numbers of master's degrees than were awarded to Hispanic and Black students. All three racial/ethnic groups of students were awarded higher numbers of master's degrees in the 2018-2019 academic year than in the 1999-2000 academic year. The number of master's degrees awarded to White, Hispanic, and Black students increased by 6,254, 6,331, and 3,020 respectively from the 1999-2000 through the 2018-2019 academic years.

Regarding inferential analyses over time, statistically significant differences were present for the percentages of master's degrees awarded to all three ethnic/racial groups between the 1999-2000 academic year and the 2018-2019 academic year. The percentage of master's degrees awarded to White students in the 2018-2019 academic year was statistically significantly lower than the percentage of master's degrees awarded in the 1999-2000 year, this percentage decreased by nearly 20%. This decrease was not the case regarding the percentage of master's degrees awarded to Hispanic students and to Black students between the 1999-2000 and 2018-2019 academic years. The percentage of master's degrees awarded to Hispanic students increased by 11.30%

between the 1999-2000 and 2018-2019 academic years. The percentage of master's degrees awarded to Black students during this time period increased by 7.58%.

Accordingly, the percentage of underrepresented students who received master's degrees in Texas increased over time.

### **Connections with Existing Literature**

The results of this multiyear, statewide investigation regarding the number and percentage of master's degrees awarded by Texas postsecondary institution to White, Hispanic, and Black students were congruent with Franklin's (2013) findings from her investigation regarding the extent to which progress had been made during the State of Texas' initiative *Closing the Gaps by 2015*. The overall results of the current study were consistent with Franklin's (2013) results from 2000 through 2011, the time period examined by Franklin (2013). Franklin (2013) documented an increase in the number of master's degrees awarded to White, Hispanic, and Black students between 2000-2011, increases that were also documented in the present study. Similarly, Franklin (2013) established that the percentage of master's degrees awarded to White students decreased, whereas the percentage of master's degrees awarded to Hispanic and to Black students increased from 2000 to 2011. In sum, Franklin (2013) documented that White students were awarded the highest percentage of master's degrees during the 12-year time period (i.e., 2000-2011) and that the percentage of master's degrees awarded to Hispanic and Black students steadily increased between 2000 and 2011. These findings were consistent with the findings of the current study from the 2000-2001 through the 2010-2011 academic years, indicating statistically significant disparity in the attainment of

master's degrees by Hispanic and Black students when compared to their White counterparts.

### **Implications for Policy and for Practice**

Several implications for policy and for practice can be made from the results of this investigation. With respect to implications for policy, because substantial disparity exists in the completion rates for master's degree programs by underrepresented racial/ethnic students, it is imperative that Texas policymakers examine the efficacy of past and current education initiatives to inform future initiatives and policies. For example, the goals of the *Closing the Gaps by 2015* initiative were targeted primarily toward the undergraduate student population and this population's attainment of an associate or bachelor degree and/or completion of a certification program. This initiative, except for a benchmark for doctoral degree attainment, did not include any directives for the attainment of master's and/or professional degrees by any specific racial/ethnic group.

Unlike the *Closing the Gaps by 2015* plan, the succeeding education initiative, the *60x30TX* plan, was created by policymakers who acknowledged the demographic trends regarding the increasingly diverse population in Texas as well as in Texas postsecondary institutions. These policymakers also included goals in the plan addressing completion rates that target Texans from all backgrounds, including students who are Hispanic or Black as well as students who are socioeconomically disadvantaged. Additionally, the plan addresses completion rates for certification programs as well as for bachelor, master's, doctoral, and professional degree programs. Regarding implications for policy, the *60x30TX* initiative has already provided the foundation for policies designed to increase completion rates for the underrepresented racial/ethnic student population up to

the year 2030. Moreover, although the *60x30TX* plan is a statewide initiative, the plan is written in broad language that allows policymakers in postsecondary institutions the latitude to be creative and innovative in establishing their own policies that are designed to achieve the goals of the *60x30TX* plan. Policymakers in the State of Texas can monitor closely the progress, or the lack of progress, toward achieving the goals of the *60x30TX* plan and to alter or create policies accordingly. For example, these policies, to name a few, might involve identifying or reallocating funding and other resources in ways that promote completion rates, developing partnerships both inside and outside the venue of higher education, establishing a K-12 pipeline that serves as a bridge into higher education at both the undergraduate and graduate level, and establishing student support services.

With respect to implications for practice, simply creating policies is not enough. If the State of Texas is to be successful in procuring an educated population and workforce, these policies must be put into practice and will require substantial collaborative efforts between policymakers, stakeholders, business leaders, community leaders, state agencies, administrators, faculty, staff, and practitioners at all levels of education. These parties must commit to monitoring, analyzing, and assessing trends to determine which policies are or are not effective and to respond accordingly. Progress towards the realization of the goals as set forth in the *60x30TX* initiative demands that individuals in the aforementioned groups work closely together to ensure that Texans receive the quality education that is required to ensure the economic well-being of Texas and to the ability of the State to remain competitive in the global marketplace.



### **Recommendations for Future Research**

Considering the findings of the current study, several recommendations for future research can be made. First, because the current study only included data on the numbers and percentages of master's degrees awarded to White, Hispanic, and Black students in the State of Texas, future researchers are encouraged to examine the numbers and percentages of doctoral degrees awarded by Texas postsecondary institutions as a function of race/ethnicity. Second, researchers in the future are encouraged to investigate the numbers and percentages of professional degrees awarded by Texas colleges and universities to White, Hispanic, and Black students over time. Third, future researchers might consider examining the numbers and percentages of master's, doctoral, and professional degrees awarded over time in a state other than Texas or to conduct a nationwide investigation. Fourth, given the paucity of published research on the attainment of advanced degrees by underrepresented groups, future research investigations might expand on the current study by incorporating additional demographic information beyond race/ethnicity to include first-generation and socioeconomic data.

### **Conclusion**

In this multiyear statewide investigation, master's degree attainment as a function of race/ethnicity in Texas postsecondary institutions was examined. Specifically, the purpose of this study was to determine the degree to which changes had occurred in the numbers and percentages of master's degrees awarded to White, Hispanic, and Black students from the 1999-2000 through the 2018-2019 academic years. Also ascertained was the extent to which trends were present in the percentages of master's degrees

awarded to the aforementioned racial/ethnic groups from the 1999-2000 academic year through the 2018-2019 academic year.

Statistical analyses revealed that, although White students were consistently awarded a higher number of master's degrees than were awarded to Hispanic and Black students, all three ethnic/racial groups were awarded more master's degrees in the 2018-2019 academic year than in the 1999-2000 academic year. Statistically significant differences were present for the percentages of master's degrees awarded to White, Hispanic, and Black students over this time period. The percentage of master's degrees awarded to White students decreased and the percentage of master's degrees awarded to Hispanic and Black students increased. Nevertheless, statistically significant disparities were established in the attainment of master's degrees by Hispanic and Black students in the State of Texas, despite the directives of the *Closing the Gaps by 2015* and the *60x30TX* initiatives.

Posited herein is that leaders in higher education have an obligation and a commission to pursue and secure the resources necessary to promote a substantive and equitable representation of underrepresented racial/ethnic students in graduate degree programs. Leaders in higher education should hold themselves accountable for facilitating difficult but productive conversations around race/ethnicity and for advocating for the implementation of policies, procedures, and services that are designed to establish equity and inclusivity in their colleges and universities.

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Table 2.1  
*Descriptive Statistics for the Number of Master's Degrees Awarded to White Students  
 Between the 1999-2000 and 2018-2019 Academic Years*

Academic Year	<i>n</i> of universities	Sum	<i>M</i>	<i>SD</i>
1999-2000	32	10,032	313.50	335.88
2000-2001	33	10,489	317.85	333.48
2001-2002	33	10,415	315.61	326.41
2002-2003	34	10,790	317.35	331.54
2003-2004	35	11,701	334.31	356.82
2004-2005	36	12,605	360.14	386.41
2005-2006	35	12,603	360.09	374.16
2006-2007	35	12,514	357.54	386.49
2007-2008	35	12,705	363.00	391.08
2008-2009	35	13,840	395.43	407.61
2009-2010	37	14,455	390.68	448.79
2010-2011	37	14,802	400.05	427.27
2011-2012	37	15,473	418.19	456.48
2012-2013	37	15,664	423.35	453.94
2013-2014	38	14,985	394.34	420.63
2014-2015	38	14,866	391.21	414.90
2015-2016	37	15,182	410.32	423.57
2016-2017	37	15,248	412.11	428.15
2017-2018	37	15,874	429.03	455.24
2018-2019	32	16,286	440.16	443.91



Table 2.2  
*Descriptive Statistics for the Number of Master's Degrees Awarded to Hispanic Students  
 Between the 1999-2000 and 2018-2019 Academic Years*

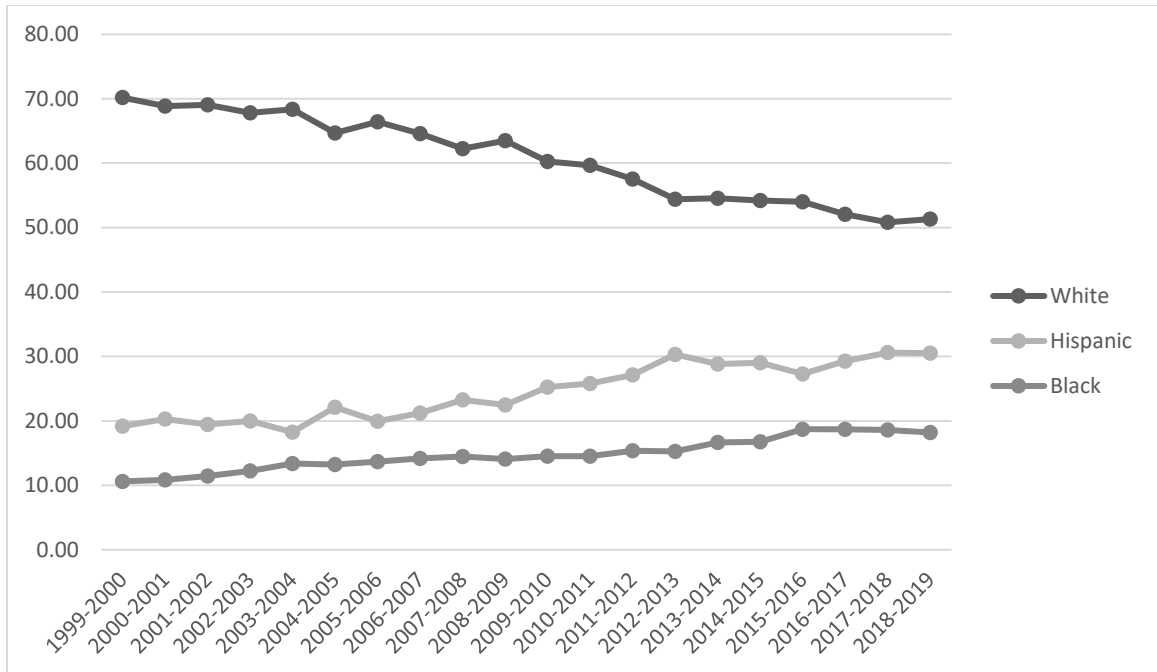
Academic Year	<i>n</i> of universities	Sum	<i>M</i>	<i>SD</i>
1999-2000	32	2,058	64.31	68.80
2000-2001	33	2,109	63.91	67.38
2001-2002	32	2,324	72.63	77.77
2002-2003	34	2,482	73.00	77.15
2003-2004	35	2,857	81.63	95.96
2004-2005	35	3,249	92.83	106.21
2005-2006	34	3,264	96.00	111.41
2006-2007	35	3,514	100.40	115.77
2007-2008	34	3,503	103.03	115.82
2008-2009	35	4,110	117.43	124.53
2009-2010	36	4,349	120.81	128.26
2010-2011	37	4,906	132.59	147.06
2011-2012	36	5,268	146.33	151.48
2012-2013	36	5,618	156.06	149.49
2013-2014	38	5,688	149.68	141.99
2014-2015	38	6,330	166.58	169.09
2015-2016	37	6,298	170.22	189.83
2016-2017	36	6,916	192.11	185.08
2017-2018	37	7,578	204.81	201.07
2018-2019	37	8,389	226.73	213.49

Table 2.3  
*Descriptive Statistics for the Number of Master's Degrees Awarded to Black Students  
 Between the 1999-2000 and 2018-2019 Academic Years*

