COLLEGE READINESS INDICATORS OF FIRST-GENERATION HISPANIC HIGH SCHOOL STUDENTS IN SOUTH TEXAS

A Dissertation

by

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ABSTRACT

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The purpose of this study was to determine if a relationship exists between first generation Hispanic student participation in an AVID program and college readiness. The dependent variable, college readiness, was measured by passing the Texas Success Initiative (TSI) Reading, Writing, and Math assessment. Predictor variables included Advancement Via Individual Determination (AVID) elective course participation, Advanced Placement courses taken, Advanced Placement Exams taken, Advanced Placement Exams passed, Dual Enrollment Courses Passed, and ACT Composite score. A factor analysis was performed on the predictor variables, resulting in three independent variables for the study: AVID elective course participation, Average of T-scores for Dual Enrollment and ACT, and Average of T-scores for AP.

This is a quantitative study that utilized pre-existing data from four high schools in a large South Texas school district. A logistic regression analysis was used to examine if AVID elective course participation, Advanced Placement courses taken, Advanced Placement Exams taken, Advanced Placement Exams passed, Dual Enrollment Courses Passed, and ACT Composite scores were a function of TSI scores in Reading, Writing, and Math. The null hypothesis for the present study were tested at the .05 level of significance.

The review of literature on college readiness provided the theoretic framework for this study. The theoretic framework was based on David Conley's (2007) Theory of College Readiness.

The findings from this study indicated the following: 1) AVID elective course participation in high school is a function of TSI scores in Reading, Writing, and Math, 2) Average of T-scores for Dual Enrollment Courses and ACT scores were a function of TSI scores in Reading, Writing, and Math, 3) Average of T-scores for AP were not a function of TSI scores in Reading, Writing, and Math, 4) AVID elective course participation in middle school was not a function of TSI scores in Reading, Writing, and Math.

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CHAPTER I

INTRODUCTION

"Education, then, beyond all other devices of human origin, is the great equalizer of the conditions of men." (Mann, 1868, p 669).

This dissertation examined the phenomenon of college readiness. Specifically, it examined college readiness in Hispanic first-generation college students. To gain a true understanding of college readiness, this dissertation examined all facets of college readiness, including its roots in the "differences between the test scores of minority and/or low income students and the test scores of their White peers" (National Education Association, 2014 pg 1), also known as the achievement gap. This paper explored the challenges facing first-generation college students, as well as Hispanic students, and focused on research tested methods of overcoming said challenges.

Education is the Great Equalizer. This one phrase has been echoed throughout the annals of education since it was written by Horace Mann in his 12th Annual Report to the Massachusetts State Board of Education (Mann, 1868). Quite simply put, it means education has the power to allow individuals to rise to their greatest potential, regardless of their beginnings. Education levels the playing field. But what happens when the leveler is not level? According to the 2010 United States Census Report, although more African American and Hispanic young adults (ages 18-24 years old) in the United States graduate from high school, only 76% of African American

young adults and 69% of Hispanic young adults graduated from college (United States Census, 2010).

The last three decades have been rife with educational reform directed at both strengthening the American education system and closing what has been termed the "achievement gap". The National Education Association (NEA) has defined the achievement gap as the "differences between the test scores of minority and/or low income students and the test scores of their White peers" (National Education Association, 2014 pg 1).

A Nation at Risk: The Imperative for Educational Reform, a study created at the behest of National Commission on Excellence in Education (1983), reported that the United States of America's public education system was not meeting expectations. This report, created at the behest of President Ronald Reagan by the NCEE, recommended a refocusing on college prep programs by way of strengthening graduation requirements to include specific numbers of courses in math, English, science, social studies and foreign language. The report also called for increased accountability, which evolved into both measurable standards based on content and performance, as well as the assessments designed to evaluate mastery of these standards (NCEE, 1983)

If *A Nation at Risk* set the tone for national education reform based on rigorous curriculum, 2001's No Child Left Behind Act (NCLB) set the reformist tone focused on closing the achievement gap. Achievement gaps, as previously defined can occur within differences between the test scores of minority and/or low income students and the test scores of their White peers (NEA, 2014). Achievement gaps can be experienced by various groups including racial and ethnic minorities, English Language Learners (ELLs), students from low-income families, and gender groups. (NEA, 2014).

The National Center for Educational Statistics (NCES) creates an annual progress report called the National Assessment of Educational Progress (NAEP) covering student achievement across multiple domains. Results are published every two years measuring students across the country for 4th, 8th and 12th grades. Data yields from the 2013 NAEP suggest an achievement gap that forms in elementary school and widens through high school (United States Department of Education, 2013). Results are codified at four levels of performance, *below basic proficiency, at basic, at proficient and advanced*. The following table illustrates reading proficiencies based on ethnicity for the 2013 NAEP.

Table 1

NAEP Reading Proficiencies by Ethnicity

Ethnicity	*4th Grade*	*8th Grade*	*12th Grade*
Hispanic	43/34/19/04	32/46/21/01	37/39/22/02
African American	48/33/16/03	39/44/16/01	44/40/15/01
White	48/33/16/03	13/39/41/06	16/36/40/08

Reported as: % Below Basic/ % At Basic/ % At Proficient/ %Advanced

(United States Department of Education, 2013a)

The data reported in the table illustrates that although all ethnic groups experience reduced proficiency over time, White students are over four times as likely to perform at an advanced level of reading proficiency compared to their Hispanic and African American peers. By 12th grade, Hispanic students are over twice as likely to be below basic proficiency compared to their White peers, with African American students nearly three times as likely to be rated at below basic proficiency (United States Department of Education, 2013a).

While the 2015 NAEP 12th Grade scores have not been published as of date of writing, the 4th grade and 8th grades proficiency levels are available to indicate at or above proficiency per ethnic group. As of the 2015 NAEP in 4th grade, Hispanic students are 21% *at or above proficiency*, African American students are at 18% *at or above proficiency* and White students

are at 46% *at or above proficiency*. As of the 2015 NEAP in 8th grade, Hispanic students are 21% *at or above proficiency*, African American students are 16% *at or above proficiency* and White students are 44% *at or above proficiency* (United States Department of Education, 2015a). Even without the benefit of 12th grade scores, an achievement gap based on ethnicity clearly exists. This achievement gaps between Hispanic, African American, and White student peers results in lower admission and graduation rates from post-secondary institutions (Clinedinst, Hurley & Hawkins 2011; Lynch and Engle, 2010).

In an environment where individual states were responsible for academic accountability and achievements, NCLB established performance mandates at the federal level (Hess & Finn, 2004). Under the auspices of NCLB, the federal government has the ability to reduce funds to states that fail to make academic progress and reward states that display achievement. While states may elect to opt out of NCLB, they run the risk of forfeiture of federal Title I funding. The accountability measures embedded within NCLB are intended to close the achievement gap between high and low achieving students with an emphasis on gaps between minority and-non minority students (NCLB, 2002, section 101).

