Who's Enrolled in Dual Credit Courses: a Multiyear Analysis of Texas Community College Students

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Abstract

In this research study, the demographic characteristics (i.e., gender, ethnicity/race) of students who completed a dual credit course while in high school and then enrolled in a community college in Texas were determined for the 2012-2013 through the 2014-2015 academic years. In all three academic years, almost two thirds of the community college students who had completed a dual credit course in high school were females. With respect to ethnicity/race, White students constituted the highest percentage, with Black students having the lowest percentage of students who completed a dual credit course while in high school. Implications and recommendations for future research were discussed.

Keywords: Dual credit, Texas community college, Demographic characteristics, Asian, White, Hispanic, Black, Gender

1.Introduction

Sixty-five percent of the jobs in the United States will require some level of higher education by 2020 (Carnevale, Jayasundera, & Hanson, 2012). "These realities are important for those in higher education to understand when considering policy and practice aimed at developing the workforce" (D'Amico, Morgan, Katsinas, &Friedel, 2015, p. 191). Gardner, Barefoot, and Farakish (2015) suggested that, in addition to the propensity to earn more wages, college helps students become better thinkers, which allows for long-term life skills. Gardner et al. (2015) noted, "college is also important because it prepares citizens for leadership roles. Without a college degree, you would find it difficult to be a leader in your community, company, profession, or military unit" (p. 7).

The percent of workers in the United States who had some postsecondary education increased from 28% to 59% between 1973 and 2000 (Partnership for 21st Century Skills, 2008). Also during that same timeframe, employees with bachelor's degrees increased from 9% to 20%. The Partnership for 21st Century Skills (2014) stated:

[c]reating an aligned, 21st century public education system that prepares Americans to thrive is the central competitiveness challenge of the next decade. Addressing this challenge requires forceful and forward-thinking leadership from federal, state and local policymakers. (p. 16)

With respect to improving the rates of high school graduates enrolling in postsecondary settings, college preparatory programs such as Advanced Placement and dual credit were developed and implemented. The college preparatory program of interest in this investigation is that of dual credit. High school juniors and seniors enroll in dual credit courses to obtain grades and earn credits for high school and concurrent college courses while still a high school student (Khazem & Khazem, 2012; Texas Higher Education Coordinating Board, 2016). In Texas, students who enroll in dual credit courses through local community colleges may receive college credit (Texas Education Agency, 2011). For purposes of this investigation, dual credit was defined as: a process through which a student may earn high school credit for successfully completing a college course that provides advanced academic instruction beyond, or in greater depth than, the Texas Essential Knowledge and Skills (TEKS) for a corresponding high school credit course. (Texas Education Agency, 2011, p. 1)

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Nationally, dual credit enrollment expanded from 800,000 students in 2002-2003 to 1.3 million students in 2010-2011 (Barshay, 2013). In Texas, student enrollment in dual credit courses increased from 71,803 students in the 2007-2008 school year to 94,232 students in the 2009-2010 school year, an increase of 31% (American Institute for Research & Gibson Consulting Group, 2011). In a recent survey that was sent to American Association of Collegiate Registrars and Admissions Officers institutions members and non-members, 388 institutions responded that 78% of them offered dual credit (Kilgore & Taylor, 2016). Adam Lowe, Executive Director of the National Alliance for Concurrent Enrollment Partnerships, stated:

acrossthe country, participation is growing by 7 percent a year—in many states at considerably higher rates," (as cited in Gross, 2016, para. 5). While 20 years ago these programs were typically reserved for only those students who were academically advanced, now they are increasingly enrolling more low-income and minority students, as well as students who are the first in their families to receive a college education. (Gross, 2016, para. 5)

One reason that may explain the popularity of dual credit programs is that dual credit courses may help students prepare for college. Almost 60% of students entering postsecondary institutions are not college-ready (National Center for Public Policy and Higher Education, 2010). With respect to the state of interest in this investigation, Texas, several researchers (e.g., Barnes & Slate, 2013, 2014; Combs et al., 2010; Harvey, Slate, Moore, Barnes, & Martinez-Garcia, 2013) have documented concerns that Texas high school graduates are not college-ready. Conley (2007) defined college-readiness as "the level of preparation a student needs to enroll and succeed-without remediation-in a credit-bearing general education course at a postsecondary institution that offers a baccalaureate degree or transfer to a baccalaureate program" (p. 5). One suggested option for improving the college-readiness skills of high school graduates is dual credit (Allen &Dadgar, 2012; Crouse & Allen, 2014; Texas Higher Education Coordinating Board, 2016; Young, Slate, Moore, & Barnes, 2014b). In dual credit enrollment, students may take college level courses while enrolled in high school and receive college level credit. As such, dual credit enrollment may be a viable method to increase the college-readiness skills of high school graduates.

