With projections of the decline of the Texas economic base, graduation rates and percentages of Hispanic students at Texas community colleges were examined to determine whether statistically significant increases were present from the years 2000 to 2008. In 2010, the Texas Higher Education Coordinating Board modified the major initiative Closing the Gaps, because the state was projecting a shortfall of the targets set for the year 2015. In this analysis of statewide data from Texas community colleges, the number of associate degrees obtained by Hispanic students statistically significantly increased from 2000 to 2008. Unfortunately, in our opinion, the actual percentage of associate degrees obtained by Hispanic students over this time period did not statistically significantly increase. This finding is of concern, particularly given the increase in the percent of Hispanics in Texas. Implications of our findings are discussed.

In 2009, President Obama set an ambitious educational goal for the United States. By 2020, his intent is to have the U.S. become the top ranked country in the world in college degree attainment. This past fall, Jill Biden, community college instructor and wife of the Vice-President, hosted the White House Summit on community colleges. The summit was one of several initiatives launched by the Obama administration to fulfill the goal of regaining superiority in producing college graduates in the U.S. (Cooper, 2011).
Because community colleges educate nearly half of the undergraduates in the U.S., community colleges have become more important than ever in the nation’s goal to elevate the numbers of college-educated persons entering the workforce (Cooper, 2011). At the same time, community colleges educate higher proportions of minority, low-income, and adult learners (American Association of Community Colleges, 2011) than do four-year colleges. Saenz (2002) documented that America’s 1,076 public community colleges educate over half of all minority students enrolled in higher education. As such, community colleges represent the forefront in educating students from diverse backgrounds.

Most Americans would agree with the statement that a college education is beneficial to the success of an individual, but what impact does the success have when the statement is broadened to include society as a whole? The U.S. is falling behind other industrial countries educationally and economically. Currently, the U.S. is ranked 12th among 36 industrialized nations in which it previously was number one in degree attainment (McGlynn, 2011). Of this number, 62% were high school graduates, only 13% had obtained a bachelor’s degree or higher, and of the full-time college students in the country, only 12% were Hispanic (U.S. Census Bureau, 2010).

Access to higher education and the possibility of obtaining a postsecondary degree is often lauded as achieving the American dream and an opportunity to be shared by any citizen regardless of race, ethnicity, or income level. However, nationwide, too few Americans complete some level of postsecondary education (McGlynn, 2011). The disproportionate amount of degrees awarded to underserved populations, specifically Hispanic Americans, has the potential to derail the American dream for society in general (The National Center for Public Policy and Higher Education, 2005; Perna, 2005). According to United States Census Data, the number of Hispanic Americans more than doubled from the year 2000 to 2009 and at 48.4 million, comprise the largest ethnic minority in America (U.S. Census Bureau, 2010). Of this number, 62% were high school graduates, only 13% had obtained a bachelor’s degree or higher, and of the full-time college students in the country, only 12% were Hispanic (U.S. Census Bureau, 2010).

Hispanics comprise 36% of the population in the State of Texas which, following California, is the second largest proportion of the national Hispanic population, with 18.8% of the national
In 2005, Texas was declared a majority-minority state, meaning the non-White population had surpassed that of the White population. The Texas Education Agency (TEA) public school statistics for the 2010-2011 school year indicated Hispanic students represented the majority of total enrollment population at 50.2% for the first time in modern history (TEA, 2011). Unfortunately, the number of college degrees, specifically at the community college level has not mirrored this increase in population. As of fall 2008, Texas needed to increase Hispanic enrollment by 105,000 to reach the original 2010 target for the Closing the Gaps initiative (Texas Higher Education Coordinating Board [THECB], 2008).

College completion is the greatest disparity in education outcomes between the nation’s largest minority group and the White majority (Fry, 2004). Increasing Hispanic education levels is crucial to the U.S. to meet future societal and workforce needs. Deborah A. Santiago succinctly outlined the reasons for concern about this particular minority group in a policy proposal for *Excelencia in Education* to increase Hispanic college completion. She focused on the following facts: (a) the Hispanic population is growing and will make up the greatest percentage of the U.S. population in 2020; (b) Hispanic education attainment is lower than other groups; and (c) many economically competitive jobs in the U.S. will soon require education beyond a high school diploma (Santiago, 2011).