Reform programs are nothing new and predate NCLB, as well as *A Nation at Risk*, by approximately 30 years. The Higher Education Act (HEA) of 1965 was designed to increase college enrollment and completion rates for economically disadvantaged and underrepresented students (Pitre & Pitre, 2009). The first triplet of programs to arise from the HEA of 1965 was Upward Bound, Educational Talent Search and Student Support Services, referred to as the TRIO Programs (Pitre & Pitre, 2009). Programs such as Upward Bound, Educational Talent Search, and the Gaining Early Awareness and Readiness for Undergraduates (GEAR UP) Program target low-income, first-generation, and minority high school students and

offer tutorials, counseling, and enrichment activities (Pitre & Pitre, 2009; Lozano, Watt & Huerta, 2009; US Department of Education, 2015b). These programs proved to be the first of many reform efforts aimed at creating equal educational activities for all students.

Advancement Via Individual Determination (AVID) is a college readiness system designed to serve underachieving students who have academic potential, but may be lacking in family, financial and/or community support (Watt, Huerta, & Alkan, 2011). Although AVID pre-dates No Child Left Behind by approximately twenty years, the AVID college readiness system has been used as a model of school and education reform. In1999, twenty-six schools, spread out over seven school districts in the State of Texas implemented AVID as their school-wide reform model (Watt, Yanez & Cossio, 2003). These schools were granted Comprehensive School Reform Demonstration (CSRD) grants from the federal government through the Texas Education Agency as a means to change the method in which instruction was conducted and access to more rigorous coursework was granted (Watt et al., 2003).

The AVID college readiness system targets students in the academic middle, students who earn Bs, Cs, and Ds but who have the potential and willingness to succeed in a more rigorous environment (Watt, Johnston, Huerta, Mendiola, and Alkan, 2008). AVID strives to shift students from general education classes to a college preparatory track (Advanced Placement or Dual Enrollment) (Black, Little, McCoach, Purcell, & Siegle, 2008; Watt, Huerta & Cossio, 2004). One of the unique hallmarks of AVID is the inclusion of an elective course that serves as a foundation of support for college readiness and general academic preparation (Huerta, Watt, & Reyes, 2013). The AVID elective class places a focus on writing, collaboration, organization, reading, and effective note-taking, utilizing the Cornell Note Taking system (Black et al., 2008; Watt et al., 2007). AVID operates on the principle that academically average students with

potential will rise to expectations and challenges placed before them and become college ready (Contreras, 2011).

Achievement gaps, high drop-out rates, and inequitable access to higher education for first generation college students, low income families, and ethnic minorities have plagued the United States education system for years (Martinez & Klopott, 2005). While the achievement gap is traditionally associated with accountability via standardized test scores, it also can affect college readiness. A 2007 study showed that only 22% of low income students who graduate from high school are academically prepared for a post-secondary environment and of those who are academically prepared for college, only 42% actually progress to degree completion (Goldberg, 2007). In a February 2009 address to the Joint Session of Congress, President Barack Obama asserted that greater strides must be made to increase the college-going rates of all young Americans, specifically among students from minority and low income populations. President Obama stated "By 2020, America will once again have the highest proportion of college graduates in the world (Obama, 2009, p 7)."

Perna (2006) indicates that access and success in higher education is shaped by a multitude of factors including academic achievement, family background, high school culture and competitiveness. In addition, Braxton (2000) stated that family education, social status, socio-economic status, and student ability can be reliable indicators of status attainment after college. Additionally, first-generation college students may face ideological and perception-based issues (i.e. self-efficacy) as a factor in high school senior year retention in an AVID program, which can impact their perceptions of college matriculation (Watt et al, 2008). A study by Kerpelman and Mosher (2004), which surveyed low-income, low-education households

of middle school and high school students found that positive social self-efficacy lead to more positive beliefs concerning future education and career orientation in low-income students.

Llamas, Lopez, and Quick (2014) explored the effects of AVID from the student perspective. The researchers used a mixed methods approach to study perspectives of 161 high school students in California. Students repeatedly referenced feeling higher levels of social support from teachers, resulting in a higher sense of accountability, self-efficacy, problem-solving and self-awareness.

A 2013 study by Parker, Eliot, and Tart examined the influence of AVID on African American male students. While interviewing students, researchers found emergent themes from interviews including supportive relationships forged in the AVID classroom, higher expectations, and a desire to do better academically. Several students attributed increased academic success to close teacher-student relationships, further supporting the concept that the AVID college-readiness system can provide the tools and support for underrepresented students.

In this era of increased focus on accountability with schools under constant threat of punitive response from the federal government for not meeting student achievement goals set by statute (NCLB, 2002), it is possible for educators to lose sight of the bigger picture. Ten years ago, the United States led the world in college completion rates, currently the US has fallen behind at least ten other countries in the number of degrees attained (Kelly, 2010). Furthermore, despite increases in numbers of underrepresented students enrolling in and completing degrees, there are still degree attainment gaps among minority and low socio-economic status students (Weldon, 2009). It is important for educational leaders to focus not only on reform in regards to high school accountability, but in college access and success for all students as well. Darling-Hammond, Ancess, and Ort (2002) state that at-risk high school

students benefit from skill-based instruction including "how to study, how to approach academic tasks, what criteria will be applied and how to evaluate their own and others' work" (p 658). It is incumbent on educational leaders to focus on the whole, not just the sum of the parts.

Statement of the Problem

The problem explored was college readiness for first-generation Hispanic high school students. Underrepresented minority and economically disadvantaged students have disproportionately lower college completion rates as compared to their White peers (Oteri, Rivas, & Rivera, 2007). Lohfink and Paulson (2005) indicate that first-generation students tend to be disproportionately non-white. A 2015 article by Jens Krogstad of the Pew Research Group indicates although more Hispanics are enrolling in post-secondary education institutions than ever before, they still lag behind other ethnic groups in four-year degree attainment. In 2013, 15% of Hispanics between the ages of 25 to 29 held a bachelor's degree or higher, compared to 40% of whites (Krogstad, 2015). College readiness has shown to be a predictor of persistence and success in college for Hispanic students (Arbona and Nora, 2007; Wassmer, Moore, and Shulock, 2004). When combined with data that suggest first-generation students are more likely to delay enrollment or require remediation in the form of remedial coursework than students whose parents attended post-secondary education, attending college becomes a daunting proposistion (Chen, 2005; Reid & Moore, 2008). There is hope, however. Programs that were created to assist at-risk students, change the historic underrepresentation of students in poverty, or culturally/racially diverse students attain access to college and maintain success throughout their college career (Slavin & Calderon, 2001; Watt et al., 2007). The effort put forth by these programs focus on rigorous academic preparation, enforcing postsecondary expectations, and a focus on college financing (Watt, Huerta, and Lozano, 2007).