In a study most related to this proposed investigation, Young, Slate, Moore, and Barnes (2013) analyzed data on 164,434 students enrolled in Texas community colleges from the 2005-2006 to the 2011-2012 academic years. Of the Texas community college students, 15% completed dual credit courses while in high school. Of their total sample, 16% of females and 14% of males were enrolled in dual credit courses while in high school. With respect to only their sample of students who had completed a dual credit course while in high school, 45% were male and 55% were female. Concerning their sample of community college students, the percentage of students who had completed a dual credit course while in high school were 11% White, 3% Other, 3% Hispanic, 1% Black, and 0.2% of Asian students (Young, Slate et al., 2013). Within each ethnic/racial group, higher percentages of females than males completed a dual credit course. In the 2011-2012 academic year, 15.3% of Hispanic males, 19% of Hispanic females, 7.3% of Black males, and 7.6% of Black females completed a dual credit course. Young, Slate et al. (2013) noted that Black student dual credit enrollment was the lowest of the four ethnic/racial groups (i.e., Asian, White, Hispanic, and Black) of students whose data they analyzed. Also, Black student enrollment had the lowest growth rate over the 7-year period. Further, Young, Slate et al. (2013) contended, "The lack of Black student enrollment should be a major priority for future research and could be accomplished by research through surveys on the cultural differences that 'prevent' Black students from enrolling in dual credit." (p. 7)

In a separate study, also conducted on Texas community college students, Young, Joyner, and Slate (2013) examined data on 1,785 community college students who had completed a dual credit course while in high school. In their sample of students who completed a dual credit course while in high school, 85% were White,3% were Black, 0.8% were Asian, and over 10% did not report their ethnicity/race. Readers should note that Young, Joyner et al. (2013) reported that they were not able to access data on Hispanic student participation in dual credit courses. Young, Joyner et al. (2013) reported that the aforementioned percentages, especially for Black students, were markedly lower than the percentages of Black students in the community colleges' geographic area. With respect to ethnicity/race, White students had a 17% higher enrollment rate than Black students (Young, Slate et al., 2013). Young, Joyner et al. (2013)contended that an "overrepresentation of White students in comparison to students of color should be a focus of concern" (p. 5). In a follow-up article, Young, Slate, Moore, and Barnes (2014a) conducted an extensive literature review of dual credit.

In their literature review, Young et al. (2014a) reported substantial differences in the ethnic/racial composition of students who had taken dual credit courses while in high school.

As contended by several researchers (e.g., Cates & Schaefle, 2011; Combs et al., 2010; Conger, Long, & Iatarola, 2009), underrepresented students need to be encouraged to enroll in dual credit courses. Mangan (2014) determined that Black and Hispanic students have increased their enrollments in dual credit in recent years. However, Lee and Slate (2014) argued that minority students with academic challenges should not be influenced to enroll into dual credit or Advanced Placement courses, unless they are provided with the academic support and resources they may need to be successful. As evidence that Black and Hispanic students may not be prepared for the rigors of college preparatory courses, Moore et al. (2010) established that 50% of White students and 80% of Black and Hispanic students were not college ready.

1.1 Statement of the Problem

Concerns have been expressed by numerous researchers (e.g., Gamez-Vargas & Oliva, 2013; Voyer & Voyer, 2014; Young, Joyner et al., 2013; Young et al., 2014a, 2014b) that underrepresented students such as Black and Hispanic students were not enrolled in dual credit programs in an equitable manner to their percentage of student enrollment in high schools. Important to note, Black students had the lowest level of participation in the dual credit program during the years analyzed by Young et al. (2014b). With current and future jobs requiring some level of postsecondary education (Bureau of Labor Statistics, 2016; Hickox, 2015; Kotamraju & Blackman, 2011), a lack of college-readiness poses a serious challenge, both for postsecondary institutions and for underprepared students. As such, the demographic characteristics of community college students who completed a dual credit course continue to warrant examination. With dual credit programs being emphasized in recent years (e.g., Hillman, Tandberg, & Gross, 2014; Lundy-Wagner, 2015; Young et al., 2014a), determining whether underrepresented students are enrolling in higher numbers in dual credit programs is an important consideration for all postsecondary institutions, especially community colleges.