**Theoretical Framework**

Coleman (1988) described human capital as a human extension of the physical resources necessary for a productive society. Social capital adds examination of differences (or changes) among persons facilitating the actions (Coleman, 1988). As the overall workforce in Texas becomes more racially diverse, the lack of higher education has strong negative economic implications when examined on a general or average level. A decline in the average income of individuals translates into a loss of tax base and broad financial decreases (Kelly, 2005). In a trickle-up effect, loss of state funds has the potential to place strain on the national financial status. The president and CEO of the U.S. Chamber of Commerce strongly warned of the looming national crisis stemming from the failure of the country to keep pace with international education standards:

> Unless we turn the education situation around, we will pay a terrible price. America will go from economic superpower to an also-


ran. Our high standard of living will erode like sand in a pounding surf. We will lose jobs, productivity, and, eventually, hope. The social fabric that holds our nation together will begin to unravel. (Donohue, 2007)

The expected retirement of the baby boomer generation, combined with an increasingly diverse population with lower college graduation rates, could lead to a drop in the overall national average income in the next 20 years (The National Center for Public Policy and Higher Education, 2005).

**Benefits of Higher Education**

Factors in the decision to pursue a college education are different for each individual. Motivations can range from personal gratification in the learning process to expectations of financial gains, and in many Hispanic Americans, the desire to live a better life than their parents were able to provide. By examining various factors such as expected financial rewards, social benefits, and personal efficacies, researchers have concluded that the benefits of higher education are tangible.

The potential to amass a large debt from attending college is a concern for individuals considering higher learning. Whether or not the financial benefits of obtaining a higher education degree outweigh this expense is a primary concern when beginning a professional career. Hispanic students tend to choose community colleges because they are often the only feasible affordable choice for higher education (Saenz, 2002).

Researchers have proffered other benefits of higher education, and specifically an associate degree. According to the Bureau of Labor Statistics’ second quarter 2011 averages, the weekly full-time median wage for adults age 25 years and older with an associate degree average 13.5% more income weekly than those persons with only a high school diploma, and 38.3% more income weekly than those persons who drop out of high school (Bureau of Labor Statistics, U.S. Department of Labor, 2011). Higher education brings greater earnings, more tax revenues, and lower unemployment, along with decreases in incarceration and decreases in social program costs for society (Mullin, 2011). In addition to the financial benefits of completing an associate degree, the social value of graduating also results in a higher level of cultural and family values. This translates into a healthier lifestyle and long-term social and economic stability adding to quality of life (Wetzel, 2010). As the current economic recession drags on and unemploy-
ment remains frustratingly high, the issue of jobs tops everyone’s worry list. These worries have also driven an ongoing enrollment surge at the nation’s community colleges resulting in an increase of 17% nationally (AACC, 2011).

Fang (2008) stated that college graduates with one to three years of work experience can expect to earn, on average, 60% more than nongraduates. The discussion on this topic centers on a quantitative method to evaluate the increase and apply that data to two possible explanations, human capital theory and signaling theory. Stated in the human capital theory is that education increases the productivity of the workers, thereby increasing wage and growth. However, following the signaling theory, education provides a better match between job and prospective employee; therefore the college-educated employee is more competitive in ascertaining the higher paying jobs (Fang, 2008).

Perna (2003) examined the topic of percentage of observable earnings attributed to individuals holding a bachelor’s degree. Similar to Fang, she used the human capital theory of determining wages based on the premise that “differences in productivity are expected to be attributable to differences in the investments that individuals have made in their personal development, such as the quantity and quality of their education” (Perna, 2003, p. 453). The approach was to examine the difference in earnings between high school and undergraduate college graduates. In this study, the earnings premium for those individuals holding at least an associate degree were higher than high school graduates and the premium increased with the level of education obtained. This increase was on average 36% higher for those persons holding a bachelor’s degree (Perna, 2003).

The College Entrance Examination Board is a not-for-profit association and is comprised of over 4,700 institutions of higher learning in its mission to “connect college students to college success and opportunity” (Baum & Payea, 2005, p. 2). The purpose of the College Board’s report, Education Pays 2004, was to examine the benefits higher education has on society and individuals. Authors for the association, Baum and Payea (2005), discussed many aspects of the value of individuals obtaining college degrees; among their findings, “the average lifetime earnings for individuals with associate’s degrees are almost 25% higher than lifetime averages for high school graduates” (p. 15). An individual with a bachelor’s degree can expect to earn over 73% more over the span of a 40-year career. When individuals earn a doctoral degree,
the average lifetime earnings are two to three times higher than high school graduates (Baum & Payea, 2005). [Note. Lest readers become confused, the first statistic cited regarding earnings was for weekly salary whereas the statistic just cited is in reference to lifetime earnings.]