Starting college readiness initiatives earlier in a student's academic career may prove fruitful. Middle school, ranging from 6th to 8th grade, is a pivotal point in the formation of students' college plans. Cutler (2010) states that during the middle school years, underserved students experience a paradigm shift in which they decide whether to guide their lives towards college or away from it. Cutler (2010) goes on to state that middle school is a difficult transitional period for students associated with "declines in academic performance, students' sense of self-efficacy, and academic competence and self-esteem" (p. 3). Placing students in a learning environment that meets the emotional and developmental needs of these young students may counteract some of the marked declines in student performance during the turbulent middle school years (Cutler, 2010). In addition, research indicates that students in high need schools with disproportionately large populations of economically disadvantaged and low-performing students, an effective, well-prepared, high quality teacher is one of the most influential factors on student achievement (Darling-Hammond, 2000; Darling-Hammond and Baratz-Snowden, 2005; Darling-Hammond & Berry, 2006).

A recent study by Huerta, Watt, and Butcher (2013) examined the impact of AVID at the middle school level. The study found that AVID is beneficial in two ways. Initially, AVID implementation is closely associated with rigorous course offerings. Secondly, the study affirmed that the "longer a student is engaged in college preparation activities and AVID in particular, the more prepared that student is for high school rigor and college readiness" (Huerta et al, 2013). Specifically, students who participated in the AVID elective course in middle school and high school exhibited greater academic performance, were more likely to take rigorous courses and took more AP courses and AP exams than their peers who only participated in the AVID elective course in high school (Huerta et al, 2013).

Purpose Statement

The purpose of this study was to examine the relationship between participation in AVID and the college readiness of first generation Hispanic high school students in South Texas. For purposes of this study, college readiness was defined as passing scores on the Texas Success Initiative (TSI) Assessment in Reading, Writing and Math. In addition to AVID elective course participation, predictor variables that go hand in hand with AVID elective coursework in include: Advanced Placement courses taken, Advanced Placement Exams passed, Dual Enrollment courses passed, and ACT Composite test scores. This study focused on four high schools in Deep South Texas. The population consisted of junior and senior level students who were enrolled in the AVID elective course with a minimum of two consecutive years of participation in the AVID elective course. From the group of students enrolled in the AVID elective course, students were further subdivided into those who have participated in an AVID elective course in middle school (6^{th} through 8^{th} grade) to determine if there is a significant difference between the college readiness of junior and senior AVID students who participate in a middle school AVID elective course and junior and senior AVID students who only participate in a high school AVID elective course.

Theoretical Framework

David Conley's College Readiness (2007) was used as a framework to explore the hard and soft skills students need to possess in order to be academically prepared for the rigors of college.

Conley (2007) theorizes that students must master four key components to be considered college ready. Students must master 1) key cognitive strategies; 2) key concepts; 3) academic behaviors; and 4) contextual skills and awareness. These concepts are not mutually exclusive,

however can continually intersect through a student's education. Conley (2007) lists key cognitive strategies as critical thinking skills, intellectual openness and student inquisitiveness that becomes integrated into their educational repertoire due to prolonged, regular use. Key concepts are the academic contents, such as writing, research, and academic course content that are needed to successfully pass college courses (2007). Conley (2007) defines academic behavior as behaviors that are necessary for academic success, such as "self-monitoring, self-awareness, and self-control" (p. 16). Contextual skills and awareness are the ability for the student to recognize that the culture and structure of the institution impact their educational experiences and must acclimate and incorporate themselves into the institutional environment (Conley, 2007). Conley also states that awareness also includes traditional knowledge of the admissions process, financial aid process, researching potential colleges, and college placement requirements (Conley, 2007). David Conley's concept of college readiness will be examined in more detail in Chapter 2.

Research Questions

RQ1:

Are AVID elective course participation in high school, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed, and ACT Composite scores a function Texas Success Initiative Reading Scores for First-Generation Hispanic high school students?

RQ2:

Are AVID elective course participation in high school, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed, and ACT Composite scores a function Texas Success Initiative Writing Scores for First-Generation Hispanic high school students?

RQ3:

Are AVID elective course participation in high school, number of Advance Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed, and ACT Composite scores a function Texas Success Initiative Math Scores for First-Generation Hispanic high school students?

RQ4:

Are Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed, and ACT Composite scores a function Texas Success Initiative Reading Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

RQ5:

Are Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed, and ACT Composite scores a function Texas Success Initiative Writing Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

RQ6:

Are Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed, and ACT Composite scores a function Texas Success Initiative Math Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

Null Hypotheses

The following null hypotheses are intended to match their corresponding research questions.

Null hypotheses 1:

AVID elective course participation in high school, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment courses passed, and ACT Composite scores are not a function Texas Success Initiative Reading Scores for First-Generation Hispanic high school students.

Null hypotheses 2:

AVID elective course participation in high school, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed, and ACT Composite scores are not a function Texas Success Initiative Writing Scores for First-Generation Hispanic high school students.

Null hypotheses 3:

AVID elective course participation in high school, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses taken, and ACT Composite scores are not a function Texas Success Initiative Math Scores for First-Generation Hispanic high school students.

Null hypotheses 4:

Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment courses passed, and ACT Composite scores are not a function Texas Success Initiative Reading Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school.

Null hypotheses 5:

> Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed, and ACT Composite scores are not a function Texas Success Initiative Writing Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school.

Null hypotheses 6:

> Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed and ACT Composite scores are not a function Texas Success Initiative Math Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

Research Methodology and Design

The quantitative design of this study was used to examine the impact of participation in an AVID course on college readiness indicators in a large South Texas school district. Logistic regression analysis was used to analyze the relationship between participation in an AVID elective class and college readiness.

The dependent variable, college readiness, was measured by student's scores on the Texas Success Initiative Assessment in reading, writing, and mathematics and coded as "1" for pass and "0" for not passing. The independent variables were measured as follows: AVID elective course participation were indicated by student participation in an AVID elective course two consecutive years in high school. This was recorded as a dichotomous variable and coded as "0" for no AVID participation and "1" for AVID participation. Advanced Placement courses taken were indicated by the actual cumulative number of AP courses completed by each student

for the duration of their academic career. Advanced Placement Exams taken were indicated by the actual cumulative number of AP Exams attempted by each student for the duration of their academic career. If multiple attempts at a single AP Exam was attempted, only one instance was recorded in the data of this study. Advanced Placement Exams passed were indicated by the actual cumulative number of AP Exams passed by each student for the duration of their academic career. If multiple attempts on a single subject AP Exam existed, only the highest score was recorded. Dual Enrollment courses passed were indicated by the actual cumulative number of Dual Enrollment courses passed with a grade of 70 or higher by each student for the duration of their academic career. ACT Composite Score were indicated by the actual ACT Composite score as reported by ACT. If the ACT was attempted multiple times by the same student, only the highest score was recorded. AVID Middle School participation was indicated by the actual number of years (0-3) the student was enrolled in the AVID elective course in middle school. All test scores were operationalized using calendar year 2015-2016 benchmark scores, to be further discussed in Chapter Three.