1.2 Purpose of the Study

The purpose of this study was to determine the demographic characteristics of students who completed a dual credit course while in high school and then enrolled in a community college in Texas. The gender and ethnic/racial characteristics of these students were determined for three academic years (i.e., 2012-2013, 2013-2014, and 2014-2015). This multiyear analysis permitted a determination of trends, if present, by gender and by ethnicity/race in dual credit enrollment.

1.3 Significance of the Study

The significance of the study was to determine the degree to which community college male and female students enrolled in dual credit courses while in high school in a comparable manner to their percentage of student enrollment. Knowing the demographic characteristics of students who completed dual credit courses while in high school may be of value to higher education leaders and policymakers, as well as to K-12 educational leaders. Another important element of this article involved ascertaining the degree to which underrepresented Black and Hispanic students enrolled in dual credit courses while in high school at an equitable rate compared to their White and Asian peers. Information obtained from analyzing three years of data may be helpful in determining the degree to which inequities in dual credit enrollment by student gender and by ethnicity/race are present.

1.4 Research Questions

The following research questions were addressed in this investigation: (a) Of community college students who completed a dual credit course while in high school, what percentage was male and what percentage was female?; (b) What is the ethnic/racial diversity of community college students who completed a dual credit course while in high school?; (c) What trend is present in the percentages of male and female community college students who completed a dual credit course while in high school from the 2012-2013 through the 2013-2014 academic years?; and, (d) What trend is present in the ethnic/racial composition of community college students who completed a dual credit course while in high school from the 2012-2013 through the 2013-2014 academic years?

The first two research questions were repeated for the 2012-2013, 2013-2014, and 2014-2015 academic years, whereas the last two research questions reflected all three academic years. As such, this empirical study was comprised of eight research questions.

2.0 Method

2.1 Research Design

For this article, the research design present was a descriptive study in which the characteristics of a sample were described (Johnson & Christensen, 2012). The archival data that were analyzed herein constituted three years of student data from a Texas community college district. As such, descriptive statistics including frequencies and averages were calculated by student gender and by student ethnicity/race for each of the three academic years of data. These descriptive statistics were examined to provide a description for each academic year, as well as across the three academic years, of student enrollment in dual credit courses while in high school and subsequent enrollment in a Texas community college. Readers should note; however, that results from a descriptive research design do not permit researchers to make cause-and-effect decisions; nor do descriptive research results determine relationships. Rather, results from a descriptive research design provide information regarding, in this case, the demographic characteristics of community college students who completed a dual credit course while in high school.

2.2 Participants and Instrumentation

Archival data were obtained for the 2012-2013, 2013-2014, and the 2014-2015 academic years from a community college district in Texas. Data were requested for the three aforementioned academic years from the Institutional Research Division at this community college district in Texas. Data that were specifically requested were student gender, ethnicity/race, and dual credit enrollment status. Following the request, data were provided in the form of three excel files, one for each academic year.

3.0 Results

With respect to the first and third research questions, descriptive statistics were calculated for the percentages of male and female students who were enrolled in the community college district from which data were obtained. The highest percentage of community college students who had completed a dual credit course while in high school was females, ranging from 65% in the 2012-2013 academic year to 64% in the 2014-2015 academic year. Readers are directed to Table 1 for a summary of the results for the percentages of male and female students who completed a dual credit course while enrolled in high school.

Table 1Descriptive Statistics for the Percentages of Male and Female Community College Students Who Had Completed a Dual Credit Course While in High School in the 2012-2013, 2013-2014, and 2014-2015 Academic Years

Academic Year	% age and <i>n</i>	%age and n	
	Male	Female	
2012-2013	35.1% (<i>n</i> = 205)	64.9% (<i>n</i> = 379)	
2013-2014	35.5% (<i>n</i> = 164)	64.5% (<i>n</i> = 298)	
2014-2015	36.2% (<i>n</i> = 204)	63.8% (<i>n</i> = 360)	

Concerning the second and fourth research questions, descriptive statistics were calculated for the ethnic/racial diversity of students who were enrolled in the community college district from which data were obtained. The highest percentages of community college students who had completed a dual credit course while in high school were White and Hispanic students, whereas the lowest percentage (5%) was for Black students in the three academic years. The percentages of White students ranged from 37% in the 2012-2013 academic years to 33% in the 2014-2015 academic years. Similarly, the percentages of Hispanic students ranged from 36% in the 2012-2013 academic year to 42% in the 2014-2015 academic years. Table 2contains the frequencies and the percentages by student ethnicity/race for the 2012-2013, 2013-2014, and 2014-2015 academic years. The percentages of community college students who completed a dual credit course while in high school by their ethnicity/race in the 2012-2013, 2013-2014, and 2014-2015 academic years are shown in Figure 1.