Using data from the National Center for Education Statistics (NCES), Perna (2005) examined the various impacts gender, race, and socioeconomic factors had on enrollment decisions, graduation rates, and economic success. Similar to the College Board, the researchers pointed to the general positive impact of acquiring a college degree versus a high school diploma and in 1999, the average financial premium was 19% higher. When discussing ethnicity, they suggested policy implications for increasing the graduation rates of Hispanics in a social payoff context based on higher return rates of civic duties such as voting (Perna, 2005). Also noted was the inclusion of health insurance coverage in relation to education status. As expected, the graduates covered by health insurance increased with education attainment. Thus, to prevent an overall decline in the workforce income and benefits that accompany higher earnings as a result of increasing demographic changes, the achievement gap between groups must narrow significantly in the next 20 years (The National Center for Public Policy and Higher Education, 2005).

Some discussions of achievement gap are notably focused around the ability of colleges to recruit and retain underrepresented populations while the reality of these students’ ability to transition from high school to college is overlooked (Arredondo & Castillo, 2011). According to Arredondo and Castillo (2011), missing from this scenario are the institutional initiatives that address the K-12 gap, specifically those initiatives involving college education associations and universities. Attention to early educational interventions, as well as health and socioeconomic conditions of Hispanic children is critical to the future of America’s economic prosperity (Flores, 2010).

Initiatives

In 2000, in response to negative reports predicting major social consequences in the 1990’s, the THECB announced the Closing the Gaps initiative to meet the proposed workforce needs of Texas. This major policy shift was aimed at increasing participation and graduation rates among underrepresented populations, chiefly ethnic minority groups. The initiative had a specific goal of increasing the number of His-
panic students completing undergraduate degrees from 18,000 in 2000 to 26,000 in 2005, to 36,000 in 2010, and to 50,000 by 2015 (THECB, 2010). Through the year 2009, the numbers were still consistently below the targets; therefore, an accelerated plan was announced in April of 2010, with strong language regarding the importance of increasing efforts to improve the numbers of graduates (THECB, 2010).

On the national level, the No Child Left Behind Act (NCLB) sought to close the achievement gap persistent in non-White students as well as raising test scores for all students. The Center on Education Policy (CEP) analyzed subgroups to assess improvement in areas of achievement, using the state’s NCLB accountability mechanisms; findings indicated the Hispanic-White gap narrowed 79% of instances (Center on Education Policy, 2009).

Statement of the Problem
The Texas State Data Center cautioned unless more people earn degrees, average income will drop $3,000 by 2030, and with this income drop, the possibility of a state budget crisis is very real. In addition, the educational level of the Texas workforce is projected to decline unless the state can increase the number of Hispanics getting degrees (The National Center for Public Policy and Higher Education, 2005).

Purpose of the Study
The purpose of this study was to determine the extent of change in the number of and percentage of associate degrees awarded to Hispanic students by Texas community colleges since 2000. Given factors such as the THECB’s Closing the Gaps initiative, and other college-readiness programs focusing on minorities, the number and percentage of Hispanics receiving college degrees should have significantly increased since 2000. These data are even more important given the increase in the state’s Hispanic population.

Research Questions
The following research questions were addressed in this study: (a) What are the numbers and percentages of associate degrees awarded to Hispanic students in Texas 2000 and 2008?; and (b) Has the percent of Hispanic adult population in Texas receiving associate degrees increased between 2000 and 2008?
Method

Participants

Participants in this study were the 76 community colleges on whom data were available through the Texas Higher Education Coordinating Board system website (http://www.txhighereddata.org/Interactive/Accountability/InteractiveMain.cfm). Using the Interactive Institutional List function on the website, the identifiers: Success and Key Measures were queried for associate degrees awarded to Hispanic students for the years 2000 through 2008. These data, (Figure 1) as well as the total number of associate degrees awarded for the same years, were downloaded to an Excel file and then converted into an SPSS data file for statistical analysis. To obtain percentages, the number of Hispanic students awarded degrees was divided by the total number of students receiving the same degree for each year.