Academic Year	<i>n</i> of universities	Sum	<i>M</i>	<i>SD</i>
1999-2000	32	1182	36.94	58.60
2000-2001	32	1208	37.75	58.47
2001-2002	31	1282	41.35	60.85
2002-2003	32	1440	45.00	69.29
2003-2004	30	1815	60.50	101.66
2004-2005	33	1960	59.39	99.24
2005-2006	32	2156	67.38	108.45
2006-2007	32	2185	68.28	114.74
2007-2008	33	2485	75.30	119.83
2008-2009	32	2540	79.38	111.24
2009-2010	36	2661	73.92	94.68
2010-2011	36	2902	80.61	100.40
2011-2012	35	3079	87.97	103.87
2012-2013	36	3489	96.92	115.44
2013-2014	36	3409	94.69	109.37
2014-2015	37	3412	92.22	102.56
2015-2016	35	3608	103.09	99.95
2016-2017	36	3895	108.19	114.17
2017-2018	35	4151	118.60	126.95
2018-2019	36	4202	116.72	122.03

Table 2.4  
*Descriptive Statistics for the Percentages of Master's Degrees Awarded to White, Hispanic, and Black Students Between the 1999-2000 and 2018-2019 Academic Years*

Academic Year	White%	Hispanic%	Black%
1999-2000	70.18	19.21	10.61
2000-2001	68.87	20.28	10.85
2001-2002	69.08	19.46	11.46
2002-2003	67.81	19.96	12.23
2003-2004	68.36	18.25	13.39
2004-2005	64.67	22.10	13.23
2005-2006	66.41	19.93	13.66
2006-2007	64.61	21.21	14.18
2007-2008	62.25	23.26	14.49
2008-2009	63.49	22.45	14.06
2009-2010	60.25	25.25	14.50
2010-2011	59.69	25.78	14.53
2011-2012	57.52	27.12	15.35
2012-2013	54.40	30.33	15.27
2013-2014	54.55	28.82	16.63
2014-2015	54.22	29.01	16.77
2015-2016	53.99	27.30	18.71
2016-2017	52.06	29.27	18.67
2017-2018	50.82	30.59	18.59
2018-2019	51.30	30.51	18.19



*Figure 2.1.* Percentages of master's degrees awarded to White, Hispanic, and Black students between the 1999-2000 and 2018-2019 academic years.

**CHAPTER III**

DIFFERENCES IN DOCTORAL DEGREE ATTAINMENT AS A FUNCTION OF

RACE/ETHNICITY: A TEXAS, MULTIYEAR STATEWIDE ANALYSIS

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This dissertation follows the style and format of *Research in the Schools (RITS)*.

### **Abstract**

In this multiyear, statewide investigation, the degree to which changes had occurred in the numbers and percentages of doctoral degrees awarded to White, Hispanic, and Black students in Texas public postsecondary institutions from the 1999-2000 academic year through the 2018-2019 academic year was examined. The highest numbers of doctoral degrees were awarded to White students, followed by Hispanic students and Black students, respectively. Statistically significant differences were present for the percentages of doctoral degrees awarded to Hispanic and to Black students between the 1999-2000 academic year and the 2018-2019 academic year. The percentage of doctoral degrees awarded to White students decreased by nearly 21%, whereas the percentage of master's degrees awarded to Hispanic students and to Black students increased by 11.07% and 9.39%, respectively. As such, the ethnic/racial diversity of doctoral degree recipients increased over the academic years of data analyzed herein.

*Keywords:* Graduate degree, Advanced degree, Doctoral degree, Doctorate, Underrepresented minorities, Race/ethnicity,

DIFFERENCES IN DOCTORAL DEGREE ATTAINMENT AS A FUNCTION OF  
RACE/ETHNICITY: A TEXAS, MULTIYEAR, STATEWIDE ANALYSIS

From a historical perspective, a graduate education in the United States has traditionally played a substantial role in producing an educated workforce, promoting successful employment, establishing financial stability, furthering and sustaining a healthy economy, and remaining competitive in the global marketplace (Adhikari, 2017; Altbach, Gumport & Berdahl; Franklin, 2013; Franklin & Slate, 2012; Holley & Gardner, 2012; Koc, 2013; National Science Foundation, 2018; Okahana, Klein, Allum, & Sowell, 2018; Wendler et al., 2010; Wendler et al., 2012). Indeed, “the global competitiveness of the US and capacity for innovation hinges fundamentally on a strong system of graduate education” (Wendler et al., 2010, p. 1). Undeniably, individuals who pursue and obtain a doctoral degree gain knowledge, experience, and skill sets that are critical to the nation’s progress in terms of generating new knowledge, discovering new scientific methods, establishing effective leadership, furthering influential research, fostering revolutionary innovations, and solving the complex problems currently facing the nation and the world (Koc 2013; National Science Foundation, 2018; Wendler et al., 2010; Wendler et al., 2012). These individuals work in all areas at the state and national level, including government, technology, science, business, engineering, industry, and academia (Litalien, Guay, & Morin, 2015; National Science Foundation, 2018; Wendler et al., 2010; Wendler et al., 2012). As noted by Wendler et al. (2012), “the link between graduate education and American prosperity has never been stronger than it is today” (p. 1).

From 2010-2020, Wendler et al. (2012) estimated that 2.6 million jobs would require an advanced degree. Specifically predicted was that the number of jobs requiring

a doctorate or professional degree would increase by 20% (Wendler et al., 2012). These estimates may be interpreted to mean that an advanced degree is not an option but a requirement for certain occupations—occupations where a graduate education is typically associated with higher salaries (Koc, 2013; Melguizo & Wolniak, 2012; Pedersen, 2015; Wendler et al., 2012; Xu, 2013). Indeed, the expected lifetime earnings for someone with a doctoral degree is \$3 million, compared to \$2.7 million with a master’s degree and \$2.3 million with a bachelor’s degree (Wendler et al., 2012).

Of particular concern in terms of societal advancement, the economy, and in remaining competitive at both the national and global level is a diverse doctoral-trained workforce, particularly in the fields of science, technology, engineering, and mathematics (STEM) as well as in the professoriate (Dika & D’Amico, 2016; Griffin & Muniz, 2011; Holley & Gardner, 2012; Okahana, et al., 2018; Smith, Turner, Osei-Kofi, & Richards, 2016; Sowell, Allum, & Okahana, 2015). Indeed, Holley and Gardner (2012) made the following observation regarding the importance of doctoral degree attainment as well as the importance of diversity in doctoral programs:

Over the past 20 years, increased attention has been directed toward doctoral degree attainment. This attention is in part attributable to the central role that the degree plays in the higher education system. Doctoral programs train future scholars, who in turn construct a variety of academic, research, and other professional careers. Given the importance of the degree to the country’s scientific ambitions and economic security, concern has been expressed over the lack of student diversity in doctoral programs. (p. 112)



A stated national priority in the United States is to promote diversity in doctoral programs in the previously mentioned fields as well as in the overall general workforce (Ebersole, 2010; Griffin & Muniz, 2011; Holley & Gardner, 2012; Okahana & Zhou, 2019; Sowell et al., 2015). Important to note is that the priority of diversity is also present in postsecondary education. The likelihood that contemporary colleges and universities will become institutions where underrepresented students, particularly racial/ethnic minority students, are engaged at the doctoral level is increased if postsecondary institutions employ a diverse faculty (Millett & Nettles, 2006). However, this requirement presents a conundrum in that for an ethnically/racially diverse faculty to exist, an ethnically/racially diverse student population must first enroll in and complete doctoral programs (Millett & Nettles, 2006). Moreover, “doctoral education is the training ground for the professoriate, and homogeneity in this population calls our ability to meet the needs of our increasingly diverse student body into question” (Griffin & Muniz, 2011, p. 57).

Although the enrollment of underrepresented students in doctoral programs in STEM and other fields has increased over the past decade, the enrollment of underrepresented students in doctoral programs has been substantially lower than that of their White counterparts (Espinosa, Turk, Taylor, & Chessman, 2019; Griffin & Muniz, 2011; Okahana et al., 2018; Sowell et al., 2015). Despite efforts to diversify the student population in higher education, substantial disparities are present between the enrollment of White students and underrepresented students in STEM and in non-STEM doctoral programs (Holley & Gardner, 2012; Griffin & Muniz, 2011; Okahana et al., 2018; Sowell et al., 2015). Not surprisingly, the low enrollment of underrepresented students in

doctoral programs is directly related to low degree completion rates in undergraduate and master's programs.

In the 2016-2017 academic year, 107,445 doctoral degrees were awarded to White students, whereas only 12,493 were awarded to Hispanic students, and 14,027 doctoral degrees were awarded to Black students (National Center of Education Statistics, 2018). These national statistics are reflected in postsecondary institutions in Texas, the state of interest in this study. In Texas, 3,341 doctoral degrees were awarded to White students, whereas only 1,113 doctoral degrees were awarded to Hispanic students and 514 doctoral degrees were awarded to Black students (Texas Higher Education Accountability System, 2018).

Recognizing the near absence of research studies on underrepresented students in advanced degree programs, Franklin (2013) focused on *Closing the Gaps by 2015*, a statewide Texas education and diversity initiative. Franklin (2013) investigated the number and percentage of master's, doctoral, and professional degrees awarded by public 4-year postsecondary institutions in the State of Texas from the 2000 through the 2011 academic years. For purposes of this article, only Franklin's (2013) analysis of the number and percentage of doctoral degrees awarded will be addressed.

Franklin (2013) determined that from the 2000 academic year through the 2011 academic year, a total of 29,335 doctoral degrees were awarded by Texas 4-year postsecondary institutions to White, Hispanic, and Black students. White students obtained the highest number of doctoral degrees throughout the 12-year time period. Specifically, in 2000, 1,193 doctoral degrees were awarded to White students—a number that slightly increased to 1,341 in 2011. The number of doctoral degrees awarded to

Hispanic students increased from 121 in 2000 to 243 in 2011. Similarly, the number of doctoral degrees awarded to Black students increased from 84 in 2000 to 192 in 2011.

Although the number of doctoral degrees awarded steadily increased for White, Hispanic, and Black students from 2000 to 2011, the percentage of doctoral degrees conferred fluctuated for all three groups from 2000 to 2011. Specifically, White students earned the highest percentage of doctoral degrees during the 12-year period as well as in each individual year, followed by Hispanic and Black students, respectively. White students were awarded 57.41% of doctoral degrees in 2000—a percentage that climbed to 61.19% in 2001 but then steadily declined to 43.81% in 2011. The percentage of doctoral degrees awarded to Hispanic students increased from 5.82% in 2000 to 7.94% in 2011. Similarly, the percentage of doctoral degrees awarded to Black students grew from 4.04% in 2000 to 6.27% in 2011. In short, Franklin (2013) concluded that the percentage of doctoral degrees conferred by Texas 4-year public colleges and universities increased for White, Hispanic, and Black students from 2000 to 2011. However, the percentage of doctoral degrees awarded to White students decreased from 2000 to 2011, whereas the percentage of doctoral degrees conferred increased for Hispanic and Black students.

Regarding the percentage change over time for each group, the percentage of doctoral degrees conferred decreased for White students, whereas the percentage of doctoral degrees awarded increased for Hispanic students and for Black students. Specifically, White students were awarded 13.6% fewer doctoral degrees from 2000 to 2011, whereas Hispanic students were awarded 2.12% more doctoral degrees from 2000 to 2011, and Black students were awarded 2.23% more doctoral degrees from 2000-2011.

Several reasons have been given for the disparities in the ethnic/racial composition of students enrolled in doctoral degree programs, one of which is overall acceptance rates into doctoral programs. In 2018, only 23.5% of applicants were accepted into doctoral programs in the United States (Okahana & Zhou, 2019). Another source of disparity in doctoral education is the previously mentioned high rate of attrition—an occurrence that is multidimensional and multifaceted in nature (Gardner, 2009). According to Gittings, Bergman, Shuck, and Rose (2018), approximately 40% to 60% of all doctoral students do not persist to graduation. Moreover, underrepresented racial/ethnic minorities who pursue a doctoral education have higher attrition rates and lower degree-completion rates than their White peers (Sowell et al., 2015). Additional causes of attrition include, imposter syndrome, parental level of education, family obligations, age, lack of interaction with faculty mentors, employment issues, and financial resources (Bergman, Gross, Berry, & Shuck, 2014; Gittings et al., 2018; Litalien et al., 2015; Martinsuo & Turkulainen, 2011; Rockinson-Szapkiw, 2019). Further, the Council of Graduate Schools (n.d.) identified six sources of attrition related to institutional and doctoral program characteristics, including selection, mentoring, financial support, program environment, research mode of the field, and processes and procedures.

