Academic Success and College Readiness: A Study of Predominantly Hispanic Students in South Texas High Schools

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Abstract

The purpose of this study was to determine if there was a significant difference between Early College High School students, ECHS students within a traditional high school, and traditional public high school students in south Texas as pertaining to college readiness. End of Course tests scores for English classes in grades nine and ten were tested. The population comprised of students from a 98% Hispanic and low socio-economic education region. In the state of Texas, EOC scores determine college readiness. Results revealed the ECHS stand-alone model had a significant difference in English EOC scores among the three models.

Keywords

college readiness, Hispanic students, high school, Texas, early college high school, student success

1. Introduction

President Barack Obama set a new goal that the United States would lead the world in college completion by 2020. Along with this goal, President Obama stated, "we must ensure that every student graduates from high school well prepared for college and a career" (United States Department of Education, 2014, p. 3). In order to accomplish this goal, the federal and state governments developed initiatives to support and accomplish college readiness.

As defined by the National Center for Education Statistics college readiness "among high school students can be measured by the actual performance of college students and their correlated scores on ACT tests for English, mathematics, readings and science" (NCES, 2011, para. 1). Such markers of performance have been determined by the U.S. government as markers of the inclination for those transitioning from high school to have potential success in institutions of higher education. Research into variables that could indicate the necessary attributes needed by students to succeed even after college admission has been and continues to be a focus by national and state governments. Additionally, states are looking for successful strategies and the implementation of policies which may garner higher rates of college ready students graduating from the K-12 system (Greene & Greg, 2003).

In 2007 ACT released figures indicating of those high school graduate students tested only seven percent of Hispanic students were considered college ready (ACT, 2007). With efforts to continue to track high school graduate college readiness, a 2010 report from the organization showed an increase of Hispanic high school graduate college readiness to 11%. By 2015, ACT reported data specific to the population of Hispanic students seeking enrollment in college illustrating an increase in readiness to 14% (ACT, 2015). Whereas the increase is promising, as noted in the report, "one of every four public school students is Hispanic, and those numbers are expected to increase in the coming years" (ACT, 2015, para. 3).

After the adoption of House Bill 1 in Texas, early college high schools bloomed across the state. Early college is a design for high schools that is based on the principles of academic rigor combined with the opportunity to save time and money. Early college high schools "blend high school and college in a rigorous yet supportive program, compressing the time it takes to complete a high school diploma and up to the first two years of college" (Jobs for the Future, 2012, p. 1). As Texas worked to implement and provide Early College High School (ECHS) opportunities for high school students, the state legislature, again, implemented additional requirements for college readiness.

During the fall semester of 2003 it was written in the Texas Education Code 51.3062 that "students attending Texas public institutions of higher education must be in compliance with the Texas Success Initiative (TSI) in order to enroll in public institutions of higher education" (THECB, 2012, p. 1). Even though early college high schools may provide opportunities for students to accelerate, students may only enroll in college courses if they have met the Texas standards set by the TSI. TSI standards, set by the state of Texas, determines the college readiness of public school students.

Closing the achievement gap is an issue that continues to adversely affect students in public schools. In Texas, secondary students from low-socioeconomic (SES) backgrounds appear to have a corresponding low college readiness and when they graduate are not ready to meet the academic standards of college (Chapa, Galvan-De Leon, Solis, & Mundy, 2014). Despite being ranked among the most globally competitive economies, Texas ranks 24th in educational attainment (THECB, 2013). There exists a problem within the Texas public school system in getting students ready for college (Chapa et al., 2014). Too many students are entering postsecondary school sunprepared for the rigors of college level course work.

According to the United States Census Bureau (2013), of the total population in the United States 17.4% are of Hispanic race. Texas has a Hispanic population of 38.4% and the four southernmost Texas counties (Willacy, Cameron, Hidalgo, & Starr, n.d.) are listed as predominantly Hispanic (92.5%). It was also reported that 36.9% of the population in South Texas lives below the poverty line; whereas the population living below the poverty line for the entire state of Texas is 17.4%. The poverty level for the United States is 14.8%. There is twice as more poverty in South Texas than in the United States. In South Texas, only 11.9% of the adult population has obtained a bachelor degree or higher, whereas Texas is at 27.1% and the United States is at 29.3%. According to the THECB (2013), only 28.4% of

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Hispanic students in the state of Texas enroll in a public college or university. Therefore, there is a need to increase the number of college degrees and by corollary college readiness for Hispanic and economically disadvantaged students in South Texas. The most recent educational reform initiative in the state has been to implement Early College High School (ECHS) which replicates the national ECHS model developed by Jobs for the Future and University Park School in Massachusetts (Dessoff, 2011).