Table 2Frequencies and Percentages of Community College Students by Their Ethnicity/Race Who Had Completed a Dual Credit Course While in High School in the 2012-2013, 2013-2014, and 2014-2015 Academic Years

Academic Year	%age and <i>n</i>	%age and <i>n</i>	%age and <i>n</i>	%age and n
	Asian	White	Hispanic	Black
2012-2013	$8.0\% \ (n = 47)$	36.6% (<i>n</i> = 214)	36.0% (<i>n</i> = 210)	4.6% (n = 27)
2013-2014	7.8% (n = 36)	43.5% (<i>n</i> = 201)	36.1% (<i>n</i> = 167)	5.4% (n = 25)
2014-2015	11.7% (<i>n</i> = 66)	32.8% (<i>n</i> = 185)	42.4% (<i>n</i> = 239)	5.3% (<i>n</i> = 30)

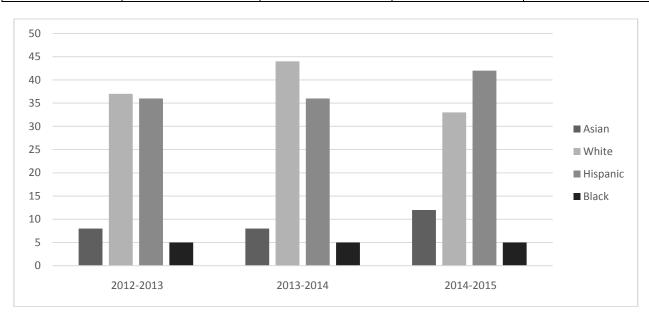


Figure 1. Dual credit enrollment percentage of Texas community college district for four major ethnic/racial groups in the 2012-2013, 2013-2014, and 2014-20 15 academic years

Because data were available for gender within ethnicity/race, a decision was made to calculate the frequencies and percentages for each of the four major ethnic/racial groups separately for male and for female students. In the 2012-2013 and the 2013-2014 academic years, White males had the highest percentage of students (i.e., 50%) who completed a dual credit course while in high school. In the 2014-2015 academic year, Hispanic males comprised the largest ethnic/racial group (i.e., 42%) of community college students who completed a dual credit course while in high school was 14% higher than for White males (28%). Black males consistently had the lowest percentages (5%) of students who completed a dual credit course while in high school across the three academic years. Revealed in Table 3 is a summary of the results for the ethnic/racial percentages of male students who completed a dual credit course while in high school.

Table 3

Descriptive Statistics for the Percentages of Male Community College Students by Their Ethnicity/Race Who Had Completed a Dual Credit Course While in High School in the 2012-2013, 2013-2014, and 2014-2015 Academic Years

Academic Year	%age and n	%age and <i>n</i>	%age and <i>n</i>	% age and <i>n</i>
	Asian	White	Hispanic	Black
2012-2013	11.7% (<i>n</i> = 24)	38.0% (<i>n</i> = 78)	28.3% (<i>n</i> = 58)	3.9% (n = 8)
2013-2014	6.1% (<i>n</i> = 10)	50.0% (<i>n</i> = 82)	29.3% (<i>n</i> = 48)	6.1% (n = 10)
2014-2015	16.2% (<i>n</i> = 33)	27.5% (<i>n</i> = 56)	41.7% (<i>n</i> = 85)	4.4% (n = 9)

With respect to the enrollment of female students by their ethnicity/race in dual credit enrollment, descriptive statistics were calculated for each of the three academic years of data. Hispanic females comprised highest percentage of community college females (i.e., 43%) who completed a dual credit course while in high school. In the 2013-2014 academic year, Hispanic and White females had similar percentages (i.e., 40%) who had completed a dual credit course while in high school. Similar to Black males, Black females consistently had the lowest percentages (i.e.,5-6%) of students who completed a dual credit course while in high school over the three academic years of data. Table 4 contains a summary of the results for the ethnic/racial percentages of female students who completed a dual credit course while in high schoolin the 2012-2013, 2013-2014, and 2014-2015 academic years.