### **Statement of the Problem**

Increases in the ethnic/racial diversity of the United States population are reflected in the undergraduate student populations of Texas postsecondary institutions. However, unlike the undergraduate student population, which mirrors more closely the diversity of the nation's population, substantial racial/ethnic disparities exist in the

graduate student population, particularly at the doctoral level (Ebersole, 2010; Griffin & Muniz, 2011; Holley & Gardner, 2012; Okahana & Zhou, 2019; Sowell et al., 2015).

This state of affairs is problematic when considering the urgency of producing a heterogeneous, doctoral-trained workforce—a workforce comprised of diverse individuals who have the knowledge, critical thinking skills, and problem solving abilities that are needed in the 21st century’s knowledge economy (Wendler et al., 2010; Wendler et al, 2012). As noted by Wendler et al. (2010),

. . . graduate education goes beyond just providing students with advanced knowledge and skills—it also further develops critical thinking skills and produces innovators. It is the application of knowledge and skills in creative and innovative ways that will help ensure our country’s future economic prosperity, influence social growth, and maintain our leadership position in the global economy. (p. 1)

### **Purpose of the Study**

The overall purpose of this study was to determine the degree to which changes had occurred in the numbers of doctoral degrees awarded to White, Hispanic, and Black students in Texas public postsecondary institutions from the 1999-2000 academic year through the 2018-2019 academic year. Also ascertained were the percentages of doctoral degrees awarded to White, Hispanic, and Black students during the same time frame. Specifically, analyses were conducted from the 1999-2000 academic year through the 2018-2019 academic year to determine whether statistically significant changes had occurred in the numbers and percentages of master’s degrees awarded to White, Hispanic, and Black students. The final purpose involved ascertaining the extent to

which trends were present in both the numbers and percentages of doctoral degrees awarded to White, Hispanic, and Black students in Texas for the 1999-2000 through the 2018-2019 academic years.

### **Significance of the Study**

Procuring a diverse doctoral-trained workforce, particularly in STEM fields and in the professoriate, is of paramount importance to the economic health and standing of the United States in the global community. Toward this end, the Texas Higher Education Coordinating Board implemented two education initiatives in the State of Texas. The first was *Closing the Gaps by 2015*, which was in operation from 2000 through 2015. The purpose of this initiative was to close the gaps in education in terms of participation, success, excellence, and research (Texas Higher Education Data, 2015). The second initiative was the *60x30TX* plan, which was put into practice in the 2015-2016 academic year and which will continue through the 2029-2030 academic year. The overall goal of this plan is to ensure that 60% of students between the ages of 25 to 34 earn a certificate or degree by 2030, graduate with identifiable marketable skills, and obtain employment where student loan debt does not exceed 60% of first-year wages (Texas Higher Education Coordinating Board, 2015).

Given the urgency of promoting and sustaining a diverse and doctoral-educated workforce, the implementation of the aforementioned initiatives is both judicious and relevant. However, simply creating initiatives and implementing them is not sufficient. These initiatives must be examined to ascertain the attained levels of success and equity as they relate to underrepresented students' completion of advanced degree and doctoral degree programs. The results of such an examination would provide essential

information to legislators, administrators, graduate program recruiters, and to other educational leaders tasked with making critical decisions with far-reaching implications at all levels of education (Franklin, 2013). Yet, a review of the literature yielded few published research studies where the researchers investigated underrepresented students' attainment of a doctoral degree. Moreover, in the State of Texas, only one study has been conducted (Franklin, 2013) who examined the success of the state's education and diversity initiatives by investigating the attainment of advanced degrees as a function of race/ethnicity.

Because few researchers have explored the effectiveness of education and diversity initiatives both on a national level and on a state level, specifically in Texas, little evidence exists regarding the effectiveness of these initiatives. The significance of this study resides, in part, in a contribution to the limited literature on diversity and equity in graduate education. More specifically, this study will serve as an update to Franklin's (2013) study on *Closing the Gaps by 2015*. In her study, Franklin addressed diversity and equity in graduate education from 2000 to 2011. In this article, the data that will be analyzed will include all 15 years of *Closing the Gaps by 2015* initiative (1999-2000 through 2014-2015) as well as data for the *60x30TX* plan from the 2015-2016 through 2018-2019 academic years. An investigation of the participation of underrepresented students in Texas doctoral programs over the past 19 years will encapsulate more fully any disparities that might be present in terms of a doctoral level education.

### **Research Questions**

The following research questions were addressed in this study: (a) What are the numbers of doctoral degrees awarded to White students at public postsecondary

institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?; (b) What are the numbers of doctoral degrees awarded to Hispanic students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?; (c) What are the numbers of doctoral degrees awarded to Black students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?; (d) What is the difference in the percentage of doctoral degrees awarded to White students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?; (e) What is the difference in the percentage of doctoral degrees awarded to Hispanic students from the 1999-2000 academic year through the 2018-2019 academic year?; (f) What is the difference in the percentage of doctoral degrees awarded to Black students from the 1999-2000 academic year through the 2018-2019 academic year?; and (g) What is the trend in the percentages of doctoral degrees awarded to White, Hispanic, and Black students at public postsecondary institutions in Texas between the 1999-2000 academic year and the 2018-2019 academic year?

## **Method**

### **Research Design**

A non-experimental, causal comparative research design was used for this study. This type of design is appropriate when a study involves an examination of “the relationship between one or more categorical independent variables and one or more quantitative dependent variables” (Johnson & Christensen, 2017, p. 43). In this study, the independent variables were academic years and race/ethnicity, and the dependent variables were the numbers and percentages of degrees awarded. The enrollment



numbers and percentages of White, Hispanic, and Black students enrolled in doctoral degree programs in the State of Texas were analyzed for the 1999-2000 academic year through the 2018-2019 academic year. An archival dataset was obtained from the Texas Higher Education Coordinating Board's Interactive Accountability website and included only public, 4-year colleges and universities that documented and reported race/ethnicity and doctoral degree information to the Texas Higher Education Coordinating Board.

### **Participants and Instrumentation**

Participants in this study included only public colleges and universities in the State of Texas that reported race/ethnicity data and doctoral degree data to the Texas Higher Education Coordinating Board. This information was retrieved online from the Texas Higher Education Coordinating Board Interactive Accountability system. The purpose of this system is to highlight educational priorities in the State of Texas, to measure the effectiveness of Texas' colleges and universities, and to evaluate data to improve outcomes in the state's postsecondary institutions.

### **Results**

The dependent variables in this study were the number and percentage of doctoral degrees awarded, and the independent variables were race/ethnicity and individual academic years. Because the Texas Higher Education Coordinating Board combines these variables, the appropriate inferential statistical procedures to use were paired samples *t*-tests. A check of the underlying assumptions of this statistical procedure revealed that the majority of these assumptions were met (Slate & Rojas-LeBouef, 2011). Accordingly, paired sample *t*-tests were used to answer the inferential research questions

presented earlier. The results for each of the seven research questions will be reported separately.

### **Results for Research Question One**

The first research question in this study was “What are the numbers of doctoral degrees awarded to White students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?” To answer this question, descriptive statistics were calculated. As presented in Table 3.1, the number of doctoral degrees awarded to White students fluctuated throughout the 1999-2000 and 2018-2019 time period. The number of doctoral degrees awarded ranged from a low of 1,034 in the 2003-2004 academic year to a high of 1,532 for the 2014-2015 academic year. The average number of doctoral degrees awarded by Texas universities to White students increased from 1,193 in the 1999-2000 academic year to 1,141 in the 2018-2019 academic year. Overall, an increase of 18.52% was observed in the number of doctoral degrees awarded the White students by Texas universities.

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Insert Table 3.1 about here  
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### **Results for Research Question Two**

To answer the second research question, “What are the numbers of doctoral degrees awarded to Hispanic students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?”; descriptive statistics were calculated. As delineated in Table 3.2, the number of doctoral degrees awarded to Hispanic students increased from 121 in the 1999-2000 academic year to 320

in the 2018-2019 academic year. Regarding the years in between 1999-2000 and 2018-2019 the number of doctoral degrees awarded fluctuated from a low of 101 in 2000-2001 to high of 388 in 2016-2017. Similarly, as presented in Table 3.2, the average number of doctoral degrees awarded by Texas universities to Hispanic students ranged from approximately 7 to 19. Overall, the percentage of doctoral degrees awarded to Hispanic students increased by 164.46% between the 1999-2000 and 2018-2019 academic years.

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Insert Table 3.2 about here  
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### **Results for Research Question Three**

The third research question in this study was, “What are the numbers of doctoral degrees awarded to Black students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?” To answer this question, descriptive statistics were calculated. As revealed in Table 3.3, the number of doctoral degrees awarded to Black students increased from 84 in the 1999-2000 academic year to 277 in the 2018-2019 academic year. The fewest number of doctoral degrees awarded was 77 in 2003-2004 and the highest was 289 in 2015-2016. Overall, the average number of doctoral degrees awarded by Texas universities to Black students ranged from approximately 6 to 13. Regarding the percentage of degrees awarded, a 229.76% increase was observed from the 1999-2000 academic year to the 2018-2019 academic year.

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Insert Table 3.3 about here  
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#### **Results for Research Question Four**

To answer the fourth research question, “What is the difference in the percentage of doctoral degrees awarded to White students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?”, a paired samples *t*-test was calculated. For this research question, a statistically significant difference at the conventional level was not revealed in the percentages of doctoral degrees awarded to White students between the 1999-2000 academic year and the 2018-2019 academic years,  $t(16) = -1.89, p = .07$ . The result approached at .07 but did not reach the conventional level of .05. The percentage of doctoral degrees awarded to White students in the 1999-2000 academic year was 74.75% and decreased to 54.30% in the 2018-2019 academic year. Descriptive statistics for this analysis are presented in Table 3.4.

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Insert Table 3.4 about here  
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#### **Results for Research Question Five**

The fifth research question in this study was “What is the difference in the percentage of doctoral degrees awarded to Hispanic students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?” To answer this question, a paired samples *t*-test was performed. A statistically

significant difference was yielded in the percentages of doctoral degrees awarded to Hispanic students between the 1999-2000 academic year and the 2018-2019 academic year,  $t(12) = -4.76$ ,  $p < .001$ , Cohen's  $d = 0.72$ . The effect size for this difference was moderate (Cohen, 1988). As presented in Table 3.4, 11.95% of doctoral degrees were awarded to Hispanic students in the 1999-2000 academic year compared to 23.02% that were awarded in the 2018-2019 academic year. As such, the percentage of doctoral degrees that were awarded to Hispanic students almost doubled in this time period.

### **Results for Research Question Six**

Regarding the sixth research question, “What is the difference in the percentage of doctoral degrees awarded to Black students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?”, a paired samples  $t$ -test was calculated. For this research question, a statistically significant difference was yielded in the percentages of doctoral degrees awarded to Black students between the 1999-2000 academic year and the 2018-2019 academic year,  $t(10) = -2.64$ ,  $p = .02$ , Cohen's  $d = 0.97$ . The effect size for this difference was large (Cohen, 1988). In the 1999-2000 academic year, 13.29% of doctoral degrees were awarded to Black students. This percentage increased to 22.68% in the 2018-2019 academic year. Accordingly, the percentage of doctoral degrees awarded to Black students more than doubled (i.e. 71%) during this time period. Descriptive statistics for this analysis are presented in Table 3.4.

### **Results for Research Question Seven**

The seventh research question was “What is the trend in the percentages of doctoral degrees awarded to White, Hispanic, and Black students at public postsecondary

institutions in Texas between the 1999-2000 academic year and the 2018-2019 academic year?”. As depicted in Figure 3.1, the percentage of doctoral degrees awarded to White students in the 1999-2000 academic year was 74.75%. This percentage increased to 88.19% in the 2000-2001 academic year and was the highest percentage of doctoral degrees awarded to White students between the 1999-2000 and 2018-2019 academic years. This percentage slightly fluctuated and decreased to 54.30% in the 2018-2019 academic year. Regarding the percentages of doctoral degrees awarded to Hispanic students, 11.95% were awarded in the 1999-2000 academic year. This percentage increased to 23.02% in the 2018-2019 academic year, representing a total increase of 11.07% between the 199-2000 and 2018-2019 academic years. Similar to the percentage of doctoral degrees awarded to Hispanic students between the 1999-2000 and 2018-2019 academic years, the percentage of doctoral degrees awarded to Black students also increased during the same time period. In the 1999-2000 academic year, 13.29% of doctoral degrees were awarded to Black students. Although this percentage decreased by nearly 7% between the 2000-2001 and 2004-2005 academic years and continued to fluctuate over the remaining years of interest, by the 2018-2019 academic year the percentage of doctoral degrees awarded to Black students had increased to 22.68%. Overall, the percentage of doctoral degrees awarded to White students decreased by 20.45%, whereas the percentage of doctoral degrees awarded to Hispanic students increased by 11.07%, and the percentage of doctoral degrees awarded to Black students increased by 9.39%.