The population for this study consisted of junior and senior level students from four high schools in a large South Texas school district. The researcher sought students who participated in the AVID program during the 2014-2015 academic school year, as well as junior and senior level students taking and advanced coursework who shared similar demographics, but who did not participate in an AVID elective course. Non-AVID students were selected using demographic data similar to those of first-generation college students. Search criteria included students who were academically at risk of dropping out, low socio-economic status and minority students who attempted at least one TSI exam. Students were identified by indicator codes in the Skyward student data management system. Skyward identified students by data feeds from the

Public Education Information Management System (PEIMS). Juniors and seniors were purposefully selected to satisfy the predictor variable requirements of two consecutive years' enrollment in and completion of an AVID elective course in high school.

This particular school district, hereby named Achieve ISD for sake of confidentiality, was chosen due to its 17 year commitment to the AVID system. In addition, Achieve ISD is one of the largest school districts in its region, enrolling 33,582 (AEIS, 2013) students in grades K-12. Achieve ISD has four high schools, heretofore known as Achieve High School, Achieve East, Achieve North and Achieve West. The school district population is 98% Hispanic and currently 53.6% at risk of dropping out (AEIS, 2013). Achieve High School has been a certified AVID school for seventeen years and has attained AVID National Demonstration School status. AVID National Demonstration School status is a certification status that involves one hundred percent AVID indoctrination on behalf of the school. A comprehensive application highlighting adherence to the twelve standards of AVID must be submitted, followed up with on-site visits conducted by the AVID state office. Demonstration School status is one of the highest honors a school can receive from AVID. Achieve East has participated in the AVID program for thirteen years and is currently serving its second term as National Demonstration School. Achieve North has participated in the AVID program for fourteen years. Achieve West is a new school and has participated in AVID for three years.

Definition of Terms and Acronyms

Achievement Gap. The differences between the test scores of minority and/or low income students and the test scores of their White peers (NEA, 2014). Achievement gaps can be experienced by various groups including: racial and ethnic minorities English Language Learners (ELLs), students from low-income families, gender groups. (NEA, 2014).

Advancement Via Individual Determination (AVID) Participation. AVID is a college readiness system created in 1980 by Mary Catherine Swanson, an English teacher at Clairemont High School, a newly desegregated high school, in San Diego, California. The AVID system was designed to raise the expectations of underrepresented, first generation students and provide the necessary social and academic support and students will rise to the challenge (AVID Center a, 2012). For purposes of this study, AVID participation will be defined in two levels: Students who have participated in and been continuously enrolled for a minimum of two years in the AVID elective class in high school (grades 9-12) and students who have participated in the AVID program and been continuously enrolled in the AVID elective course from middle school (grades 6-8) through high school (grades 9-12) (AVID Center a, 2012).

College Readiness For purposes of this study, college readiness will be defined by David Conley's (2007) research which indicates that a student is college ready when she or he has the knowledge, skills, and behaviors necessary to complete a college course of study without remediation. Conley further describes four dimensions of college readiness including key cognitive strategies, academic content, academic skills, and behaviors and college knowledge.

First Generation College Students. The National Center for Education Statistics defines first generation college students as "undergraduates whose parents never enrolled in postsecondary education (NCES, 1998). For purposes of this study, the definition will be expanded to include *potential* undergraduates as the subjects of this study have not yet graduated from high school.

Hispanic. For purposes of this study, the term "Hispanic" will be defined using the definition provided by the United States Bureau of the Census (2010) as "individuals who classify themselves in one of the specific Spanish, Hispanic, or Latino categories including

Mexican American, Puerto Rican, Cuban, Spaniard, Dominican Republican, or hailing from Central or South America.

TSI Assessment Scores. The Texas Success Initiative is the most recent (Fall 2013) college placement exam in the State of Texas. The actual TSI Exam is created by The College Board and administered through their ACCUPLACER testing service. Students are tested in reading, writing, and mathematics to determine if they are in need of remediation in the form of a remedial class in the respective subject area (CollegeBoard, 2014).

Delimitations of the Study

This study was delimited to select students in each of the four high schools in a high risk, low income school district in South Texas which has a dedicated history with the AVID system. This study was also delimited to students who were continuously enrolled in an AVID elective class for a minimum of two consecutive years while in high school.

Limitations of the Study

First generation student status is self-reported in Achieve ISD. There stands a possibility that some students in the AVID test group may not have been truthful in their self-report. The variables used to measure college readiness was performance on the Texas Success Initiative Assessment. It may prove difficult to generalize the results of this study beyond the state of Texas.

The success of an AVID school depends on its commitment to the program parameters and its fidelity to implementation. It is possible that some schools may adhere to programmatic guidelines more closely than others. For example, Achieve East High School has been certified as an AVID National Demonstration School, which denotes superior commitment to program

fidelity. Also, Achieve West has only been in existence for two years, with a fledgling AVID program, which may indicate room for growth.

Significance of the Study

According to ACT's *The Condition of College and Career Readiness 2015: Hispanic Students*, Hispanic students are significantly less academically ready for college than their White peers (ACT, 2015). Eighty-three percent (281,286 students) of Hispanic high school graduates took the ACT exam in 2014. Of the Hispanic students who attempted the ACT in 2014, 47 percent met none of the four ACT College Readiness Benchmarks, which are a score of 18 on the English exam, 22 on the Mathematics exam, 22 on the Reading exam, and a 23 on the Science exam (ACT, 2015).

Disparities in college readiness between Hispanic students and their White counterparts exist both in the state of Texas and in Achieve ISD (TEA, 2015a, TEA, 2015b). In the state of Texas in the year 2013, 58% of all Hispanic students graduated college ready in English Language Arts compared to 75% of their white counterparts. Mathematics college readiness rates were 69% for Hispanic students compared to 83% of White students (Texas Education Agency, 2015a). The average ACT score for all Hispanics in Texas was 18.5 compared to 23 for white students (TEA, 2015a). Twenty eight percent of Hispanic students completed a dual enrollment or Advanced Placement course in the state of Texas in the year 2013, while 35.6% of White students completed a dual enrollment or Advanced Placement course (TEA, 2015a).

The 2014 Texas Education Agency statistics are not an anomaly. Barnes and Slate (2014) detail a history of college readiness disparity for Hispanic students. Barnes and Slate examined college-readiness rates of Black, Hispanic, and White Texas public high school graduated over a three year period (2006 through 2009) using archival data from the Texas

Education Agency Academic Excellence Indicator System (AEIS). The researchers examined the metrics measured in Texas Education CODE [TEC] 39.051 (b) (13) which mandates that all Texas high schools/districts report on six indicators of college-readiness: Advance Placement Test Exam scores, dual credit course enrollment, SAT critical reading and math scores, ACT English and math scores, advanced coursework in science, math and foreign language, and scores from state college readiness assessments (Barnes and Slate, 2014, p 63). A Wilcoxon signed-rank test was then used to analyze the data. The 2006-2007 school year saw a reading college-readiness rate of 37.04% for Hispanics compared to 53.21% for White students. The 2007-2008 school year showed 37.27% of Hispanic students as college ready in reading compared to 49.96% for White students. The 2008-2009 school year proved to be similar with 47.86% of Hispanic students reported as college ready in reading compared to 61.89% of White students (Barnes and Slate, 2014 pp 65-69).