Table 4Descriptive Statistics for the Percentages of Female Community College Students by Their Ethnicity/Race Who Had Completed a Dual Credit Course While in High School in the 2012-2013, 2013-2014, and 2014-2015 Academic Years

Aca	demic Year	%age and <i>n</i>	%age and <i>n</i>	%age and <i>n</i>	% age and n
		Asian	White	Hispanic	Black
20	012-2013	6.1% (<i>n</i> = 23)	35.9% (<i>n</i> = 136)	40.1% (<i>n</i> = 152)	5.0% (<i>n</i> = 19)
20	013-2014	8.7% (<i>n</i> = 26)	39.9% (<i>n</i> = 119)	39.9% (<i>n</i> = 119)	5.0% (<i>n</i> = 15)
20	014-2015	9.2% (<i>n</i> = 33)	35.8% (<i>n</i> = 129)	42.8% (<i>n</i> = 154)	5.8% (<i>n</i> = 21)

4.0 Discussion

Examined in this investigation were the demographic characteristics of students who completed dual credit courses while in high school and then enrolled in a Texas community college. Three academic years (i.e., 2012-2013, 2013-2014, and 2014-2015) of data were obtained from the Institutional Research Office of a large Texas community college district. In this multiyear analysis, females in all three academic years constituted almost two thirds of the community college students in this study who completed a dual credit course while enrolled in high school. With respect to student ethnicity/race, White and Hispanic community college students comprised the two largest ethnic/racial groups in all three academic years who completed a dual credit course while in high school. The percentage of White students who completed a dual credit course in high school decreased over the three academic years from 37% to 33%, although an increase was observed during the timeframe as well. In the last academic year, Hispanic students constituted the ethnic/racial group that had the highest percentage of students who completed a dual credit course while in high school. Similar to all ethnic/racial groups, other than Black student dual credit enrollment, Asian students who had completed dual credit grew from 6% to 9% over the three academic years.

In all three academic years, Black community college students comprised the ethnic/racial group that had the lowest percentage of students who completed a dual credit course while enrolled in high school. The percentage of Black community college students who had completed a dual credit course while in high school was consistently at 5% during each of the three academic years. Thus, the only group of students who did not have increased enrollment in dual credit courses while enrolled in high school were Black students.

Furthermore, in comparing these results with a study that was conducted in the same Texas community college district in seven previous academic years (i.e., 2005-2006 through 2011-2012), an increase was present in the percentage of students who had completed at least one dual credit course (Young, 2013). In the previous seven years, the highest percentage for males was 21.60%, in the 2011-2012 school year compared to 36.2% in the 2014-2015 school year. For females, it was 26.96% in the 2011-2013 school year compared to 63.8% in the 2014-2015 school year. When comparing these results by race/ethnicity from the previous seven years to this present study, Asian enrollment in dual credit courses decreased from a high of 39.46% to a high of 11.7% in the 2014-2015 school year. White enrollment in dual credit courses increased from 30.65% to a high of 43.5% in the 2013-2014 school year. Hispanic enrollment in dual credit courses increased from 20.22% to a high of 42.4% in the 2014-2015 school year. Of note is that Black student enrollment in dual credit courses decreased from a high of 13.87% to 5.4% in the 2013-2014 school year.

An analysis of gender within ethnic/racial groups revealed that Hispanic females and White females had the highest percentage of enrollment in dual credit courses. The percentage of White female enrollment in dual credit courses was consistently at 36% over the three academic years.

The percentage of Hispanic female enrollment in dual credit courses increased from 40% to 43% over the three academic years. Consistent with Black males, Black females comprised the lowest percentage of students who completed a dual credit course while in high school in all three academic years. Furthermore, in comparing these results to the aforementioned study by Young (2013), Asian females and White females had the highest percentage of enrollment in dual credit courses. As with the current study, Black males and Black females comprised the lowest percentage of students who completed a dual credit course while in high school. Enrollment by Black and Asian students dropped by close to 50% of the previous seven years.

To determine the degree to which the demographic characteristics of students who completed a dual credit course while in high school were similar to the demographic characteristics of students who were enrolled in this community college district, data were obtained from the community college district regarding the demographic characteristics of all students who were enrolled. Table 5 contains the percentages by gender of the students who were enrolled in this community college district. Female students comprised about 60% of the student enrollment in this community college district. As such, given that approximately two-thirds of the students who completed dual credit courses while in high school were female, a slight discrepancy was evident with respect to female enrollment in dual credit courses and female enrollment in this community college district. Also present was a lower percentage of male students who completed a dual credit course while in high school in comparison to the percentage of male students who were enrolled in this community college district.

Table 5Percentages of Student Enrollment by Gender at the Texas Community College District for the 2012-2013, 2013-2014, and 2014-2015 Academic Years

Academic Year	Male %age	Female %age
2012-2013	38	62
2013-2014	39	61
2014-2015	39	60

Note. The percentages for this table were retrieved from the website of this Texas community college district and were only present as whole numbers.