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Insert Figure 3.1 about here  
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### **Discussion**

In this multiyear, statewide investigation, doctoral degree attainment as a function of race/ethnicity in Texas postsecondary institutions was examined within the context of two education and diversity initiatives that were implemented by the Texas Higher Education Coordinating Board—*Closing the Gaps by 2015* and *60x30TX*. During the 20 year period of interest in the current study (i.e., 1999-2000 through 2018-2019), White students were consistently awarded higher numbers of doctoral degrees than were awarded to Hispanic and Black students. Moreover, Hispanic students were consistently awarded higher number of doctoral degrees than were awarded to Black students from the 1999-2000 academic year through the 2018-2019 academic year. All three racial/ethnic groups were awarded higher numbers of doctoral degrees in the 2018-2019 academic year than in the 1999-2000 academic year. The number of doctoral degrees awarded to White students increased by 221, the number of doctoral degrees awarded to Hispanic students increased by 199, and the number of doctoral degrees awarded to Black students increased by 193.

In reference to inferential analyses over time, a statistically significant difference was not revealed in the percentage of doctoral degrees awarded to White students between the 1999-2000 and 2018-2019 academic years. However, statistically significant differences were present in the percentage of doctoral degrees awarded to Hispanic students and to Black students between the 1999-2000 and 2018-2019 academic years.

The percentage of doctoral degrees awarded to Hispanic students increased by 11.07%, and the percentage of doctoral degrees awarded to Black students increased by 9.39%. Correspondingly, the percentage of underrepresented students who were awarded doctoral degrees by Texas colleges and universities increased over time.

### **Connections with Existing Literature**

The overall results of the current study were congruent with Franklin's (2013) findings regarding the extent to which advancement had occurred in the number of doctoral degrees awarded to White, Hispanic, and Black students from the 1999-2000 academic year through the 2010-2011 academic year—a time period encompassed by the State of Texas' education initiative, *Closing the Gaps by 2015*. Franklin (2013) documented that the number of doctoral degrees awarded to White students was consistently higher than the number of doctoral degrees awarded to Hispanic students and to Black students between the 1999-2000 and 2010-2011 academic years. Regarding the percentage of change over time for each racial/ethnic group, Franklin (2013) determined that the percentage of doctoral degrees conferred decreased for White students, whereas the percentage of doctoral degrees awarded increased for Hispanic students and for Black students. The results of this study were consistent with the findings of Franklin's (2013) study.

### **Implications for Policy and Practice**

Based upon the findings of this multiyear, statewide investigation, several implications for policy and practice can be made. Because White students have disproportionately been awarded higher numbers and percentages of doctoral degrees than the number and percentages of doctoral degrees awarded to Hispanic and Black



students, an urgency exists for policymakers in the State of Texas to scrutinize judicially the effectiveness of the state's past initiative, *Closing the Gaps by 2015*, as well as any progress that might have been made thus far in the state's current initiative, *60x30TX*. When compared to the *Closing the Gaps by 2015* initiative, policymakers involved in the creation of the *60x30TX* plan included more benchmarks regarding the level of degrees earned to include certificates, associate's, master's, doctoral, and professional degrees as well as targets for degrees earned by racial/ethnic groups. Nevertheless, considerable disparities continue to exist at the doctoral degree level. Fortunately, given the broad language of the *60x30TX* initiative, policymakers have a degree of freedom to be inventive in developing and implementing policies designed to increase doctoral degree completion rates for underrepresented racial/ethnic groups. Policymakers are encouraged to assess carefully the degree to which progress has or has not been made toward achieving the targets included in the *60x30TX* plan and to take advantage of the freedom they have to be innovative when creating and implementing policies that include directives specifically aimed at increasing the numbers and percentages of doctoral degrees awarded to underrepresented racial/ethnic students.

Some areas where policymakers might find opportunities to develop policies designed to ensure the success of the *60x30TX* initiative include establishing partnerships between leaders in postsecondary institutions, leaders in the K-12 system, and leaders in the community; assessing funding resources; allocating or reallocating funds; and collaborating with administrators, faculty, and staff in a way that establishes a clear pathway that leads students through a primary education, to a secondary education, to a postsecondary education, and, ultimately to a graduate education. However, simply

developing policies is insufficient. Perhaps the greatest challenge will come when attempts are made to implement these policies in a way that is meaningful and that will make a substantial difference in the quality of education that Texans receive. Achieving this objective will demand that policymakers, state agencies, stakeholders, leaders in education, leaders in the community, and practitioners in all education-related areas collaborate with one another. These parties must also commit to developing, implementing, and practicing policies that not only facilitate the provision of a quality education but to ensure the presence of equity in the Texas educational system. It is only with a workforce comprised of diverse individuals who are highly educated that the State of Texas will succeed in sustaining economic health and global competitiveness.

### **Recommendations for Future Research**

Based on the results of this multiyear, statewide investigation, several recommendations for future research can be made regarding the numbers and percentages of doctoral degrees awarded to White, Hispanic, and Black students in the State of Texas. First, the focus of the present study was only on the numbers and percentages of doctoral degrees awarded. Future researchers are encouraged to investigate the numbers and percentages of professional degrees awarded to underrepresented racial/ethnic students to include degrees in medicine, osteopathic medicine, dentistry, veterinary medicine, and pharmaceutical medicine. Second, research on the numbers and percentages of professional degrees awarded to underrepresented racial/ethnic students could be extended by examining the numbers and percentages of professional degrees awarded over time. Third, researchers in the future might consider investigating the numbers and percentages of professional degrees awarded to underrepresented racial/ethnic students in

a state other than Texas or to conduct a nationwide study. Fourth, future researchers are encouraged to expand on the current study by including demographic data such as first-generation and socioeconomic status as well as gender.

### **Conclusion**

The purpose of this study was to ascertain the extent to which changes had occurred in the numbers and percentages of doctoral degrees that were awarded to White, Hispanic, and Black students by Texas postsecondary institutions from the 1999-2000 academic year to the 2018-2019 academic year. Also examined was the degree to which trends were present in the numbers and percentages of doctoral degrees awarded to the aforementioned racial/ethnic groups. Statistical analysis revealed that statistically significant differences were present in the percentages of doctoral degrees awarded to Hispanic students and to Black students from Texas postsecondary institutions between the 1999-2000 academic year and the 2018-2019 academic year. For both Hispanic and Black students, the percentage of doctoral degrees awarded increased from 1999-2000 to 2018-2019. Yet, although it appears that progress has been made during the initial years of the *60x30TX* initiative, considerable disparity remains in the numbers and percentages of doctoral degrees awarded to Hispanic and Black students when compared to their White counterparts. Leaders in higher education must intensify their efforts to further decrease this disparity through policy and practice and through establishing partnerships and collaborating with individuals in the K-12 system, stakeholders, community leaders, business leaders, and practitioners.

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Table 3.1  
*Descriptive Statistics for the Number of Doctoral Degrees Awarded to White Students  
 Between the 1999-2000 and 2018-2019 Academic Years*

Academic Year	<i>n</i> of universities	Sum	<i>M</i>	<i>SD</i>
1999-2000	18	1193	66.28	100.57
2000-2001	17	1285	75.59	117.38
2001-2002	19	1120	58.95	91.36
2002-2003	18	1096	60.89	93.44
2003-2004	17	1034	60.82	89.38
2004-2005	20	1070	53.50	89.85
2005-2006	18	1124	62.44	90.80
2006-2007	22	1212	55.09	85.62
2007-2008	22	1246	56.64	91.22
2008-2009	21	1214	57.81	88.90
2009-2010	23	1316	57.22	94.94
2010-2011	23	1341	58.30	90.46
2011-2012	26	1374	52.85	88.90
2012-2013	23	1468	63.83	98.28
2013-2014	24	1503	62.63	97.44
2014-2015	23	1532	66.61	98.73
2015-2016	24	1503	62.63	93.80
2016-2017	23	1450	63.04	87.61
2017-2018	24	1451	63.09	87.64
2018-2019	13	1414	58.92	85.97

Table 3.2  
*Descriptive Statistics for the Number of Doctoral Degrees Awarded to Hispanic Students  
 Between the 1999-2000 and 2018-2019 Academic Years*

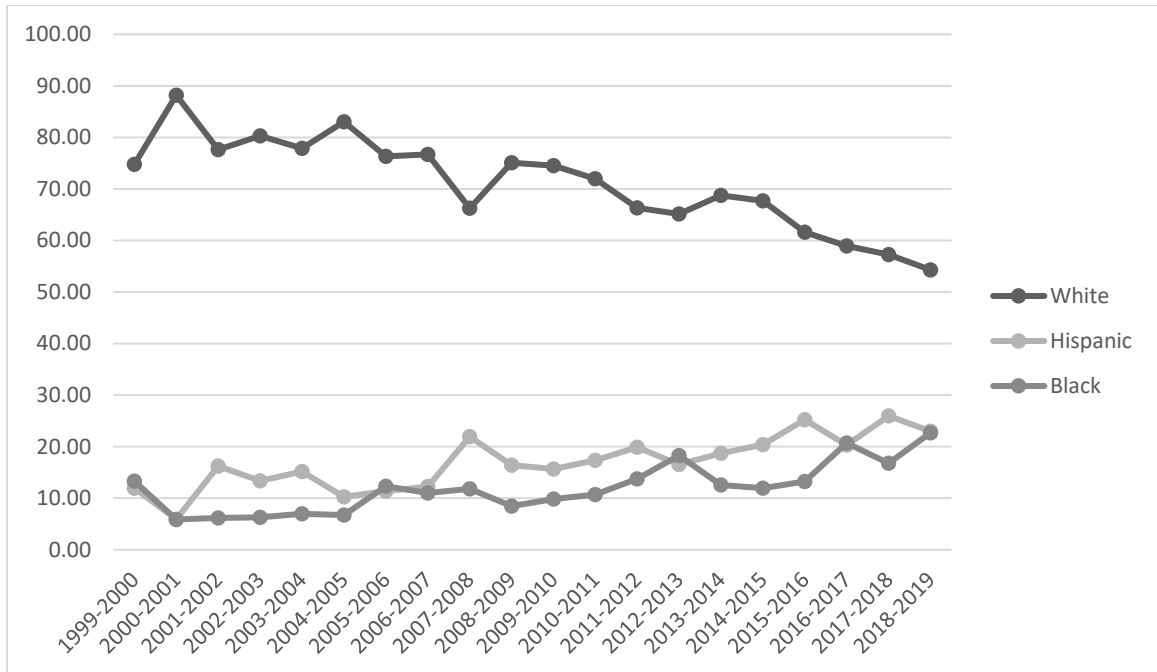
Academic Year	<i>n</i> of universities	Sum	<i>M</i>	<i>SD</i>
1999-2000	15	121	8.07	13.27
2000-2001	14	101	7.21	8.96
2001-2002	16	118	7.38	9.06
2002-2003	14	114	8.14	9.01
2003-2004	15	106	7.07	7.84
2004-2005	16	141	8.81	11.40
2005-2006	16	160	10.00	13.55
2006-2007	17	174	10.24	10.36
2007-2008	15	207	13.80	14.76
2008-2009	15	183	12.20	11.13
2009-2010	19	211	11.11	12.93
2010-2011	21	243	11.57	14.25
2011-2012	21	287	13.67	15.48
2012-2013	22	322	14.64	17.74
2013-2014	20	281	14.05	14.74
2014-2015	22	374	17.00	18.03
2015-2016	19	353	18.58	16.28
2016-2017	21	388	18.48	20.24
2017-2018	20	350	17.50	17.31
2018-2019	22	320	14.55	14.49

Table 3.3  
*Descriptive Statistics for the Number of Doctoral Degrees Awarded to Black Students  
 Between the 1999-2000 and 2018-2019 Academic Years*

Academic Year	<i>n</i> of universities	Sum	<i>M</i>	<i>SD</i>
1999-2000	11	84	7.64	8.090
2000-2001	10	83	8.30	8.420
2001-2002	13	80	6.15	6.656
2002-2003	12	69	5.75	4.975
2003-2004	14	77	5.50	6.248
2004-2005	14	85	6.07	7.590
2005-2006	15	86	5.73	6.193
2006-2007	16	131	8.19	10.901
2007-2008	18	119	6.61	7.429
2008-2009	17	145	8.53	6.875
2009-2010	17	138	8.12	6.284
2010-2011	21	195	9.29	10.640
2011-2012	22	196	8.91	10.132
2012-2013	21	208	9.90	9.674
2013-2014	22	238	10.82	10.178
2014-2015	20	234	11.70	9.274
2015-2016	22	289	13.14	10.877
2016-2017	22	293	13.32	11.35
2017-2018	23	287	12.48	9.02
2018-2019	23	277	12.04	9.80

Table 3.4  
*Descriptive Statistics for the Percentages of Doctoral Degrees Awarded to White, Hispanic, and Black Students Between the 1999-2000 and 2018-2019 Academic Years*

Academic Year	White%	Hispanic%	Black%
1999-2000	74.75	11.95	13.29
2000-2001	88.19	05.94	05.87
2001-2002	77.60	16.25	06.15
2002-2003	80.30	13.38	06.32
2003-2004	77.90	15.15	06.96
2004-2005	83.05	10.25	06.70
2005-2006	76.33	11.35	12.32
2006-2007	76.71	12.28	11.01
2007-2008	66.27	21.92	11.80
2008-2009	75.08	16.43	08.49
2009-2010	74.51	15.65	09.84
2010-2011	71.98	17.34	10.68
2011-2012	66.35	19.89	13.76
2012-2013	65.17	16.55	18.28
2013-2014	68.74	18.73	12.53
2014-2015	67.70	20.38	11.92
2015-2016	61.58	25.20	13.23
2016-2017	58.95	20.34	20.71
2017-2018	57.25	25.96	16.79
2018-2019	54.30	23.02	22.68



*Figure 3.1.* Percentages of doctoral degrees awarded to White, Hispanic, and Black students between the 1999-2000 and 2018-2019 academic years.