Mathematics college-readiness rates proved similar as well. Fifty-eight percent of White students were reported as college ready in math for the 2006-2007 school year compared to 39.73% of Hispanic students (Barnes and Slate, 2014 p. 69). Fifty eight percent of White students reported as college-ready while only 44.69% of Hispanics were reported as college-ready in math during the 2006-2007 school year (Barnes and Slate, 2014, p. 69). The 2008-2009 school year saw increases across the board in mathematics college-readiness with Hispanic students at 48.31% college ready and White students reported at 62.71% college ready in mathematics (Barnes and Slate, 2014, p. 70).

For over ten years, Achieve ISD has been a proponent of the AVID system with eleven schools (four high schools, six middle schools and one alternative education academy) qualified as certified AVID schools. One of Achieve ISD's schools, Achieve East, is currently named as

an AVID National Demonstration School. In addition, Achieve ISD is one of the largest school districts in its region, enrolling 34,175 (TAPR, 2016a) students in grades K-12. As of the 2014-2015 school year, the school district population is 97.7% Hispanic, 85.1% economically disadvantaged and currently 62.2% at risk of dropping out (TAPR, 2016a). The individual high school demographic breakdowns are as follows:

As of the 2014-2015 school year:

- Achieve High School is 99.1% Hispanic, 87.9% economically disadvantaged, and 69.8% at-risk of dropping out (TAPR, 2016a).
- Achieve East High School is 99.1 % Hispanic, 92.9% economically disadvantaged, and 74.1% at risk of dropping out (TAPR, 2016b). Achieve East High School is currently an AVID National Demonstration High School.
- Achieve West High School is 96.9 % Hispanic, 69.1% economically disadvantaged, and 56.2% at risk of dropping out (TAPR, 2016c).
- Achieve North High School is 97.3% Hispanic, 85.6% economically disadvantaged, and 67.6% at risk of dropping out (TAPR, 2016d).

Currently, no federal or state form or repositories of data that collect first-hand, first-generation college student status exist. The Free Application for Federal Student Aid (FAFSA) does collect self-reported data on parent's highest level of education attained (www.fafsa.ed.gov, n.d.). FAFSA data can prove difficult to attain for researchers due to the Family Educational Rights and Privacy Act (FERPA) which serves to protect students and parent's sensitive financial information (US DOE, 2016).

There are indicators that are common to identifying first-generation students. Lohfink and Paulsen (2005) state that first-generation students tend to be disproportionately non-white

and low income. The economic and demographic information listed above speaks to Achieve ISD's low income and non-white population. In addition, with an 11% college attainment rate, as per the 2010 United States, Deep South Texas is predominately first-generation. Although first-generation status is not an implicit requirement to participate in the AVID elective course, Achieve ISD does require its AVID students to be first-generation college students.

In Achieve ISD for the year 2013, 56% of Hispanic students graduated college ready in English Language Arts compared to 60% of White students (Texas Education Agency, 2014b). Sixty six percent of Hispanic students graduated college ready in mathematics compared to 64% of their white peers. (TEA, 2014b). The average ACT score for Hispanic students in Achieve ISD was 17.7 while their White counterparts received an average score of 18.9. In Achieve ISD for the year 2013, 33.1% of Hispanic students completed a dual enrollment or Advanced Placement course, while 41.5% of White students completed a dual enrollment or Advanced Placement course (TEA, 2014b).

This data becomes more relevant when one takes into consideration the four indexes that all Texas schools/districts must report on as part of their Adequate Yearly Progress accountability reporting (TEA, 2015a). The 2015 Accountability Manual lists Index 4 as the Postsecondary Component-College and Career Readiness, the goal of which is to "measure high school students' preparedness for college, the workforce, job training programs or the military." (p 53). Index 4 examines postsecondary readiness in three ways. First it looks at the college-ready graduate. This involves the student meeting the Texas Success Initiative college-readiness standards in both reading/ELA and mathematics. It reviews the college-ready criteria on the Texas Assessment of Knowledge and Skills (TAKS) exit-level test (for students graduating in Spring 2013) or the SAT or ACT test, in both English and mathematics (beginning June 2014)

(TEA, 2015b, p 53). Next, accountability measures require the reporting of Advanced Placement and Dual Enrollment completion. The third metric is the completion of a Career and Technical Education (CTE) coherent sequence of courses (TEA, 2015b, p 53). Data is evaluated on all students and then broken down by seven racial/ethnic groups: African American, American Indian, Asian, Hispanic, Pacific Islander, White and Two or More Races (TEA, 2015b, p 53). Prior research speaks to the AVID program's success rate in school accountability ratings. Watt, Powell, Mendiola, and Cossio (2006) studied ten high schools in four Texas school districts and found significant accountability improvement in all four schools. AVID students also showed greater improvement on standardized tests higher and grade point averages than their non-AVID peers (Watt, Yanez, and Cossio, 2003).

The United States Department of Education, National Center for Education Statistics (2012) indicates that students seeking a collegiate degree must have pre-collegiate preparation at the secondary level. In addition to success in accountability metrics, AVID has shown success in assisting underrepresented students develop skills needed to matriculate into and find success in college. Guthrie and Guthrie (2002) show that 89% of AVID students persist in college and 85% were on track to graduate between four and five years. This study seeks to examine the relationship between AVID participation in first-generation Hispanic students and college readiness in a South Texas school district.

Previous studies have found various factors that can influence first generation students' matriculation into college and levels of college readiness (Mendiola, Watt, & Huerta, 2010; Mendiola, Watt, Huerta, & Lozano, 2007; Watt, Huerta & Alkan, 2011; Watt, Huerta, & Lozano, 2009; Watt, Johnson, Huerta, Mendiola & Alkan, 2008). Research pertaining to how and to what extent AVID participation impacts the college readiness of Hispanic first generation students,

however, is limited and in need of expansion. Additionally, it remains unknown the extent to which prolonged participation in an AVID program, beginning in middle school, has on college readiness as compared to participation in AVID in high school only.

According to a report by Excelencia in Education (2016) between the years 2008-2010, only 16% Hispanic adults in the Rio Grande Valley had an associates degree or higher, compared to 37% of White non-Hispanics. When one considers that over 11% of the Hispanic population of Texas resides in the Rio Grande Valley, there is cause for concern. The concern is magnified when one considers the burgeoning medical and technology fields in Deep South Texas. According to the Bureau of Labor Statistics (2015), of the top 20 fastest growing occupations in South Texas, sixteen will require an associate's degree of higher.