1.1 The Conceptual Framework

The purpose of this study was to determine if there was a significant difference between traditional and ECHS models and to determine their effect on college readiness in English classes by utilizing grade nine and ten End of Course (EOC) tests while controlling for grade eight State of Texas Assessments of Academic Readiness (STAAR) scores at a South Texas school with predominantly Hispanic students. To guide this study, a conceptual framework describing key features of a traditional high school, ECHS, and the TSI for college readiness provide an overview of the two high school models and the college readiness expectations in the state of Texas.

1.1.1 Conceptual Framework for High School

Most high schools in the United States have a diploma plan that mandates the specific classes to be taken in order to graduate from high school. In Texas, high school students in grades nine through 12 have an option to graduate with either a minimum, recommended, or distinguished achievement diploma (TEA, 2014). English classes are mandatory courses as part of the core content area identified by the state.

1.1.2 Conceptual Framework for ECHS

As stated in Chapa et al. (2014), "Early college is a design for high schools that is based on the principle of academic rigor" and college readiness so students are prepared for the demands of college (p. 3). An ECHS also focuses on acceleration by providing "the students with the opportunity to simultaneously attain a high school diploma and college credit hours up to and including a 60-credit associate's degree during a four- or five-year high school program" (p. 3). The goal of an ECHS is to ensure college readiness.

There are two ECHS models. In the ECHS within a school model, the ECHS is a separate unit within the traditional high school. Classrooms are within close proximity to each other, usually the same hallway(s). An administrator and counselor is assigned to work directly with the ECHS student population. This model allows for ECHS students to participate in the same extra-curricular and other programs of the traditional high school. The greatest benefits are that all students on the campus are provided college awareness and readiness opportunities and teachers can share ideas and techniques (Jobs for the Future, 2014).

In the ECHS stand-alone model, the ECHS is a separate, smaller high school campus. Typically the ECHS located on a college or university campus. The campus is not a magnet school. However, the environment of the school stimulates a college-going culture (Bojorquez, 2014).

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Besides the structural and cultural design, the ECHS model also incorporates a strong Common Instructional Framework (CIF). The lesson delivery and instruction is centered on the CIF. According to Dessoff (2011), the power behind the pedagogical approaches is "when teachers in a school use them consistently, strategically and well" (p. 1). The CIF consist of strategies such as collaborative group work, writing to learn, literacy groups, questioning, classroom talk and scaffolding.

1.1.3 Conceptual Framework for College Readiness

Conley stated "college readiness is fundamentally different from high school" completion because the rigor and expectations of college are different from high school (as cited in Chapa et al., 2014. p. 4). A high school diploma alone does not ensure college readiness. Therefore, the TSI was updated and defined in 2003. According to the THECB (2014), "The standards were an effort to create the P-16 continuum and marked the first formal partnership between the TEA and THECB" (as cited in Chapa et al., 2014, p. 5).

2. Review of the Literature

Despite the decades of education reform efforts in the United States, traditional public high schools are not meeting the needs of students of color or the needs of students from low-socioeconomic households, such as those in South Texas (Webb & Gerwin, 2014). To assist with this gap, the federal government through various grant opportunities has supported the ECHS initiative. The ECHS model implemented in South Texas offers both students of color and low-socioeconomic students the opportunity to prepare for and start college while still enrolled in high school.

The ability of the United States to remain competitive in the global economy requires that the workforce is skilled and knowledgeable because most jobs "in the fastest-growing industries will require individuals with some postsecondary education" (Wyatt, Smith, & Proestler, 2014, p. 3). Increased emphasis on college and career readiness in high school provides students with an increased likelihood of being successful in college. According to the Wyatt, Smith, and Proestler (2014), students who exhibited being on target for college readiness in high school tend to have higher rates of post-secondary success.

The ECHS model is a reform strategy that has been incorporated into many high schools across the country. The goal of an ECHS is to ensure students are college ready by the time they graduate high school. The ECHS model provides public high school students with college courses. Therefore, the ECHS provides a more rigorous yet supportive program where students can graduate with a high school diploma and up to two years of college credits (Jobs for the Future, 2013).

1) Dual Enrollment/Dual Credit

Some reformers believe early college and dual enrollment increase academic engagement and performance (Howley & Duncan, 2013). Dual enrollment allows high school students to enroll in college courses and receive college credit while still in high school (Berger et al., 2013). Most students who participate in a dual enrollment program earn college credit for free. Texas Education Code, Sec.