**CHAPTER IV****DIFFERENCES IN PROFESSIONAL DEGREE ATTAINMENT AS A FUNCTION OF  
RACE/ETHNICITY: A TEXAS, MULTIYEAR STATEWIDE ANALYSIS**

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This dissertation follows the style and format of *Research in the Schools (RITS)*.

### **Abstract**

In this multiyear, statewide investigation, the degree to which changes had occurred in the numbers and percentages of professional degrees awarded to White, Hispanic, and Black students in Texas public postsecondary institutions from the 1999-2000 academic year through the 2018-2019 academic year was examined. Throughout this 20-year period, White students were consistently awarded higher numbers of professional degrees than were awarded to Hispanic and Black students. Fewer professional degrees were awarded to White students in the 2018-2019 academic year than in the 1999-2000 academic year. In contrast, Hispanic and Black students were awarded a higher number of professional degrees in 2018-2019 than in 1999-2000. Regarding inferential analyses over time, a statistically significant difference was not present in the percentage of professional degrees awarded to White students or in the percentage of professional degrees awarded to Black students between the 1999-2000 and 2018-2019 academic years. However, a statistically significant difference was revealed in the percentage of professional degrees awarded to Hispanic students. The percentage of professional degrees awarded to Hispanic students increased by 13.65% between the 1999-2000 and the 2018-2019 academic years.

*Keywords:* Professional degree attainment, Professional education, Discipline specific degree, Underrepresented minorities, Race/ethnicity,

DIFFERENCES IN PROFESSIONAL DEGREE ATTAINMENT AS A FUNCTION OF  
RACE/ETHNICITY: A TEXAS, MULTIYEAR, STATEWIDE ANALYSIS

A graduate education has become increasingly important in terms of employment, financial stability, economic health, and in remaining competitive in the global marketplace. Indeed, graduate degree programs prepare individuals to “teach in our schools and universities, drive innovation, attract intellectual and commercial investment, and strengthen American prestige and economic power” (Wendler et al., 2010, preface). According to Wendler et al. (2012), from 2010 to 2020, 2.6 million jobs would require a graduate degree and occupations requiring a doctoral or professional degree would increase by 20%. Further predicted was that the majority of all new occupations from 2010-2020 would be in the professional and service sectors (Wendler et al., 2010). Some of these occupations require a professional degree—an advanced degree that is different from a master’s or doctoral degree. A professional degree can be defined as “discipline specific, including, but not limited to, degrees such as Dentistry (DDS or DMD), Medicine (MD), Osteopathic Medicine (DO), Veterinary Medicine (DVM), Law (LLB, JD), Optometry (OD), [and] Pharmacy (PharmD)” (Texas Higher Education Coordinating Board, 2017, p. 32).

The aforementioned professional degrees typically involve extensive study in one or more areas of science, technology, engineering, and mathematics—fields commonly referred to by those individuals in the academic community as STEM fields. The importance of a graduate educated workforce in STEM areas has been emphasized by several researchers. These researchers have also noted that to realize projected labor demands, the workforce of the future must be educated in STEM areas (Dika &



D'Amico, 2016; Griffin & Muniz, 2011; Holley & Gardner, 2012; Jones et al., 2018; Okahana et al., 2018; Sowell, Allum, & Okahana, 2015; Smith, Turner, Osei-Kofi, & Richards, 2016). Indeed, according to Jones et al. (2018),

. . . science, technology, engineering, and mathematics (STEM) underpin the government's ability to defend the nation and to assure the vitality of the economy. STEM jobs are the fastest growing occupational category and, by 2020, 65% of all jobs in the U.S. will require a post-secondary degree with STEM literacy skills. (p. 40)

Along with the increasing importance of a graduate education, particularly in professional degree STEM fields, is the importance of promoting and sustaining racial/ethnic diversity in graduate degree programs as well as in the workforce. However, although an increasing number of underrepresented students in higher education has been documented, these students still remain underrepresented in postsecondary institutions across the nation (American Council on Education, 2019). Similarly, the American Council on Education (2019) noted that, in Fall 2018, 24.1% of the graduate student population belonged to underrepresented groups. Although this percentage reflects an increase in underrepresented graduate students, this population continues to remain substantially underrepresented (American Council on Education, 2019).

Identifying the paucity of research on underrepresented students in advanced degree programs, Franklin (2013) investigated an education and diversity initiative implemented in the State of Texas known as *Closing the Gaps by 2015*. Franklin (2013) focused on the numbers and percentages of advanced degrees awarded to White,

Hispanic, and Black students by postsecondary institutions in the State of Texas from the 2000 through the 2011 academic years. Although Franklin (2013) analyzed master's, doctoral, and professional degree attainment, for purposes of this article, only professional degree attainment will be discussed.

Franklin (2013) documented that from the 2000 academic year through the 2011 academic year, a total of 20,579 professional degrees were awarded to White, Hispanic, and Black students by Texas 4-year postsecondary institutions. White students were awarded the highest number of professional degrees for each individual year from 2000 to 2011. The number of degrees awarded to White students fluctuated throughout the 12-year period, ranging from a low of 951 in 2007 to a high of 1,182 in 2005. The number of professional degrees awarded to Hispanic students increased steadily from 2000 to 2011, climbing from a low of 153 in 2000 to a high of 253 in 2011. Similar to the number of professional degrees awarded to White students, the number of professional degrees awarded to Black students fluctuated throughout the 2000-2011 academic years. The fewest professional degrees ( $n = 172$ ) were awarded to Black students in 2000 and the most professional degrees ( $n = 226$ ) were awarded in 2003.

Regarding the percentage of professional degrees awarded to White, Hispanic and Black students from 2000 to 2011, White students earned the highest percentage of professional degrees throughout the 12-year period from 2000-2011, as well as in each individual academic year. The percentage of professional degrees awarded to White students fluctuated throughout the 12-year period, with the highest percentage awarded in 2000 (66.42%) and the lowest percentage awarded in 2011 (55.80%). The percentage of professional degrees awarded to Hispanic students and to Black students also varied

throughout the 2000 and 2011 academic years. Hispanic students earned the lowest percentage of professional degrees in 2002 (9.46%) and the highest percentage in 2011 (14.10%). Overall, with the exception of the percentage of degrees awarded in 2002, a steady increase was observed in the percentage of professional degrees awarded to Hispanic students from 2000 through 2011. Similar to the percentage of professional degrees awarded to White and Hispanic students, the number of degrees awarded to Black students fluctuated from 2000 through 2011, with the lowest percentage awarded in 2010 (10.18%) and the highest awarded in 2003 (13.64%).

### **Statement of the Problem**

Over the past two decades, the demographics of the population in the United States have been transformed to reflect an increasingly diverse, racial/ethnic population. This transformation is reflected in the student population of postsecondary institutions across the nation, particularly at the undergraduate level. However, at the graduate level, substantial inequities exist in terms of racial/ethnic diversity in relation to educational attainment. Moreover, the majority of research studies on racial/ethnic diversity in postsecondary education has been conducted by researchers who have focused on the undergraduate student population. Only a few empirical research investigations have been conducted by researchers on the experiences of underrepresented students and educational attainment at the graduate level. The lack of research in this area is problematic when considering the increasing importance of a diverse and educated workforce—a workforce with a graduate education. Indeed, researchers have determined that a graduate education is becoming progressively necessary in terms of securing employment, increasing earning potential, promoting a healthy economy, and in

remaining competitive in a global marketplace (Koc, 2013; Perna, 2015; Wendler et al., 2010; Wendler et al., 2012). The lack of scholarly research studies on diversity and race/ethnicity in relation to advanced degree attainment becomes even more problematic when considering the multifaceted ways in which a diverse graduate student population could potentially inform a diverse workforce. As noted by the American Council on Education (2019),

Racial and ethnic diversity comes with a host of benefits at all levels of education and in the workforce—greater productivity, innovation, and cultural competency, to name a few. Moreover, the current and future health of our nation—economic and otherwise—requires that the whole of our population have equitable access to sources of opportunity. (p. 3)

### **Purpose of the Study**

The overall purpose of this study was to determine the degree to which changes might have occurred in the numbers of professional degrees awarded to White, Hispanic, and Black students in Texas public postsecondary institutions over an 8-year period, which includes two education initiatives in the State of Texas, *Closing the Gaps by 2015* and *60x30TX*. Specifically addressed were the numbers of professional degrees awarded to White, Hispanic, and Black students in Texas public postsecondary institutions over a 19-year period. Also ascertained were the percentages of professional degrees awarded to White, Hispanic, and Black students in each of the five academic years. Analyses were conducted between the 2001-2001 academic year and the 2018-2019 academic year to determine whether statistically significant changes have occurred in the numbers and percentages of professional degrees obtained by White, Hispanic, and Black students.

The final purposes involved ascertaining the extent to which trends were present in both the numbers and percentages of professional degrees awarded to White, Hispanic, and Black students in Texas for the 2011-2012 through the 2018-2019 academic years.

### **Significance of the Study**

The significance of this study is fourfold. First, although the increase in a diverse, racial/ethnic population in the United States is reflected in postsecondary institutions at the undergraduate level, substantial disparity exists at the graduate level—particularly in terms of racial/ethnic diversity in relation to educational attainment. Second, the preponderance of research on racial/ethnic diversity has been conducted by researchers who investigate these concepts as they relate to an undergraduate education. However, few researchers have explored how race/ethnicity and diversity inform education in advanced degree programs at the national level or at the state level, particularly in the State of Texas. Currently, only one researcher has conducted an investigation of Texas' statewide initiative, *Closing the Gaps by 2015*, which involved an analysis of the number and percentage of professional degrees awarded as a function of race/ethnicity from 2000 through 2011. Thus, thirdly, the significance of this study largely resides in serving as an update to Franklin's (2013) research by examining underrepresented student completion rates for professional degrees during the 20 academic years of the *Closing the Gap by 2015* initiative as well as for the *60x30TX* plan from 2015-2016 through the 2018-2019 academic years. This information might prove advantageous to those individuals who are tasked with creating and implementing educational and diversity initiatives and to those involved in decision-making processes related to higher education. Finally, this study will

contribute to the relatively limited body of research and literature on underrepresented students' attainment of professional degrees.

### **Research Questions**

The following research questions were addressed in this study: (a) What are the numbers of professional degrees awarded to White students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?; (b) What are the numbers of professional degrees awarded to Hispanic students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?; (c) What are the numbers of professional degrees awarded to Black students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?; (d) What is the difference in the percentage of professional degrees awarded to White students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?; (e) What is the difference in the percentage of professional degrees awarded to Hispanic students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?; (f) What is the difference in the percentage of professional degrees awarded to Black students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?; and (g) What is the trend in the percentages of professional degrees awarded to White, Hispanic, and Black students at public postsecondary institutions in Texas between the 1999-2000 academic year and the 2018-2019 academic year?