Conducting a study on the relationship between AVID system participation and the variables comprising college readiness for first-generation Hispanic students will add to the vast body of national research concerning AVID. School districts have long been searching for programs with the ability to increase college readiness for students (Dougherty, 2010), this study may add to the body of research illustrating that AVID has this capability. The focus on a predominantly Hispanic, low income school district can prove fruitful for similar sized, similar geographic and similar demographic regions.

Summary of the Chapter

In this chapter, the problem was stated in detail. The purpose of this study was to examine the relationship between AVID participation and college readiness of first-generation Hispanic students in South Texas. The research design for this study was quasi-experimental quantitative in nature. Logistic regression analysis will be used to determine the relationship and predictive nature of the predictor variables and the dependent variables. Definitions for all

relevant, yet unfamiliar terms are available. The significance of the student was stated in detail, as well. Limitations to the study were also described.

Chapter two provides a review of the literature. Main areas of focus include: an examination of the barriers faced by first-generation Hispanic students, college readiness, and Advancement Via Individual Determination.

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this literature review was to provide an overview of college readiness, the issues and challenges faced by first-generation Hispanic students and a history and analysis of the Advancement Via Individual Determination college readiness system. The chapter began with an historical look at college readiness initiatives in the United States. Next was a discussion on first-generation college and Hispanic students and the challenges they face in matriculating from high school to college. The next section of the chapter discussed the AVID college readiness system. The AVID discussion began with the history of AVID, including theoretical foundations, student identification and participation, and curriculum and pedagogy. The historical component was followed by a review of studies concerning the effectiveness of AVID as a college readiness intervention tool. The chapter closed with a brief summary.

History of College Readiness: Reform, Accountability and Readiness Initiatives

While the goal of education has always been to matriculate students to some sort of higher education or vocation, thus leading to a more robust life, modern college readiness has roots in educational reform. This section of the research will explore the history of both federal and state reform, specifically the introduction of high-stakes testing. In addition, implications of high-stakes testing will be examined as well. This will be followed with a section illustrating that while the goal of closing the achievement gap may be to ensure underrepresented students

graduate from high school, students also need the skills necessary to be competitive and marketable as they apply for higher education (Fletcher and Tienda, 2010).

Federal Legislation and Educational Reform. The first wave of educational reform began as part of President Lyndon B. Johnson's War on Poverty. The Elementary and Secondary Education Act of 1965 (ESEA) called for equal opportunity for a quality education for all students (Elementary and Secondary Education Act, 1965). The ESEA provided for placement of children in special categories, including low socio-economic status and underserved students (Klein, 2014). This included the creation of Title I. Title I called for the assurance of quality education for students from low-income families.

The next call for major educational reform occurred in 1983, with The National Commission on Excellence in Education's *A Nation at Risk: The Imperative for Educational Reform*. This report, created at the behest of President Ronald Reagan by the National Commission on Excellence in Education, highlighted declining educational standards in the United States and recommended a refocusing on college prep programs by way of strengthening graduation requirements to include specific numbers of courses in math, English, science, social studies and foreign language. The report also called for increased accountability. This focus on accountability evolved into both measurable standards based on content and performance, as well as the assessments designed to evaluate mastery of these standards (National Commission on Excellence in Education, 1983)

The reauthorization of ESEA in 2001, widely referred to as No Child Left Behind (NCLB), required schools to raise the academic achievement bar and take proactive steps to ensure that all students met the new higher standards (Stiggins, 2004). NCLB (2002) called for a single statewide accountability system for all schools and districts within their given states.

NCLB (2002) called for an incremental raising of standards in effort to close the achievement gaps between advantaged and disadvantaged groups, with a final goal of 100% proficiency in all subgroups by academic year 2013-2014. Included in NCLB was the adequate yearly progress (AYP) requirement that demands schools to set standards for grade-level achievement and develop systems to measure the progress of all students as well as subgroups of students in meeting grade-level standards" (NCLB, 2002). AYP is used to hold schools publicly accountable for moving all students towards proficiency. Schools/districts who do not meet AYP accountability standards, risk losing Federal funding (Stiggins, 2004).

Another facet of the NCLB was the Comprehensive School Reform Program (CSRP). The CSRP, as outlined in Part F of Title 1, Improving the Academic Achievement of the Disadvantaged was to provide financial incentives for schools to develop comprehensive school reform, based on scientifically-based research and best practices (No Child Left Behind Act of 2001, Comprehensive School Reform, 2004). CSRP focused school reform on strengthening the entire school (United States Department of Education, 2007). No Child Left Behind indicated that federally funded CSR designs must utilize:

- Proven methods based on scientific research
- Ongoing professional development for teachers
- Measurable goals and benchmarks for student achievement
- Parent and community involvement in planning and evaluating school improvement activities
- Technical support from an external partner with experience in school-wide reform and improvement
- Annual evaluations of school reform strategies and analysis of student achievement

- Resources for sustainability
- Significant improvement of student's academic achievement

Although direct funding earmarked for CSR design models was discontinued by Congress in 2006, the design model is still in widespread use.

Accountability in Texas. The 2002-2003 school year saw Texas's response to NCLB with the inception of the first administration of the Texas Assessment of Knowledge and Skills (TAKS) test. The TAKS test was created in 1999 as part of Texas Education Code 39.02 (a). The TAKS test assessed students' mastery of the Texas Essential Knowledge and Skills (TEKS), which were the state standards for what students were expected to know in each academic subject, by grade level (TEA, 2015). In short, the TEKS are the curriculum.

In 2009 the Texas Education Agency partnered with the Texas Higher Education Coordinating Board and began collaborating on the development of College and Career Readiness Standards (CCRS) as a means of not only addressing Federal accountability requirements, but also to ensure the college readiness of Texas graduates. By working in vertical teams to specify knowledge and skills that all students needed to be successful in either community college or entry-level courses at four year university (Education Policy Improvement Council, 2009).

Texas implemented the State of Texas Assessment of Academic Readiness (STAAR) in 2011. The STAAR test was designed to assess skills at a greater depth and level of cognitive complexity than the TAKS test, contained the CCRS and was designed to better measure the growth of students' achievement (TEA: A Comparison of Assessment Attributes Texas Assessment of Knowledge and Skills (TAKS) to State of Texas Assessment of Academic Readiness (STAAR), 2010). The STAAR test was more rigorous and contained questions at a

higher cognitive complexity and required more cognitive analysis (TEA, 2010). The STAAR assessment originally called for students to pass end-of-course (EOC) exams in fifteen areas at the high school level: Algebra I, Geometry, Algebra II, Biology, Chemistry, Physics, English I (reading and writing), English II (reading and writing), English III (reading and writing), World Geography, World History and U.S. History (TEA, 2010). This transition from a required four tests passed as a graduation requirement to fifteen led to significant public outcry (Blaskee, 2013). During summer of 2013 Texas House Bill 5 created a change in the STARR test reducing it from twelve tests down to five: English I, English II, Algebra I, U.S. History and Biology (TEA, 2015c). Beginning spring of 2016 STAAR Algebra II and English III were available for districts to administer as optional assessments (TEA, 2015d).