Delineated in Table 6 are the percentages by ethnicity/race of the students who were enrolled in this particular community college district in the 2012-2013, 2013-2014, and 2014-2015 academic years. White students had the highest percentage of student enrollment, followed by Hispanic students, with Asian students constituting the ethnic/racial group with the lowest percentage, about 6-7%. In comparing these enrollment percentages with the percentages of students who completed a dual credit course while in high school, clear discrepancies were present with respect to Black students. The percentage of Black students who were enrolled in this community college district was about 19%; however, the percentage of Black students who completed a dual credit course while in high school was about 5%. This difference reflects a strong disparity and a need to increase Black student enrollment in dual credit courses. Readers are directed to Figure 3 for a visual depiction of these differences. Asian students had a higher percentage, about 10%, who completed a dual credit course while in high school than their percentage of the student enrollment, about 7%, in this particular community college district. The ethnic/racial percentages of students who were enrolled in this community college district for the 2012-2013, 2013-2014, and 2014-2015 academic years are depicted in Figure 2.

Table 6Percentages of Student Enrollment by Ethnicity/Race at the Texas Community College District in the 2012-2013, 2013-2014, and 2014-2015 Academic Years

Academic Year	Asian %age	White %age	Hispanic %age	Black %age
2012-2013	6	37	30	19
2013-2014	6	36	32	18
2014-2015	7	34	34	19

Note. The percentages for this table were retrieved from website of this Texas community college districtand were only present as whole numbers.

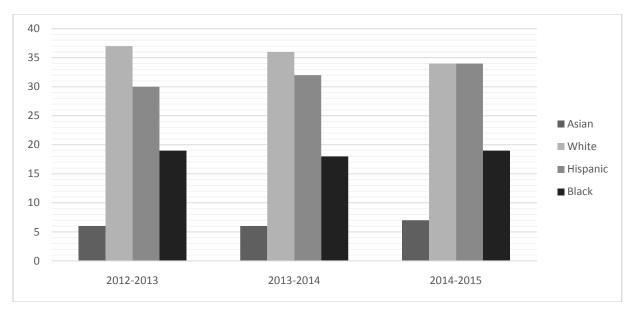


Figure 2. Total enrollment percentage of Texas community college district for four major ethnic/racial groups in the 2012-2013, 2013-2014, and 2014-2015 academic years.

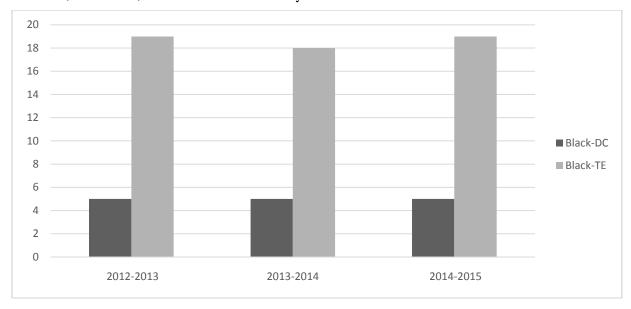


Figure 3. Total and dual enrollment percentages of Texas community college district for the Black students for the 2012-2013, 2013-2014, and 2014-2015 academic years.

4.1 Implications for Policy and Practice

Based upon the results of this multiyear investigation, several implications are present for policy and for practice. First, community college leaders are encouraged to compare the demographic characteristics of their students who completed in dual credit courses while in high school to the demographic characteristics of their student enrollment. Should discrepancies and/or inequities be present, then community college leaders are encouraged to engage in collaborative efforts with K-12 leaders to increase the ethnic/racial diversity of their students who are enrolled in dual credit courses? Second, efforts to ascertain the effects of dual credit enrollment on community college student success should be conducted. Having empirical evidence on the efficacy or non-efficacy of dual credit enrollment on community college student success could be used to encourage more high school students to enroll in dual credit courses.

4.2 Recommendations for Future Research

Based upon the results of this multiyear investigation, several recommendations for future research are warranted.

First, the demographic characteristics of community college students who completed a dual credit course in high school could be determined for more years than were analyzed in this investigation. This study was compared to a previous study at this one institution; however, more academic years need to be analyzed at more institutions to determine if trends continue to show a shift in student enrollment. Furthermore, researchers are encouraged to examine student characteristics at all Texas community colleges to determine if enrollment numbers are shifting due to changes in racial/ethnic enrollments or changes in policy. The extent to which the results of this study, based upon only one community college district, generalize to other Texas community colleges is not known. Third, researchers are encouraged to extend this study to other states to ascertain the degree to which results delineated herein are generalizable to community college students in other states. Fourth, because results in this investigation were only on community college students, researchers are encouraged to replicate this investigation at 4-year universities. Are community college and 4-year university student demographic characteristics similar for students who complete a dual credit course while enrolled in high school? In addition to quantitative investigations, qualitative studies could be conducted to understand why students of different ethnic/racial groups are/are not enrolling in dual credit courses in high school at the same rate. Furthermore, qualitative studies could be conducted to ascertain the reasons why students enroll or do not enroll in dual credit courses while in high school. Finally, the efficacy of dual credit courses on student academic success, both short-term (i.e., first semester GPA) and long-term (i.e., second-semester GPA), could be determined.