Results

Associate degrees awarded increased every year from 2000 to 2007 and then decreased from 2007 to 2008. The mean number of degrees obtained by Hispanic students increased every year from 2000 to 2008. In 2000, the average number of degrees awarded to Hispanic students was 171.88 (SD = 667.89) whereas the average number awarded in 2008 was 355.83 (SD = 1364.57). Descriptive statistics for each year are presented in Table 1. Given the increase in the Hispanic population in Texas over this time period, an increase in the number of associate degrees was anticipated. Percentages for the years 2000 and 2008 are presented in Table 2.

Prior to conducting inferential statistics procedures, the numbers of degrees for all years examined using standardized skewness coefficients (i.e., skewness divided by standard error of skewness) and the standardized kurtosis coefficients (i.e., kurtosis divided by the standard error of kurtosis) and all were calculated to be outside the range of normality (i.e., +/- 3, Onwuegbuzie & Daniel, 2002). Therefore, a nonparametric dependent samples t-test was performed on the data.

A nonparametric dependent samples t-test (i.e., the Wilcoxon Signed-Rank Test) was performed to determine whether a difference was present in the number of associate degrees awarded to Hispanic students between the years of 2000 and 2008. Results were significant: z = -7.56, p < .001, Cohen’s d = 0.17. The effect size for this finding was small (Cohen, 1988). As such, the actual number of associate degrees awarded
Table 1. Descriptive Statistics for Degrees Awarded to Hispanic Students by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>n of community colleges</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>76</td>
<td>171.88</td>
<td>667.89</td>
</tr>
<tr>
<td>2001</td>
<td>76</td>
<td>178.20</td>
<td>688.88</td>
</tr>
<tr>
<td>2002</td>
<td>76</td>
<td>203.46</td>
<td>785.39</td>
</tr>
<tr>
<td>2003</td>
<td>76</td>
<td>240.03</td>
<td>934.48</td>
</tr>
<tr>
<td>2004</td>
<td>76</td>
<td>273.88</td>
<td>1065.54</td>
</tr>
<tr>
<td>2005</td>
<td>76</td>
<td>302.97</td>
<td>1176.03</td>
</tr>
<tr>
<td>2006</td>
<td>76</td>
<td>325.07</td>
<td>1263.22</td>
</tr>
<tr>
<td>2007</td>
<td>76</td>
<td>338.28</td>
<td>1303.32</td>
</tr>
<tr>
<td>2008</td>
<td>76</td>
<td>355.83</td>
<td>1364.57</td>
</tr>
</tbody>
</table>

Table 2. Descriptive Statistics for Percentage of Degrees Awarded to Hispanic Students by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>n of community colleges</th>
<th>M (%)</th>
<th>SD (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>765</td>
<td>1.51</td>
<td>2.38</td>
</tr>
<tr>
<td>2008</td>
<td>76</td>
<td>1.71</td>
<td>2.57</td>
</tr>
</tbody>
</table>

Figure 1. Mean number of associate degrees awarded to Hispanic students from 2000 to 2008 in Texas community colleges.
to Hispanic students was slightly higher in 2008 than 2000.

As stated above, we anticipated an increase in the number of associate degrees awarded to Hispanic students, solely due to the increase in the Hispanic population in Texas. Examination of the actual numbers themselves can be misleading because the total number of degrees awarded in the state increased during this time period as well. Accordingly, it is the percentage of associate degrees that are awarded to Hispanic students that better represents the extent to which equity is being reached. The number of associate degrees awarded to Hispanic students each year was divided by the total number of associate degrees awarded each year. These calculations provided the actual percentage of associate degrees, out of the total associate degrees awarded, awarded to Hispanic students in 2000 to be compared with the actual percentage of associate degrees awarded to Hispanic students in 2008. Prior to conducting inferential statistics procedures, the percentages of degrees for the 2000 and 2008 academic years were examined using standardized skewness and standardized kurtosis coefficients and all were determined to be out of the range of normality (i.e., +/-3, Onwuegbuzie & Daniel, 2002). Again, a nonparametric dependent samples t-test was performed on the data.