## **Method**

### **Research Design**

A non-experimental, causal comparative research design was used for this empirical investigation. According to Johnson and Christensen (2017), this type of research design is appropriate when a study involves an examination of “the relationship between one or more categorical independent variables and one or more quantitative dependent variables” (p. 43). In this study, the independent variables were academic years and race/ethnicity, and the dependent variables were enrollment numbers and percentages. Archival data for these variables were downloaded from the Texas Higher Education Coordinating Board Interactive Accountability website. Specifically, data included the numbers and percentages of professional degrees awarded to White, Hispanic, and Black students in the State of Texas for the 1999-2000 academic year through the 2018-2019 academic year.

### **Participants**

Participants for this study included only public, 4-year postsecondary institutions in the State of Texas that reported race/ethnicity and professional degree information to the Texas Higher Education Coordinating Board. Data from private postsecondary institutions, community colleges, technical institutions, and health-related institutions were not included in this study. For this study, an archival dataset was retrieved from the Texas Higher Education Coordinating Board Interactive Accountability system—a system designed to monitor the effectiveness of postsecondary institutions in Texas and to generate data that is used to improve educational outcomes.

## Results

The dependent variables in this study were the numbers and percentages of professional degrees awarded, and the independent variables were race/ethnicity and individual academic years. Because the Texas Higher Education Coordinating Board combines these variables, the appropriate inferential statistical procedures to use were paired samples *t*-tests. A check of the underlying assumptions of this statistical procedure revealed that the majority of them were met (Slate & Rojas-LeBouef, 2011). Accordingly, paired sample *t*-tests were used to answer the inferential research questions presented earlier. The results for each of the seven research questions will be reported separately.

### Results for Research Question One

The first research question in this study was “What are the numbers of professional degrees awarded to White students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?” To answer this question, descriptive statistics were calculated. As revealed in Table 4.1, the number of degrees awarded between 1999-2000 and 2018-2019 fluctuated throughout this time period. The fewest number of degrees awarded was 871 in the 2017-2018 academic year, and the highest number of degrees awarded was 1,091 in the 2013-2014 academic year. The average number of professional degrees awarded at Texas universities ranged from 73 to 203. Regarding the overall percentage of degrees, an increase of 88% was observed in the number of professional degrees awarded to White students from Texas universities.



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Insert Table 4.1 about here  
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### **Results for Research Question Two**

To answer the second research question, “What are the numbers of professional degrees awarded to Hispanic students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?”; descriptive statistics were calculated. As delineated in Table 4.2, the number of professional degrees awarded to Hispanic students steadily increased from the 1999-2000 academic year through the 2018-2019 academic year. A total of 153 professional degrees were awarded to Hispanic students in the 1999-2000 academic year, which progressively increased to 303 in the 2018-2019, representing a 198% increase in the number of professional degrees awarded to Hispanic students. Additionally, as revealed in Table 4.2, the average number of professional degrees awarded to Hispanic students by Texas universities increased from 64 to 227.

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Insert Table 4.2 about here  
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### **Results for Research Question Three**

The third research question in this study was, “What are the numbers of professional degrees awarded to Black students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?” To answer this question, descriptive statistics were calculated. As revealed in Table 4.3, the

number of master's degrees awarded to Black students increased from 139 in 1999-2000 to 213 in 2018-2019. The fewest degrees awarded was 139 in the 1999-2000 academic year and the highest number of degrees awarded was 233 in the 2017-2018 academic year. The average number of professional degrees awarded ranged from 18 to 56. Overall, a 153% increase was documented in the numbers of professional degrees awarded to Black students during the academic years of data that were analyzed.

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Insert Table 4.3 about here  
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#### **Results for Research Question Four**

Regarding the fourth research question, “What is the difference in the percentage of professional degrees awarded to White students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?”, a paired samples *t*-test was performed. This analysis did not yield a statistically significant difference in the percentage of professional degrees awarded to White students between the 1999-2000 academic year and the 2018-2019 academic year,  $t(4) = 1.15, p = .31$ . The percentage of professional degrees awarded to White students was 69.26% in the 1999-2000 academic year compared to 59.63% in the 2018-2019 academic year. Descriptive statistics for this analysis are presented in Table 4.4.

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Insert Table 4.4 about here  
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### **Results for Research Question Five**

To answer the fifth research question, “What is the difference in the percentage of professional degrees awarded to Hispanic students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?”, a paired samples *t*-test was calculated. A statistically significant difference was present in the percentage of professional degrees awarded to Hispanic students between the 1999-2000 academic year and the 2018-2019 academic year,  $t(4) = -4.57, p = .01$ , Cohen’s  $d = 0.93$ . The effect size was large (Cohen, 1988). As delineated in Table 4.4, the percentage of professional degrees awarded to Hispanic students in the 1999-2000 academic year was slightly over 13.52% compared to 27.17% in the 2018-2019 academic year. Accordingly, the percentage of professional degrees awarded to Hispanic students more than doubled during this time period.

### **Results for Research Question Six**

In reference to the sixth research question, “What is the difference in the percentage of professional degrees awarded to Black students at public postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year?”, a paired samples *t*-test was calculated and did not yield a statistically significant difference in the percentage of professional degrees awarded to Black students between the 1999-2000 academic year and the 2018-2019 academic year,  $t(3) = -1.96, p = .14$ . The percentage of professional degrees awarded to Black students was slightly over 17.22% in the 1999-2000 academic year and decreased to 13.20% in the 2018-2019 academic year.

### Results for Research Question Seven

The seventh research question was “What is the trend in the percentages of professional degrees awarded to White, Hispanic, and Black students at public postsecondary institutions in Texas between the 1999-2000 academic year and the 2018-2019 academic year?”. As shown in Figure 4.1, 69.26% of professional degrees were awarded to White students in the 1999-2000 academic year. With the exception of an increase to 69.37% in professional degrees awarded in the 2006-2007 academic year, the percentage fluctuated and decreased to 59.63% in the 2018-2019 academic year. Regarding the percentage of professional degrees awarded to Hispanic students, 13.52% of professional degrees were awarded in the 1999-2000 academic year. This percentage decreased to the lowest percentage of 12.67% in the 2001-2002 academic year but then gradually increased to the highest percentage of 27.17% in the 2018-2019 academic year.

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Insert Figure 4.1 about here  
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The percentage of professional degrees awarded to Black students was 17.22% in the 1999-2000 academic year, which increased to 22.67% in the 2002-2003 academic year, representing the highest percentage of degrees awarded to Black students between 1999-2000 and 2018-2019. However, the percentage of professional degrees awarded to Black students decreased to 13.20% in the 2018-2019 academic year. Overall, although the percentage of professional degrees awarded to White students decreased by nearly 10% between the 1999-2000 and 2018-2019 academic years, the highest percentage of professional degrees were awarded to White students in comparison to the degrees

awarded to Hispanic and to Black students between 1999-2000 and 2018-2019. The percentages of professional degrees awarded to Hispanic and Black students were lower in comparison. Like the percentage of professional degrees awarded to White students, the percentage of professional degrees awarded to Black students also decreased by just over 4% between 1999-2000 and 2018-2019. Hispanic students were the only racial/ethnic group that were awarded a higher percentage of professional degrees in the 2018-2019 academic year than in the 1999-2000 academic year; 13.52% of professional degrees were awarded to Hispanic students in 1999-2000, a percentage that increased by 13.65% in 2018-2019.

### **Discussion**

In this multiyear, statewide study, professional degree attainment as a function of race/ethnicity in Texas postsecondary institutions was examined from the 1999-2000 academic year through the 2018-2019 academic year in relation to two education initiatives implemented by the Texas Higher Education Coordinating Board. The first initiative, *Closing the Gaps by 2015*, was in operation from 2000-2015. The second initiative, *60x30TX*, was implemented in 2015 and will extend through 2030. Throughout the 20-year period of interest in the current study, White students were consistently awarded higher numbers of professional degrees than were awarded to Hispanic and Black students. However, fewer professional degrees were awarded to White students in the 2018-2019 academic year than in the 1999-2000 academic year. In contrast, Hispanic and Black students were awarded a higher number of professional degrees in 2018-2019 than in 1999-2000.

Regarding inferential analyses over time, a statistically significant difference was not present in the percentage of professional degrees awarded to White students or in the percentage of professional degrees awarded to Black students between the 1999-2000 and 2018-2019 academic years. However, a statistically significant difference was yielded in the percentage of professional degrees awarded to Hispanic students. The percentage of professional degrees awarded to Hispanic students increased by 11.07% between the 1999-2000 and the 2018-2019 academic years.

### **Connections with Existing Literature**

The findings of the current study were consistent with Franklin's (2013) findings regarding the extent to which progress had been made in the numbers and percentages of professional degrees awarded to White, Hispanic, and Black students. Overall, Franklin (2013) documented a statistically significant increase in the percentage of professional degrees awarded to Hispanic students between the 1999-2000 academic year and the 2010-2011 academic year. Franklin (2013) further established that statistically significant differences were not present in the percentages of professional degrees awarded to White students and to Black students between 1999-2000 and 2010-2011. These findings are consistent with the results of this study.

### **Implications for Policy and Practice**

Based upon the findings of this multiyear, statewide investigation, some implications for policy and for practice are recommended. First, given the ever-increasing diversity of the Texas population and the subsequent increase in the diversity of the student population in Texas colleges and universities, policymakers are urged to be vigilant in acknowledging this diversity when developing policies. Second, policymakers

need to examine the degree to which past and current education and diversity initiatives have been successful or unsuccessful and to then create and implement policies, accordingly. More specifically, policymakers need to identify factors that are preventing or hindering the success of education and diversity initiatives and develop policies that mitigate those factors. Third, policymakers are encouraged to create policies that include ambitious but attainable benchmarks or targets for professional degree attainment by underrepresented racial/ethnic students. Fourth, policymakers should develop policies that require communication, partnerships, and collaboration between the K-12 sector and the higher education sector. It is largely through these partnerships that policies may be practiced in a manner that promotes the procurement of a viable, highly educated, diverse workforce prepared to stimulate and sustain both a healthy economy and the ability to remain competitive at the national and global level.

### **Recommendations for Future Research**

Based on the findings of the current study, several recommendations for future research can be made. First, the current study was limited to data for professional degree attainment in the State of Texas. Future researchers are encouraged to investigate professional degree attainment by racial/ethnic groups in other states with similar demographics. Second, because data for the current study was limited to public postsecondary institutions, researchers could expand on the current study by examining professional degree attainment as a function of race/ethnicity for private colleges and universities as well. Third, future researchers could expand on the current study by including additional demographic information such as socioeconomic status, first-generation student status, marital status, employment status, and gender. Research that is

aligned with any of the aforementioned recommendations would contribute to a more holistic understanding of the backdrop of a professional degree education as well as to the highly limited body of literature on the completion rates for professional degree programs by underrepresented racial/ethnic students.

### **Conclusion**

The purpose of this study was to determine the extent to which changes had occurred in the numbers and percentages of professional degrees awarded to White, Hispanic, and Black students by public, postsecondary institutions in Texas from the 1999-2000 academic year through the 2018-2019 academic year. A statistically significant difference was not present in the percentage of professional degrees awarded to White students or to Black students between the 1999-2000 and 2018-2019 academic years. A statistically significant difference was revealed in the percentage of professional degrees awarded to Hispanic students between the 1999-2000 and the 2018-2019 academic years. Although some progress has been made in the professional degree completion rate for Hispanic students, the same cannot be said for Black students. The percentage of professional degrees awarded to Black students fluctuated and decreased by 4% between the 1999-2000 and the 2018-2019 academic years. When considering the percentages of professional degrees awarded to White, Hispanic, and Black students, for 20 years, White students were awarded the highest percentage of professional degrees. This observation highlights the continued disparity in professional degree attainment between underrepresented racial/ethnic groups. It is imperative that leaders in K-12, leaders in postsecondary institutions, leaders in the community, stakeholders, and policymakers, commit to intentional and intensified practices specifically designed to



decrease and eliminate the continued disparity not only in professional degree programs but in all advanced degree programs.