5.0 Conclusion

In this multiyear analysis, the demographic characteristics (i.e., gender, ethnicity/race) of students who completed a dual credit course while in high school and then enrolled in a community college district in Texas were examined for the 2012-2013 through the 2014-2015 academic years. In all three academic years, almost two thirds of the students who completed a dual credit course in high school were females. With respect to ethnicity/race, White students constituted the highest percentage for two of the three years evaluated in this investigation, with Black students having the lowest percentage of students who completed a dual credit course while in high school. Comparisons of the demographic characteristics of these students who completed a dual credit course while in high school with the demographic characteristics of students at this particular community college district revealed discrepancies. As such, efforts to increase the ethnic/racial diversity of students who complete dual credit courses are warranted.

References

- Allen, D., & Dadgar, M. (2012). Does dual enrollment increase students' success in college? Evidence from a quasi-experimental analysis of dual enrollment in New York City. *New Directions for Higher Education*, 2012(158), 11-20. doi:10.1002/he.20010
- American Institutes for Research & Gibson Consulting Group. (2011). Research study of Texas dual credit programs and courses. Austin, TX: Texas Education Agency. Retrieved from http://www.tea.state.tx.us/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=2147499085&libID=2147499085
- Barnes, W., & Slate, J. R. (2013). College-readiness is not one-size-fits-all. *Current Issues in Education*, 16(1), 1-11. Retrieved from http://cie.asu.edu/ojs/index.php/cieatasu/article/view/1070
- Barnes, W., & Slate, J. R. (2014). College-readiness rates in Texas: A statewide, multiyear study of ethnic differences. *Education and Urban Society*, 46(1), 59-87. doi:10.1177/0013124511423775
- Barshay, J. (2013). Taking college courses in high school, new dual enrollment data. [Web log comment]. Retrieved from http://educationbythenumbers.org/content/taking-college-courses-in-high-school-new-dual-enrollment-data_33/
- Bureau of Labor Statistics. (2016). *Employment projections*. Retrieved from http://www.bls. gov/emp/ep_chart_001.htm
- Carnevale, A. P., Jayasundera, T., & Hanson, A. R. (2012). *Career and technical education: Five ways that pay along the way to the B.A.* Washington, DC: Center on Education and the Workforce, Georgetown University & Civic Enterprises. Retrieved from