The nonparametric dependent samples t-test (i.e., the Wilcoxon Signed-Rank Test) performed to determine whether a difference was present in the mean percentage of associate degrees awarded to Hispanic students between the years of 2000 and 2008 results did not yield a statistically significant result, $z = -1.04$, $p = .30$. A statistically significant increase was not present in the percentage of degrees awarded to Hispanic students between the years 2000 and 2008.

**Discussion**

From these data, implications are that while the actual numbers of associate degrees awarded increased in the specified time frame, the increase was only in number, not in the percentage of the total degrees awarded. One factor influencing this increase could be the overall increase in the Hispanic population. The percentage of Hispanic adults receiving an associate degree, as a percentage of the total amount of degrees awarded, was not statistically significant, which indicates the possibility that Hispanics are still receiving degrees below the projected targets. In effect, the initiatives to close the achievement gap do not appear to be working on a meaningful level.
It appears that Deborah A. Santiago (2011) was correct in her first two reasons for concern about the nation’s Hispanic population if Texas is any measure of the trend. Even though the Hispanic population has grown to become the largest minority group both nationally and in Texas, their educational attainment level has not only failed to keep pace with the population growth but is lower than other groups. For community colleges like those colleges in Texas who enroll over half of all minority students, the data presented in this study have an even greater impact on the last of Santiago’s concerns about economically competitive jobs requiring education beyond a high school diploma. With minimal gains in even associate degree completion by Hispanics in Texas, it follows that the largest group in the state will not be contributing to or benefitting from an economy that can provide better paying jobs, health insurance, social programs, and a standard of living associated with a healthy society.

This conclusion is especially worrisome given the Texas Education Agency’s 2010 Comprehensive Annual Report on Texas Public Schools indicating continuously improving gains in all subjects for Hispanic students (TEA, 2010). This upward trend should translate into higher success and graduation gains at the higher education level, and findings in this study could have policy shift implications from enrollment to retention and success. As researchers indicate college degrees as the social mechanism for workforce economic benefit, merely attending and enrolling in higher education courses should not necessarily be a primary focus of initiatives. The acceleration of the Closing the Gaps initiative is an attempt to address this finding, however specific programs target small groups such as Hispanic and Black males. According to Schmidt (2003), education at various stages is like a leaky pipeline with many areas for Hispanic students to get stuck or spill out and not return. Some of the obstacles include financial concerns, extended family obligations, and having parents who did not attend college (Schmidt, 2003). Without guidance through the processes of attending college, managing robust curricula, and utilizing support services, the college completion rate is likely to continue this stagnant trend.

Further complications have appeared in the form of massive reductions in the 2011 Texas State Budget, including large cuts to both public and higher education funding. Budget cuts are an estimated $7 billion for public education and $1.7 billion for higher education for the 2012-2013 biennium (Legislative Budget Board,
2011). In January of 2011, state education agencies and institutions of higher learning were directed to reduce their respective budgets by 5%, amounting to over 74 million dollars in cuts to the THECB funds (Paredes, 2011). A letter from the Commissioner of Higher Education responding to the directive stressed the negative impact the cuts will have regardless of the care taken to evaluate programs for reduction criteria (Paredes, 2011).

**Further Research**

In light of the changing demographics of the college applicant pool, community colleges will continue to be a critical point for Hispanic students’ entry into postsecondary education (Saenz, 2002). Although all groups have to increase to meet Obama’s college completion goals, increasing Hispanic attainment is crucial because their education attainment is lower than other groups. Future suggested studies include examination of cultural background and barriers to graduation. Delayed enrollment is associated with diminished probability of college completion. Research of the Hispanic student pathway to higher education compared with groups who have high completion rates is warranted. Hispanic students are more likely to have children or care for elderly parents. These family responsibilities of Hispanic students differ from those of their White peers and may also be a focus of study as it impacts college completion rates.

The Closing the Gaps initiative should also be examined in detail to determine which mechanisms did not achieve success and how to alter programs to meet future targets. A review of the Puente Project, a collaborative partnership between the California community colleges and the University of California, has achieved some success addressing the low transfer and associate degree completion rates of Hispanic community college students (Saenz, 2002). An interesting outlier in need of further research is the fact that Hispanic women graduate at consistently higher rates than Hispanic men and often graduate at the same rate as White men (Carey, Kelly, & Schneider, 2010). Various constituencies of interest should be included in the discussion on how to increase the education level of a vital state resource, the Hispanic population.
References


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