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Table 4.1  
*Descriptive Statistics for the Number of Professional Degrees Awarded to White Students  
 Between the 1999-2000 and 2018-2019 Academic Years*

Academic Year	<i>n</i> of universities	Sum	<i>M</i>	<i>SD</i>
1999-2000	5	993	198.60	153.07
2000-2001	5	1016	203.20	159.80
2001-2002	5	1002	200.40	164.53
2002-2003	5	985	197.00	149.26
2003-2004	6	1026	171.00	165.34
2004-2005	6	1182	197.00	186.68
2005-2006	7	1031	147.29	150.50
2006-2007	8	951	118.88	132.97
2007-2008	8	1030	128.75	142.57
2008-2009	9	972	108.00	130.67
2009-2010	9	1011	112.33	114.49
2010-2011	11	1001	91.00	112.63
2011-2012	12	977	81.42	100.54
2012-2013	12	947	78.92	96.77
2013-2014	12	1091	90.92	112.25
2014-2015	12	1026	85.50	105.48
2015-2016	12	985	82.08	104.30
2016-2017	12	961	80.08	94.40
2017-2018	12	871	72.58	85.23
2018-2019	12	875	72.92	87.37

Table 4.2  
*Descriptive Statistics for the Number of Professional Degrees Awarded to Hispanic Students Between the 1999-2000 and 2018-2019 Academic Years*

Academic Year	<i>n</i> of universities	Sum	<i>M</i>	<i>SD</i>
1999-2000	5	153	30.60	19.01
2000-2001	5	181	36.20	20.84
2001-2002	5	157	31.40	21.96
2002-2003	5	176	35.20	27.54
2003-2004	5	177	35.40	23.80
2004-2005	6	203	33.83	32.11
2005-2006	6	236	39.33	36.23
2006-2007	7	236	33.71	35.74
2007-2008	7	224	32.00	36.43
2008-2009	6	242	40.33	38.81
2009-2010	8	233	29.13	31.17
2010-2011	10	253	25.30	29.29
2011-2012	12	247	20.58	28.22
2012-2013	10	269	26.90	28.65
2013-2014	10	283	28.30	25.82
2014-2015	10	275	27.50	28.59
2015-2016	10	288	28.80	26.94
2016-2017	11	286	26.00	24.62
2017-2018	11	288	26.18	24.50
2018-2019	12	303	25.25	25.43

Table 4.3

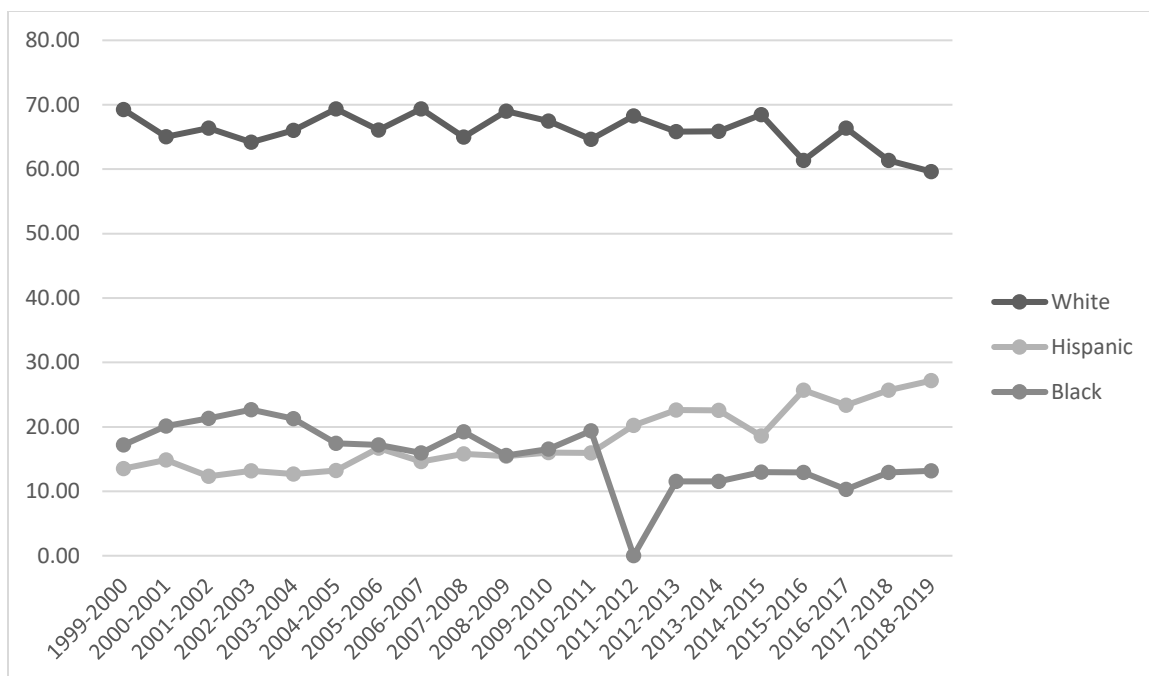
*Descriptive Statistics for the Number of Professional Degrees Awarded to Black Students Between the 1999-2000 and 2018-2019 Academic Years*

Academic Year	<i>n</i> of universities	Sum	<i>M</i>	<i>SD</i>
1999-2000	4	139	34.75	52.12
2000-2001	4	172	43.00	68.79
2001-2002	4	217	54.25	83.00
2002-2003	4	226	56.50	80.64
2003-2004	4	208	52.00	76.92
2004-2005	5	194	38.80	59.04
2005-2006	4	187	46.75	61.90
2006-2007	7	224	32.00	65.29
2007-2008	5	219	43.80	62.17
2008-2009	5	213	42.60	61.06
2009-2010	5	177	35.40	39.53
2010-2011	6	198	33.00	48.12
2011-2012	10	208	20.80	41.74
2012-2013	8	182	22.75	38.19
2013-2014	9	212	23.56	43.48
2014-2015	7	193	27.57	42.79
2015-2016	8	179	22.38	37.13
2016-2017	10	177	17.70	32.60
2017-2018	10	233	23.30	47.27
2018-2019	8	213	26.62	46.71

Table 4.4  
*Descriptive Statistics for the Percentages of Professional Degrees Awarded to White, Hispanic, and Black Students Between the 1999-2000 and 2018-2019 Academic Years*

Academic Year	White%	Hispanic%	Black%
1999-2000	69.26	13.52	17.22
2000-2001	65.04	14.86	20.11
2001-2002	66.36	12.33	21.32
2002-2003	64.17	13.16	22.67
2003-2004	66.04	12.67	21.28
2004-2005	69.33	13.22	17.46
2005-2006	66.07	16.72	17.22
2006-2007	69.37	14.64	15.98
2007-2008	64.96	15.80	19.24
2008-2009	68.99	15.44	15.57
2009-2010	67.45	16.00	16.55
2010-2011	64.65	15.95	19.40
2011-2012	68.26	20.21	11.53
2012-2013	65.85	22.60	11.56
2013-2014	65.87	22.58	11.56
2014-2015	68.46	18.57	12.97
2015-2016	61.34	25.71	12.95
2016-2017	66.36	23.36	10.28
2017-2018	61.37	25.69	12.94
2018-2019	59.63	27.17	13.20





*Figure 4.1.* Percentages of professional degrees awarded to White, Hispanic, and Black students between the 1999-2000 and 2018-2019 academic years.

## **CHAPTER V**

### **DISCUSSION**

The purpose of this journal-ready dissertation was to ascertain the extent to which progress occurred during the State of Texas' *Closing the Gaps by 2015* and the *60x30TX* education initiatives. In particular, the purpose of this dissertation was to determine the degree to which changes were present in the numbers and percentages of advanced degrees awarded by public, 4-year postsecondary institutions in the State of Texas as a function of race/ethnicity. More specifically, the numbers and percentages of master's, doctoral, and professional degrees awarded to White, Hispanic, and Black students from the 1999-2000 academic year through the 2018-2019 academic year were examined to determine whether statistically significant changes had occurred in the number of master's, doctoral, and professional degrees awarded to the aforementioned racial/ethnic groups. Additionally, the purpose of this dissertation was to ascertain the extent to which trends were present in advanced degree attainment by White, Hispanic, and Black students from Texas public, 4-year postsecondary institutions from the 1999-2000 academic year through the 2018-2019 academic year.

#### **Summary of Study One Results**

In the first study, master's degree attainment as a function of race/ethnicity in Texas postsecondary institutions was examined within the framework of two Texas education and diversity initiatives—*Closing the Gaps by 2015* and *60x30TX*. For 20 academic years (i.e., 1999-2000 through 2018-2019), White students were awarded higher numbers of master's degrees than were awarded to Hispanic and Black students. All three racial/ethnic groups of students were awarded higher numbers of master's degrees in the 2018-2019 academic year than in the 1999-2000 academic year. The

number of master's degrees awarded to White, Hispanic, and Black students increased by 6,254, 6,331, and 3,020, respectively from the 1999-2000 academic year through the 2018-2019 academic year.

Regarding inferential analyses over time, statistically significant differences were present for the percentages of master's degrees awarded to all three ethnic/racial groups between the 1999-2000 academic year and the 2018-2019 academic year. The percentage of master's degrees awarded to White students in the 2018-2019 academic year was statistically significantly lower, by nearly 20%, than the percentage of master's degrees awarded in the 1999-2000 year. This decrease was not the case regarding the percentage of master's degrees awarded to Hispanic students and to Black students between the 1999-2000 and 2018-2019 academic years. The percentage of master's degrees awarded to Hispanic students increased by 11.30% between the 1999-2000 and 2018-2019 academic years. The percentage of master's degrees awarded to Black students during this time period increased by 7.58%. Accordingly, the percentage of underrepresented students who received master's degrees in Texas increased over time.

### **Summary of Study Two Results**

In the second study, doctoral degree attainment as a function of race/ethnicity in Texas postsecondary institutions was examined within the context of two education and diversity initiatives that were implemented by the Texas Higher Education Coordinating Board—*Closing the Gaps by 2015* and *60x30TX*. During the 20-year period of interest in the current study (i.e., 1999-2000 through 2018-2019), White students were consistently awarded higher numbers of doctoral degrees than were awarded to Hispanic and Black students. Moreover, Hispanic students were consistently awarded higher number of

doctoral degrees than were awarded to Black students from the 1999-2000 academic year through the 2018-2019 academic year. All three racial/ethnic groups were awarded higher numbers of doctoral degrees in the 2018-2019 academic year than in the 1999-2000 academic year. The number of doctoral degrees awarded to White students increased by 221, the number of doctoral degrees awarded to Hispanic students increased by 199, and the number of doctoral degrees awarded to Black students increased by 193.

In reference to inferential analyses over time, a statistically significant difference was not revealed in the percentage of doctoral degrees awarded to White students between the 1999-2000 and 2018-2019 academic years. However, statistically significant differences were present in the percentage of doctoral degrees awarded to Hispanic students and to Black students between the 1999-2000 and 2018-2019 academic years. The percentage of doctoral degrees awarded to Hispanic students increased by 11.07%, and the percentage of doctoral degrees awarded to Black students increased by 9.39%. Correspondingly, the percentage of underrepresented students who were awarded doctoral degrees by Texas colleges and universities increased over time.

### **Summary of Study Three Results**

In the third study, professional degree attainment as a function of race/ethnicity in Texas postsecondary institutions was examined from the 1999-2000 academic year through the 2018-2019 academic year in relation to two education initiatives implemented by the Texas Higher Education Coordinating Board. The first, *Closing the Gaps by 2015*, was in operation from 2000-2015. The second initiative, *60x30TX*, was implemented in 2015 and will extend through 2030. Throughout the 20-year period of interest in the current study, White students were consistently awarded higher numbers of

professional degrees than were awarded to Hispanic and Black students. However, fewer professional degrees were awarded to White students in the 2018-2019 academic year than in the 1999-2000 academic year. In contrast, Hispanic and Black students were awarded a higher number of professional degrees in 2018-2019 than in 1999-2000.

Concerning inferential analyses over time, a statistically significant difference was not present in the percentage of professional degrees awarded to White students or in the percentage of professional degrees awarded to Black students between the 1999-2000 and 2018-2019 academic years. However, a statistically significant difference was yielded in the percentage of professional degrees awarded to Hispanic students. The percentage of professional degrees awarded to Hispanic students increased by 13.65% between the 1999-2000 and the 2018-2019 academic years.

### **Summary of Results Across All Three Studies**

Across the three studies, White students were awarded the highest numbers and percentages of master's degrees, doctoral degrees, and professional degrees from the 1999-2000 academic year through the 2018-2019 academic year. Regarding master's degrees, all three racial/ethnic groups were awarded higher numbers of master's degrees in the 2018-2019 academic year than in the 1999-2000 academic year. In reference to the percentages of master's degrees awarded over time, statistically significant differences were present for all three racial/ethnic groups. Although White students were awarded 20% fewer master's degrees between 1999-2000 and 2018-2019, the percentages of master's degrees awarded to Hispanic students and to Black students increased by 11.30% and 7.58%, respectively.

Concerning doctoral degree attainment from the 1999-2000 academic year through the 2018-2019 academic year, White students were awarded the highest number of doctoral degrees followed by Hispanic students. Throughout the 20-year period of interest in this study, the fewest number of doctoral degrees were awarded to Black students. Regarding the percentages of doctoral degrees awarded between the 1999-2000 and 2018-2019 academic years, a statistically significant difference was not present for White students. However, statistically significant differences were present for doctoral degrees awarded to Hispanic students and to Black students. The percentage of doctoral degrees awarded to Hispanic students increased by 11.07%, and the percentage of doctoral degrees awarded to Black students increased by 9.39%.