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28.009 requires all high schools to provide up to twelve hours of college credit opportunities for junior and senior-level students. Approximately 23% of early college high school students earned an associate's degree by the time they graduated from high school (Berger et al., 2013). According to Rodriguez, Hughes, and Belfield (2012), students in a career-focused dual enrollment program with support had higher high school graduation rates, higher rates of persistence in college and accumulated more college credits than nonparticipating peers (Rodriguez, Hughes, & Belfield, 2012).

2) Enrollment Requirements

Research also indicates that "despite the availability of dual enrollment programs" during in the 2010-2011 school year, "less than 10% of public school students took advantage of" the opportunity (Berger et al., 2014, p. 2). One reason participation levels were low was because the dual credit opportunities offered required a pre-test to determine college readiness. Texas high school students must meet the TSI requirements for college readiness in order to take advantage of dual enrollment opportunities. As determined by the Texas Higher Education Coordinating Board (2014), the 2014-2015 phase-in minimum scores to qualify for dual credit are listed in Table 1.

Table 1. Texas College Readiness Indicator: Minimum Test Scores for Reading

Test	Reading
ACT	19
SAT	500
STAAR EOC	English II-4000 combined Reading and Writing score
TSI	331

2.1 College Readiness

In 2000, the Center for Educational Policy Research (CEPR) launched a large-scale project. CEPR was charged with the goal to define the specific knowledge and skills required for success in college (Hoffman, Vargas, Venezia, & Miller, 2007). While Texas is beginning to reform high schools and replicate the national ECHS model, the Texas Legislature mandated a P-16 Initiative. In 2007, the development of the College and Career Readiness Standards were drafted through a collaborative effort of high school and university faculty (THECB, 2014).

Due to federal mandate of states developing college readiness standards, the new TSI assessment was implemented in the fall of 2013. According to Morales-Vale (2014), only 40% of students who were administered the TSI assessment in the fall of 2013 met the threshold of college readiness. Therefore, 60% of students were under the threshold of Adult Basic Education (ABE) when they entered college. There are different levels of ABE, and it is the responsibility of the college to place these students in an appropriate class placement (Morales-Vale, 2014). High school students may also be considered college ready if they pass the English I and English II EOC tests along with the English III class; therefore,

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they may be exempt from taking the TSI assessment.

3. Methods and Procedures

The principal objective was to determine differences between Early College High School (ECHS) students, ECHS students within a traditional high school, and traditional high school students in South Texas on college readiness as measured by the STAAR EOC exam in English I and English II.

3.1 Research Design

The methodology utilized was quantitative using ex-post facto data. The research design employed a pre-experimental Alternative Treatment Post-Test-Only with Nonequivalent Groups Design (Creswell, 2014). The three treatments included students from three different high school models: ECHS stand-alone, ECHS within traditional high school, and the traditional high school. The three treatment groups were compared on college readiness as measured by English I and English II EOC exams. These EOC exams reflect the Texas Success Initiative (TSI) readiness standards/exemptions. The new TSI assessment was not utilized for this study because the EOC exams qualify as a TSI readiness exemption. This study also attempted to measure any differences between the dependent variable (EOC tests) at the different grade levels during which the English EOC tests were administered.

To determine the impact of ECHS and non-ECHS educational models and any differences of the models on English EOC exams on predominately Hispanic students in South Texas high schools, two research questions were posed:

3.2 Research Questions

The questions to be addressed during this investigation include the following:

1) Is there a difference among grade nine students who have completed English I in an ECHS stand-alone, ECHS within a traditional school, and traditional school on reading as measured by the EOC test scores while controlling for grade eight STAAR reading scores at schools with predominantly Hispanic students in South Texas?

2) Is there a difference among grade 10 students who have completed English II in an ECHS stand-alone, ECHS within a traditional school, and traditional school on reading as measured by the EOC test scores while controlling for grade eight STAAR reading scores at schools with predominantly Hispanic students in South Texas?

3.3 Population and Sample

The public high schools that were utilized for this study are located in South Texas in the Education Service Center Region 01, near the United States-Mexico border. The demographics include 98.9% Hispanic students and 89.0% qualify for free and reduced lunch, an indicator of low socioeconomic status. The high schools reviewed for the study also have English language learners and at-risk students enrolled at the institutions.