- http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/CTE.FiveWays.FullReport.pdf
- Cates, J. T., &Schaefle, S. E. (2011). The relationship between a college preparation program and at-risk students' college readiness. *Journal of Latinos and Education*, *10*, 320-334. doi:10.1080/15348431.2011.605683
- Combs, J. P., Slate, J. R., Moore, G. W., Bustamante, R., Onwuegbuzie, A. J., & Edmonson, S. L. (2010). Gender differences in college preparedness: A statewide study. *Urban Review*, 42(5), 441-457. doi:10.1007/s11256-009-0138-x
- Conger, D., Long, M. C., &Iatarola, P. (2009). Explaining race, poverty, and gender disparities in advanced course-taking. *Journal of Policy Analysis and Management*, 28(4), 555-576. doi:10/1002/pam.20455
- Conley, D. T. (2007). *Redefining college readiness*. Retrieved from Educational Policy Improvement Center Website: https://www.epiconline.org/files/pdf/RedefiningCollegeReadiness.pdf
- Crouse, J. D., & Allen, J. (2014). College course grades for dual enrollment students. *Community College Journal of Research and Practice*, 38(6), 494-511. doi:10.1080/10668926.2011.567168
- D'Amico, M. M., Morgan, G. B., Katsinas, S. G., &Friedel, J. N. (2015). State director views on community college workforce development. *Career & Technical Education Research*, 39(3), 191-211.doi:https://doi.org.10.5328/cter39.3.191
- Gamez-Vargas, J., & Oliva, M. (2013). Adult guidance for college: Rethinking educational practice to foster socially-just college success for all. *Journal of College Admission*, 221, 60-68.
- Gardner, J. N., Barefoot, B. O., &Farakish, N. (2015). *Your college experience: Strategies for success*. (Two-year college ed.) Boston, MA: Bedford/St. Martin's.
- Gross, N. (2016). *Two places at once: The growth of dual enrollment*. Retrieved from http://www.ewa.org/bloghigher-ed-beat/two-places-once-growth-dual-enrollment
- Harvey, D. W., Slate, J. R., Moore, G. W., Barnes, W., & Martinez-Garcia, C. (2013). College readiness gaps: A review of the literature. *Journal of Education Research*, 7(3), 181-204.
- Hickox, S. A. (2015). The job-relatedness and business necessity of the "New and Improved" high school diploma. *Berkeley Journal of Employment & Labor Law*, 36(1), 43-121.
- Hillman, N., Tandberg, D., & Gross, J. (2014). Market-based higher education: Does Colorado's Voucher Model improve higher education access and efficiency? *Research in Higher Education*, 55(6), 601-625.doi:10.1007/s11162-013-9326-3
- Johnson, B., & Christensen, L. (2012). *Educational research: Quantitative, qualitative, and mixed approaches* (4th ed.). Thousand Oaks, CA: Sage.
- Khazem, J., &Khazem, H. (2012). Dual enrollment: The way forward. *International Journal of Education Research*, 7(2), 135-150.
- Kilgore, W., & Taylor, A. (2016). Dual enrollment in the context of strategic enrollment management: An insight into practice at U.S. institutions. Washington, DC: American Association of Collegiate Registrars and Admissions Officers.
- Kotamraju, P., & Blackman, O. (2011) Meeting the 2020 American Graduation Initiative (AGI) goal of increasing postsecondary graduation rates and completions: A macro perspective of community college student educational attainment, *Community College Journal of Research and Practice*, 35(3), 202-219. doi:10.1080/10668926.2010.526045
- Lee, K. M., & Slate, J. R. (2014). Differences in advanced achievement outcomes for Texas students as a function of economic disadvantage. *Journal of Education Research*, 8(3), 138-149.
- Lundy-Wagner, V. C. (2015). Coming out of the shadows: Rethinking the education policy agenda for diversity and HBCUs. *New Directions for Higher Education*, 2015(170), 91-101. doi:10.1002/he.20134
- Mangan, K. (2014, February). Is faster always better? *The Chronicle of Higher Education*. Retrieved from http://chronicle.com/article/Is-Faster-Always-Better-/144781/
- Moore, G., Slate, J. R., Edmonson, S. L., Combs, J. P., Bustamante, R., &Onwuegbuzie, A. J. (2010). High school students and their lack of preparedness for college: A statewide study. *Education and Urban Society*, 42(7), 817-838. doi:10.1177/0013124510379619
- Partnership for 21st Century Skills. (2008). 21st century skills, education & competitiveness. Retrieved from http://www.p21.org/storage/documents/21st_century_skills_education_and_competitiveness_guide.pdf
- Texas Education Agency. (2011). *Dual credit frequently asked questions*. Retrieved from https://www.texarkanacollege.edu/helpdesk/files/2014/06/Dual-Credit-FAQ.pdf
- Texas Higher Education Coordinating Board. (2016). *Dual credit–Frequently asked questions*. Retrieved from http://www.thecb.state.tx.us/index.cfm?objectid=E9397599-AFE9-CC3F-B6F9BF619AAEDA2E

- Voyer, D., &Voyer, S. D. (2014). Gender differences in scholastic achievement: A meta-analysis. *Psychological Bulletin*, 140(4), 1174-1204. doi:10.1037/a0036620
- Young, R. D. (2013). *Dual credit enrollment and GPA by ethnicity and gender at Texas 2-year colleges.* (Doctoral dissertation). Sam Houston State University, Huntsville,TX.
- Young, R. D., Jr., Joyner, S. A., & Slate, J. R. (2013). Grade point average differences between dual and nondual credit college students [Electronic version]. *Urban Studies Research*, 2013, 1-6. doi:10.1155/2013/638417
- Young, R. D., Jr., Slate, J. R., Moore, G. W., & Barnes, W. (2013). Dual credit enrollment: A multiyear study of gender and ethnic differences. *Urban Studies Research*, 2013,1-7. doi:10.1155/2013/269685
- Young, R. D., Jr., Slate, J. R., Moore, G. W., & Barnes, W. (2014a). Dual credit and non-dual credit college students: Differences in GPAs after the second semester. *Journal of Education and Human Development*, 3(2), 203-230.
- Young, R. D., Jr., Slate, J. R., Moore, G. W., & Barnes, W. (2014b). Dual credit programs: A conceptual analysis of the literature. *Journal of Education Research*, 8(1-2), 79-106.