With respect to the number professional degrees awarded from 1999-2000 through the 2018-2019 academic years, White students were awarded the highest number of professional degrees, followed by Hispanic students, and then Black students. In reference to the percentages of professional degrees awarded between the 1999-2000 and 2018-2019 academic years, a statistically significant difference was not present in the percentages of degrees awarded to White students or to Black students. Similar percentages of earning professional degrees were present for these two ethnic/racial groups between the two academic years of data that were analyzed. However, the percentages of professional degrees awarded to Hispanic students was statistically significantly higher, 13.65% higher, in the 2018-2019 academic year than in the 1999-2000 academic year.

### **Connections with Existing Research Literature**

The findings for each of the three studies were consistent with Franklin's (2013) results from her investigation regarding the extent to which progress had been made during the State of Texas' initiative *Closing the Gaps by 2015*. Concerning master's degrees, Franklin (2013) documented an increase in the number of master's degrees awarded to White, Hispanic, and Black students between 2000-2011 and that White students were awarded the highest percentage of master's degrees during the 12-year period (i.e., 2000-2011). Franklin (2013) further established that the percentage of master's degrees awarded to Hispanic and Black students steadily increased between 2000 and 2011. Franklin's (2013) findings regarding the numbers and percentages of master's degrees awarded to White, Hispanic, and Black students from the 1999-2000 academic year through the 2010-2011 academic year were congruent with the findings of the first article in this journal-ready dissertation.

With respect to doctoral degrees conferred, Franklin (2013) determined that the number of doctoral degrees awarded to White students was consistently higher than the number of doctoral degrees awarded to Hispanic students and to Black students between the 1999-2000 and 2010-2011 academic years. Regarding the percentage of change over time for each racial/ethnic group, Franklin (2013) determined that the percentage of doctoral degrees conferred decreased for White students, whereas the percentage of doctoral degrees awarded increased for Hispanic students and for Black students. Franklin's findings were consistent with the results of the second article in this journal-ready dissertation.

The results of the third study were consistent with Franklin's (2013) findings regarding the extent to which progress had been made in the numbers and percentages of professional degrees awarded to White, Hispanic, and Black students. Overall, Franklin (2013) documented a statistically significant increase in the percentage of professional degrees awarded to Hispanic students between the 1999-2000 academic year and the 2010-2011 academic year. Franklin (2013) further established that statistically significant differences were not present in the percentages of professional degrees awarded to White students and to Black students between 1999-2000 and 2010-2011. These findings correspond to the results of the article in this journal-ready dissertation.

### **Implications for Policy and Practice**

Based upon the findings of the articles in this journal-ready dissertation, several implications for policy and practice can be established. First, given the ever-increasing diversity of the Texas population and the subsequent increase in the diversity of the student population in Texas colleges and universities, policymakers are urged to be vigilant in considering this diversity when developing policies. Second, because White students have disproportionately been awarded higher numbers and percentages of master's, doctoral, and professional degrees than those degrees awarded to Hispanic and Black students, an urgency exists for policymakers in the State of Texas to evaluate carefully the effectiveness of the state's past initiative, *Closing the Gaps by 2015*, as well as any progress that might have been made thus far in the state's current initiative, *60x30TX*. More specifically, policymakers are encouraged to identify factors that are preventing or hindering the success of education initiatives in the State of Texas and to then develop policies that mitigate those factors.



Third, the *60x30TX* initiative has already provided the foundation for policies designed to increase advanced degree completion rates for the underrepresented racial/ethnic student population up to the year 2030. Moreover, although the *60x30TX* plan is a statewide initiative, the plan is written in broad language that allows policymakers in Texas' postsecondary institutions the latitude and the freedom to be creative and innovative in establishing their own policies that are designed to achieve the goals of the *60x30TX* plan. Policymakers in the State of Texas have the opportunity to monitor closely the progress, or the lack of progress, toward achieving the goals of the *60x30TX* plan and to alter or create policies that include directives specifically aimed at increasing the numbers and percentages of master's, doctoral, and professional degrees awarded to underrepresented racial/ethnic students. Such policies should include ambitious but attainable benchmarks or targets for graduate degree attainment by underrepresented racial/ethnic students. Fourth, some areas where policymakers might find opportunities to develop policies designed to ensure the success of the *60x30TX* initiative include establishing partnerships between leaders in postsecondary institutions, leaders in the K-12 system, and leaders in the community; assessing funding resources; allocating or reallocating funds; and collaborating with administrators, faculty, and staff in a way that establishes a clear pathway designed to lead students through a primary education, to a secondary education, to a postsecondary education, and, ultimately to a graduate education.

With respect to implications for practice, simply creating policies is insufficient. Perhaps the greatest challenge will come when attempts are made to implement policies in a way that is meaningful and that will make a substantial difference in the quality of

education that Texans receive as well as in establishing equity in the Texas education system. Achieving these objectives will demand that policymakers, state agencies, stakeholders, leaders in education, leaders in the community, and practitioners in all education-related areas collaborate with one another in a substantial manner. These parties must also commit to developing, implementing, and practicing policies that not only facilitate the provision of a quality education but to ensure the presence of equity in the Texas educational system. It is only with a workforce comprised of diverse individuals who are highly educated that the State of Texas will succeed in sustaining economic health and in remaining competitive at the global level.

### **Recommendations for Future Research and Practice**

Based on the results of the three multiyear, statewide investigations encompassed in this journal-ready dissertation, several recommendations for future research can be made. First, because the focus of the three studies was solely on the State of Texas, future researchers might consider examining the numbers and percentages of master's, doctoral, and professional degrees as a function of race/ethnicity over time in a state other than Texas or to conduct a nationwide investigation. Second, future researchers might consider expanding on the current studies by including data from private colleges and universities in Texas. Third, future researchers are encouraged to incorporate additional demographic information beyond race/ethnicity to include first-generation status, socioeconomic status, marital status, employment status, full or part-time status, and/or gender. Research that is aligned with any of the aforementioned recommendations would contribute to a more holistic understanding of the backdrop for underrepresented racial/ethnic students' pursuit of a graduate education. Such research would also

contribute to the highly limited body of literature on underrepresented racial/ethnic students' attainment of advanced degrees.

### **Conclusion**

The purpose of this journal-ready dissertation was to ascertain the extent to which progress occurred during the State of Texas' *Closing the Gaps by 2015* and the *60x30TX* education initiatives. More specifically, the numbers and percentages of master's, doctoral, and professional degrees awarded to White, Hispanic, and Black students from the 1999-2000 academic year through the 2018-2019 academic year were examined to determine whether statistically significant changes had occurred in the number of master's, doctoral, and professional degrees awarded to the aforementioned racial/ethnic groups. In each of the three studies, White students were awarded the highest numbers and percentages of master's degrees, doctoral degrees, and professional degrees from the 1999-2000 academic year through the 2018-2019 academic year. Moreover, although the numbers and percentages of master's, doctoral, and professional degrees awarded by Texas postsecondary institutions to Hispanic and Black students increased during the 20-year time period, considerable disparity continues to exist. Posited herein is that leaders in higher education have an obligation and a commission to pursue and secure the resources necessary to promote a substantive and equitable representation of underrepresented racial/ethnic students in graduate degree programs. Leaders in higher education need to hold themselves accountable for facilitating difficult but productive conversations around race/ethnicity and for advocating for the implementation of policies, procedures, and services that are designed to establish equity and inclusivity in their colleges and universities both at the undergraduate level and the graduate level.

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## APPENDIX



Date: Jun 23, 2020 8:07 AM CDT

TO: Tama Hamrick John Slate

FROM: SHSU IRB

PROJECT TITLE: Advanced Degree Attainment as a Function of Race/Ethnicity in Texas Postsecondary Institutions Over Time: A Multiyear, Statewide Investigation

PROTOCOL #: IRB-2020-168

SUBMISSION TYPE: Initial

ACTION: Exempt

DECISION DATE: June 23, 2020

EXEMPT REVIEW CATEGORY: Category 4. Secondary research for which consent is not required: Secondary research uses of identifiable private information or identifiable biospecimens, if at least one of the following criteria is met:

- (i) The identifiable private information or identifiable biospecimens are publicly available;
- (ii) Information, which may include information about biospecimens, is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained directly or through identifiers linked to the subjects, the investigator does not contact the subjects, and the investigator will not re-identify subjects;
- (iii) The research involves only information collection and analysis involving the investigator's use of identifiable health information when that use is regulated under 45 CFR parts 160 and 164, subparts A and E, for the purposes of "health care operations" or "research" as those terms are defined at 45 CFR 164.501 or for "public health activities and purposes" as described under 45 CFR 164.512(b); or
- (iv) The research is conducted by, or on behalf of, a Federal department or agency using government-generated or government-collected information obtained for nonresearch activities, if the research generates identifiable private information that is or will be maintained on information technology that is subject to and in compliance with section 208(b) of the E-Government Act of 2002, 44 U.S.C. 3501 note, if all of the identifiable private information collected, used, or generated as part of the activity will be maintained in systems of records subject to the Privacy Act of 1974, 5 U.S.C. 552a, and, if applicable, the information used in the research was collected subject to the Paperwork Reduction Act of 1995, 44 U.S.C. 3501 et seq.

Greetings,

Thank you for your submission of Initial Review materials for this project. The Sam Houston State University (SHSU) IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will retain a copy of this correspondence within our records.

## VITA

### TAMA SUZANNE HAMRICK

#### EDUCATION

Doctorate of Education–Higher Education Leadership, December 2020  
Sam Houston State University, Huntsville, TX.

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#### PROFESSIONAL EXPERIENCE

Coordinator, Academic Planning and Assessment, **Sam Houston State University**, 2015-Present

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#### PUBLICATIONS

Hamrick, T. S., & Slate, J. R. (2018). Differences in Black student enrollment in Texas doctoral programs over time. *Journal of Interdisciplinary Sciences*, 2(2), 1-12

Tayebi, K. A., Fox, L. C., Strauss, B., & Hamrick, T. S. (2018). Demystifying academic writing: Mentoring graduate writing skills. *The Chronicle of Mentoring & Coaching* 2(1).

Fox, L. C., Hamrick, T., & Tayebi, K. (2017). Transforming lives: Mentoring first-generation minority students. *The Chronicle of Mentoring and Coaching*, 2(10), 120-126.

Tayebi, K., Moore-Jazayeri, M., & Maynard [Hamrick], T. (2001). Discovering diverse voices: Electronic discussion lists in the multicultural classroom. *ACE Journal*, 3(2), 7-29.

Tayebi, K., Moore-Jazayeri, M., & Maynard [Hamrick], T. (1998). From the borders: Reforming the curriculum for the at-risk student. *Journal of Cultural Diversity*, (5)3, 101-109.

## PRESENTATIONS

- Hamrick, T., Jones, B., & Roberts, J. (2019, October). *Promoting Faculty Engagement in Ongoing and Innovative Assessment Practices Through a Culture of Assessment*. Paper presented at the Texas Association for Higher Education Assessment conference, San Antonio, TX.
- Hamrick, T., & Jones, B. (2019, March). *Promoting Faculty Engagement in Ongoing and Innovative Assessment Practices Through a Culture of Assessment*. Paper presented at the Learning, Education, Assessment, and Performance conference, Houston, TX.
- Tayebi, K. A., Fox, L. C., Strauss, B., & Hamrick, T. S. (October, 2018). *Demystifying Academic Writing: Mentoring Graduate Writing Skills*. Paper presented at the University of New Mexico's Mentoring Institute Conference, Albuquerque, NM.
- Hamrick, T. S. (2018, February). *First-Generation Students' Pursuit of Advanced Degrees*. Paper presented at the Southern Educational Research Association's (SERA) 41<sup>st</sup> Annual Conference, New Orleans, LA.
- Hamrick, T., & Roberts, J. (2018, March). *Supporting Faculty Engagement In Ongoing and Innovative Assessment Practices Through Assessment Mini-Grants*. Paper presented at the Learning, Education, Assessment, and Performance conference, Houston, TX.
- Fox, L. C., Hamrick, T., & Tayebi, K. (October, 2017). *Transforming Lives: Mentoring First-Generation Minority Students*. Paper presented at the University of New Mexico's Mentoring Institute Conference, Albuquerque, NM.
- Jones, B., Hamrick, T., & Roberts, J. (2017, March). *Assessing Teamwork Using Student Self-Reflections: Efforts to Design and Pilot a Locally Developed Instrument*. Paper presented at the Learning, Education, Assessment, and Performance conference, Dallas, TX.