Participants for this sample included the same students in both grade nine and grade 10 who are enrolled in an ECHS stand-alone high school, ECHS school within a school, and traditional high school.

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Therefore, the study looked at the same students for two consecutive years. The measures that were used for this study include the STAAR EOC exam that is mandated for all high school students in Texas. Any student without a grade eight STAAR test or not taking the EOC test was removed from the sample. Table 2 indicates the demographics for the participating high schools (TEA, 2014).

Table 2. Demographics

Type of School designs	Enrollment ECHS	Enrollment Traditional	% Hispanic	% Free and Reduced Lunch
ECHSSt and-alone	422	N/A	98.3	82.2
School within a school	200	1,806	99.1	90.7
Traditional	N/A	1,798	99.4	85.0

Note. The data was retrieved from TEA 2012-2013 School Report Card.

4. Results

A MANCOVA test was conducted using grade eight STAAR reading scores as a covariate and grade nine EOC scores from 2012-2013 and grade10 EOC scores from 2013-2014. The same students were measured for two consecutive years in 2013 (grade nine) and again in 2014 (grade ten).

4.1 Descriptive Statistics

Descriptive statistics for the sample used in the study are provided in Table 3. There were a total of 816 high school students from the three types of high schools: Traditional=324, School within a school=383 and ECHS Stand-alone=109.

Table 3. Frequency and Descriptive Statistics for Types of School Models (N=816)

Factors	N	ECHS Membership	NOT ECHS
Traditional	324	0	324
School within a school	383	118	265
ECHS Stand-alone	109	109	0

The ethnicity of the student sample in this research included an overwhelming number of Hispanic students (99.3%). Frequency for the variable ethnicity was N=810 Hispanic students with N=6 non-Hispanic students. Therefore, student ethnicity was not used as a variable.

The MANCOVA was performed with the grade eight STAAR Reading tests scores as the covariate and the grade nine and ten English EOC test scores as the dependent variables. The data in Tables 4 and 5 were used to determine if there was a significant difference between types of high school models. Pairwise comparisons were used to determine that for grade nine English I EOC, the ECHS stand-alone (*M*=1959.26, SD=199.31) scored significantly higher than the traditional high school (*M*=1883.73,

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SD=266.08) p=0.04. The ECHS stand-alone (M=1959.26, SD=199.31) also scored significantly higher than the school within a school (M=1865.62, SD=241.95) p=.002. In grade ten English II EOC, the ECHS stand-alone (M=4086.76, SD=408.38) scored significantly higher than the traditional high school (M=3786.22, SD=491.11) p<.000. The ECHS stand-alone (M=4086.76, SD=408.38) scored significantly higher than the school within a school (M=3740.20, SD=473.10) p<.000. The school with in a school was not significantly different from the traditional high school in grade nine and grade ten English EOC in the pair wise comparisons.

Table 4. Frequency (N), Mean (M) and Standard Deviation (SD) for Types of School Models

Variable	N	Mean	Standard Deviation
Traditional			
Grade nine	324	1883.73	266.08
Grade ten	324	3786.22	491.07
ECHS within a school			
Grade nine	383	1865.62	241.95
Grade ten	383	3740.20	473.10
ECHS			
Grade nine	109	1959.26	199.31
Grade ten	109	4086.72	408.38

Note. Total for N=817.

Table 5. Pair Wise Comparisons for Types of School Models

Variable	p
Grade 9 English I EOC	
ECHS stand-alone vs traditional	.040
ECHS stand-alone vs ECHS within a school	.002
Grade 10 English II EOC	
ECHS stand-alone vs traditional	.000
ECHS stand-alone vs ECHS within a school	.000

Note. p<.05.

6. Discussion

The sample for this study was predominantly Hispanic high school students from a school district in South Texas. In the United States, each state set their own criteria for college readiness standards. In Texas public schools, students can be classified "college ready" according to the scores they receive on the English I and II EOC tests. The English I and English II EOC test scores were used to determine if

students would be college ready.

By performing a MANCOVA to test the data, this study determined there was a significant difference between an ECHS stand-alone in both grades nine and ten versus traditional and ECHS within a school models in both grades nine and ten. Students in an ECHS stand-alone outperformed students in a traditional and ECHS within a school in both English I and English II EOC tests.