The STAAR assessment held students, schools, and districts to strict accountability measures. The goals behind these elevated accountability measures included improving student achievement at all levels in core subjects of the state curriculum, ensuring progress of all students toward achieving advanced academic performance, and closing achievement gaps among all groups (TEA, 2015b, p. 4). The Texas Education Agency listed eight guiding principles for accountability: student performance, system safeguards, recognition of diversity, public participation and accessibility, coordination between state and federal requirements, statutory compliance, local responsibility and distinction designations that were based on higher levels of student performance rather than more students performing at the satisfactory level (TEA, 2015b, p4).

Students who did not pass their subject specific STAAR assessments in high school ran the risk of not being eligible to graduate (TEA, 2015b). Schools and districts were assigned one of three academic ratings (*Met Standard, Met Alternative Standard or Improvement Required*),

which were based on a framework of four indexes which combined a range of indicators into a comprehensive measure of performance (TEA, 2015b, p5). The performance index framework included: Index 1: Student achievement which provided a snapshot of performance across subjects; Index 2: Student progress which measured student year-to-year progress; Index 3: Closing performance gaps which emphasized the academic achievement of economically disadvantaged students and the two lowest performing racial/ethnic groups; and Index 4: Postsecondary readiness which emphasized the importance of earning a high school diploma that provided students with the foundation necessary for success in college, job training programs, the workforce or the military (TEA, 2015b, p5). Campuses that earned an accountability rating of Met Standard became eligible to earn various distinction designations, based on performance relative to campuses of similar type, size, grade span, and demographics (TEA, 2015b, p6).

Implications of High-Stakes Accountability Testing. Some research indicated that the high-stakes testing used as accountability as prescribed by NCLB might be detrimental to students as well as teachers. Haney (2000) indicated that high-stakes standardized testing had been a driver of student drop-out rates. Hilliard (2000) and McNeil (2000) cited the pedagogical limitations placed on teachers which could occur when learning becomes secondary to testing. Pennington (2004) echoed this sentiment by positing that not only does high stakes testing stifle pedagogy, but undermines leaning. Grant (2003) also argued that NCLB's accountability system and overreliance on high-stakes testing impacted classroom practices. Au (2007) stated that differences in the alignment of the assessment to the curriculum extends into teachers individual methods and impacts how teachers taught to the test.

In the event a school was labeled *Improvement Required* or if a student did not meet standard, students and faculty could experience adverse effects that could conflict with the

ultimate goal of narrowing the achievement gap (Sloan, 2007). Rhoten, Carnoy, Chabaran and Elmore (2003) cited what they termed the "shame factor" (p. 35) which could occur when publicity around test performance becomes public both for the individual and the school system.

As high-stakes testing became more solidly institutionalized at both the state and federal level, publicity surrounding performance intensified. McNeil, Cuppola, Radigan and Vasques-Heilig (2008) conducted a study and found that high-level district administrators used public disclosure of test performance as a coercive technique to pressure campus level employees to increase scores. McNeil, et al. (2008) also found that the increased pressures surrounding performance led to the redirection of resources to fund public relations expenses such as banners and signs that advertise proficiency ratings, performance, and growth.

Despite the good intentions of No Child Left Behind and the call for increased accountability through standardized high-stakes testing, the achievement gap persisted (Lewis, Hancock, and Hill-Jackson 2008). Frey (2012) stated that these gaps can often be seen in grades, standardized test scores, and other success measurements. Educators were at odds on how to best use NCLB to narrow the achievement gap (Hess, 2011), which could arise as early as pre-school (MacInness, 2009).

College Readiness Efforts in the United States. While movements such as No Child Left Behind focused on closing the achievement gap at the secondary school level, another achievement gap was forming, predicated on the widening disparity in knowledge and achievement at the secondary level, but extending to the post-secondary world. Although similar in scope to the achievement gap, this new focus on college readiness brought its own unique set of goals and challenges. Stillwell and Stable (2013) indicated that Hispanic students were less likely to complete advanced courses in high school than their white counterparts. Complete

College America (CCA, 2012) sought to analyze student data from thirty-three states and found that 64.7% of low-income minority students needed academic remediation prior to entering a two-year community college and 31.9% of students needed remediation upon entering a four-year institution. Fortunately, this could be remedied; with proper academic and social support, low income, underrepresented students could overcome obstacles and achieve post-secondary academic success (Watt, Powell, & Mendiola, 2004; Watt, Powell, Mendiola, & Cossio, 2006).

The Higher Education Act (HEA) of 1965 was designed to increase college enrollment and completion rates of economically disadvantaged and underrepresented students (Pitre & Pitre, 2009). The first triplet of programs to arise from the HEA of 1965 was Upward Bound, Educational Talent Search, and Student Support Services, collectively referred to as the TRIO Programs (Pitre & Pitre, 2009). Further, as early as 1970 educators documented a dearth of minorities, particularly at-risk minorities in higher education, which begat the creation of intervention programs for minority students (Bower, 2013). These programs were designed to not only increase high school graduation rates and decrease the achievement gap, but to increase college-going rates for minority students (Bower, 2013; Domina, 2009). These intervention programs would lay the foundation for the beginnings of college readiness programs (Domina, 2009). High schools and middle schools began a push to develop a college-going culture (McDonald & Farrell, 2012). The ultimate goal was to help minority students to have access to the resources and tools needed to aspire to college matriculation (Bragg & Durham, 2012). The United States federal government, various state governments, and private sector entities led efforts to increase college readiness among minority students (Bower, 2013; Reddick, Welton, Alsandor, Denyszyn and Platt, 2011).

College readiness programs blossomed across the United States, all with slightly different focuses (Droogsma-Musoba, 2011). Mathematics, Engineering, Science, and Achievement (MESA) was created with the intent of increasing minority participation in math and science careers (Contreras, 2011). *Puente* (Spanish for "bridge") was designed to help Hispanic students transition socially to college (Sablan, 2014).

Educational Talent Search targeted low-income, first-generation, and underrepresented students who showed academic promise as well, with assistance efforts beginning as early as Grade 6 (Pitre & Pitre, 2009). Educational Talent Search existed to provide a bevy of outreach services to low-income, first-generation, underrepresented students including: career options, financial awareness, information on the college admissions process, college tours, financial aid information, preparation of the Free Application for Federal Student Aid (FAFSA), and preparation/tutorial for college entrance exams (US Department of Education, 2015).