The purpose of this study was to evaluate the effectiveness of various types of high school models-traditional, Early College High School (ECHS) school within a school, and an ECHS stand-alone—on college readiness by utilizing student achievement as measured by the English end of Course (EOC) test. For the study, three high schools located in South Texas were sampled. After data analysis through testing the data using a MANOVA, it was determined that there was a significant difference between an ECHS stand-alone vs. traditional and ECHS within a school models. Another outcome of the testing determined that for this majority Hispanic student public high school population, English test scores improved from one year to another. Under the NCLB Act, "states have been required to improve student achievement levels at a faster pace and with strategies that have been deemed as researched-based", which has led to national and state reform initiatives as well as to the implementation of ECHS (Garcia, 2012, p. 57). According to Educate Texas (2014), during the 2013-2014 school year, Texas had 57 high schools designated as ECHS. The ECHS model continues to serve as a reform initiative across the country.

6.1 Implications for Practice

The ECHS initiative was a project started by the Bill and Melinda Gates Foundation (Bill & Melinda Gates Foundation, 2014). For over a decade now, the ECHS initiative has been growing within the state of Texas and around the nation (Berger et al., 2014). The goal for this innovation was to provide college courses through dual enrollment and create and to promote a college-going culture for minority students, students identified as low-socioeconomic in status, and first-generation college students. According to Berger et al. (2014), research on application of the ECHS as an instrument to increase college readiness is promising.

Overall, the study revealed that an ECHS significantly impacts a high school experience with the student earning more college credits, the student having a more rigorous academic experience, a stronger development of college going culture amongst students, and an increase in stronger college applications and financial aid support than the comparison group (Berger et al., 2014).

To further showcase the positive outcomes of the application of the ECHS model, a study conducted by Edmunds (2010) determined that ECHS students had better attendance, lower suspensions, and higher levels of engagement in comparison to those student who did not attend the ECHS. The study also revealed that there was a gap between Algebra I and English I completion rates. In relation to specific ethnic student populations, the results from the study revealed that ECHS minority group completed 79.4% of the two classes, while the minority group not part of the ECHS model completed only 57.3% of the Algebra I and English I classes (Edmunds, 2010). As such, the results showcased that students

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who participate in an ECHS model had better benefits as well as outperformed those who did not attend an ECHS.

Edmunds et al. (2012) continued the work of the previous research study to include promising practices of ECHS. The study found that the ECHS model made "substantial progress toward creating an environment where all students graduate from high school prepared for college and work" (Edmunds et al., 2012, p. 156). Additionally, the researchers concluded that ECHS are "significantly increasing the number of students who are on track for college" (Edmunds et al., 2012, p. 156). Therefore, ECHS have a positive impact on student success in both academics while in high school as well as with college readiness.

7. Limitations of the Research

The potential lack of probability sampling may have a limitation on the sampling strategy. There are over 100 stand-alone ECHS in the state of Texas; however, there is only one school district in the entire state that has an ECHS stand-alone, an ECHS within a school and a traditional high school. Another possible limitation to this study is the student demographics. The student demographics of ECHS in Texas and across the country do not all reflect the same low-socio demographics as this study.

Future studies with results from the testing of additional samples from ECHS institutions in Texas could warrant additional insight into the application of the ECHS innovation. Additionally, further exploration into the overall success of ECHS students beyond the Algebra I and English I class completion rates would provide a wider picture into the ECHS model as well as how such an innovation impacts academic success in high school, matriculation patterns in high school, and persistence into higher education for the Hispanic student population in the state of Texas. Further, while this particular ECHS program is within the state of Texas, and the study is limited to a small portion of the population within the program, continued investigation and study into efforts to increase the student success and college readiness of minority populations around the country. With the percentage of Hispanic/Latino students growing within school districts across the U.S., determination of policies with positive impact is vital.

8. Conclusion

Based on the results of the study presented in this paper, the research data strongly suggests that school districts utilize ECHS stand-alone model to decrease the achievement gap and support college readiness. Other research conducted by Edmunds et al. (2012) and Berger et al. (2014) also supports the implementation of ECHS for student academic success and college preparation and, therefore, affirms the results and recommendations by these authors.

Application of the ECHS stand-alone model is also determined by this study to be beneficial for students of color. Research conducted included 98% of Hispanic students who were successful in English I and English II, both core classes which are requirements for high school graduation. Further,

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the educational school districts in South Texas includes a large number of low socio-economic student population. As that students within this population showed a significant increase in EOC results for English I and II when in an ECHS stand along model, it can be inferred that such an innovation can be of benefit for students at or near the poverty level. It has been established that academic success in English I and II core classes leads to students being college ready. Therefore, the implementation of an ECHS stand-alone model is highly recommended for student academic success and college readiness.

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