The Gaining Early Awareness and Readiness for Undergraduates Program (GEAR UP) program was created in 1998 in response to President Bill Clinton's state of the union address's call to assist underrepresented and disadvantaged students gain access to higher education by providing these students and their parents guidance and support (Lozano, Watt & Huerta, 2009). GEAR UP was created during the reauthorization of the Higher Education Act and was the result of the combination of two separate programs: 1973's State Student Incentive Grant (SSIG) and the National Early Intervention Scholarship and Partnership program (NEISP) (Perna and Swail, 2001). The goal of GEAR UP was to increase college enrollment rates by providing support services to teachers, students and parents (Lozano et al., 2009). GEAR UP provided six-year grants to States and partnerships in effort to provide services to low income middle and high school students and their families (U.S. Department of Education, 2012). The program called for

a collaboration of many agencies. Each regional partnership required a minimum of one local education agency, a minimum of one elementary school, a minimum of one secondary school, a minimum of one postsecondary education institution and two or more community organizations, which could include businesses, philanthropic organizations or other community based organizations (U.S. Department of Education, 2012).

GEAR UP operated on three objectives for underrepresented, low socio-economic status students. First, schools increased the academic performance and preparation for postsecondary education of its participating students. Schools also increased the rate of high school graduation and participation in postsecondary education of its participating students. Finally, schools increased educational expectations for participating students and student and family knowledge of postsecondary education opportunities, preparation and financing (U.S. Department of Education, Programs, Gaining Awareness and Readiness for Undergraduate Programs, 2015).

GEAR UP offered early and sustained interventions, beginning no later than 7th grade to foster academic progress. GEAR UP provided remedial and accelerated instruction, discipline – specific content, after school tutorials, weekend tutorials, and summer bridge programs (U.S. Department of Education, 2012).

A 2003 study conducted by the U.S. Department of Education's Policy and Program Studies Service found that 84% of seventh grade GEAR UP students indicated that going to college was "very important" versus 83% of the comparison group (p6). However, only 51% of GEAR UP students indicated they were "definitely going to college" compared to 56% of the comparison group (US DOE, 2003, p7). The same study (p7) also found that the most common service GEAR UP students received was tutoring, both during and after school. After

school tutorials proved to have difficulty attracting participants. All schools involved in this study participated in at least one school visit per year.

One study showed that after five years of GEAR UP implementation in a South Texas University, 7184 students graduated from local high schools and attended college, 98% of whom were Hispanic and 88% low income (Watt, Huerta, & Lozano, 2007). Watt et al. used a mixed method approach to examine differences in educational aspirations, expectations, and anticipations, college admissions, and financial aid knowledge, and advanced achievement in mathematics for students participating in the GEAR UP program as well as the Advancement Via Individual Determination (AVID) college-readiness system. Contrary to hypotheses, GEAR UP students did not seem to show significantly higher levels of academic preparation, educational aspirations, educational expectations and anticipations, and college knowledge (Watt et al, 2007, p 209). Watt et al. (2007) found that the AVID group was significantly higher in academic preparation and involved in more advanced coursework than the control group (p 209).

A 2014 study by Morgan, Sintara and Eschenauer used a quasi-experimental design to examine GEAR UP student graduation rates and former GEAR UP student program perceptions at a high school in the state of New York. The study was conducted over a four-year period at Long Island High School, following 294 students, 40 of whom were active in GEAR UP while in middle school. Students were placed into one of three participation groups based on their participation in out-of-school GEAR UP activities. These groups were utilized to compare student success and perceptions on the effectiveness of the program to participation levels in the program. Groups were No Participation, Low Participation (more than 25 hours but less than 150 hours of GEAR UP activities) and High Participation (more than 150 hours of GEAR UP activities). Morgan et al. compared participation rates with college readiness metrics including

SAT scores and graduation rates The researchers also administered questionnaires to graduating seniors in effort to gauge student perceptions on their academic success, how their participation in the GEAR UP program contributed to their success and activities in the GEAR UP program that contributed to their success. Researchers found that GEAR UP students had a graduation rate of 95%, with 58% of graduating seniors enrolling in college within three months of graduation (p. 614). Students reported that college tours, SAT preparation and tutoring had the greatest effect on their college aspirations. High GEAR UP participants also exhibited significantly higher SAT verbal scores (p. 616).

The American Diploma Project was formed in 2002 by educators and representatives from four national educational advocacy organizations: Achieve, Education Trust, the Fordham Foundation and the National Alliance of Business (Haycock, 2007). The goal of this newly formed consortium was to develop strategies for closing achievement gap occurring between high school and college (Haycock, 2007). While college enrollment was on the rise, the number of students requiring remedial coursework upon entering college was growing exponentially (Conley, 2007). For example, Cline, Bissell, Hafner and Katz (2007), reported that although one-third of all California high school graduates were admitted into the California State University system, 50% of them required remediation in English, mathematics, or both. Another example of the need for an emphasis for increased college readiness occurred upon analysis of the results of the High School Survey of Student Engagement (HSSE), which is an annual survey conducted by the Indiana University Center for Postsecondary Research. Upon analysis of the data Kuh (2007) concluded that “many high school seniors are not prepared academically for college-level work (p. 5). Project GRAD was created to implement college-readiness programs

in low-performing, urban schools and encouraged minority students to graduate high school, transition to college, and graduate from college (Holland, 2005).

Dual enrollment was another college readiness initiative which allowed students to earn college credit while in high school through collaborations with high schools and post-secondary institutions (Lieberman, 2004). Students could earn college credit, gain college experience, and reduce college costs by taking these free courses while in high school (Lieberman, 2004). This led to increased opportunities for enrollment, persistence and graduation from college (Adelman, 2006). Dual enrollment students have shown to be less likely to need math remediation (An, 2013) and were more likely to attain a college degree (Kim & Bragg, 2008). An (2013) also indicates that dual enrollment participation positively impacted first-generation students as well. Allowing underserved, first-generation college students to take college courses while still in high school allowed these students to experience a college environment whereas they may have previously considered themselves not "college material" (Hoffman, Vargas, & Santos, 2009, p 43).

Early College High Schools (ECHS) took the dual enrollment concept one step further by either housing the high school on a college campus or hosting the college course on a high school campus (Lieberman, 2004). The purpose behind ECHS was to serve low-income, first-generation college students (Berger, Adelman, & Cole, 2010). Students who participated in ECHS have shown to earn a significant amount of college credit while performing at a college-ready level in their coursework (Berger, Adelman, & Cole, 2010).

College Readiness

Many definitions for college readiness exist. The American College Testing (ACT, 2013) organization defined college readiness as "acquisition of the knowledge and skills a student needs to enroll and succeed in credit-bearing, first-year courses at a post-secondary institution." Furthermore, ACT added (p. 3) "readiness for college means not needing to take remedial courses in postsecondary education or training programs." The College Board defined college readiness as academic rigor in high school, cumulative grade point average and SAT score (Patelis, Camara, Wiley, & The College Board, 2009).

Conley (2008) further expanded the definition of college readiness to include specific critical thinking skills which he described as central to success in college-level coursework. Conley stated "At the heart of college readiness is development of the cognitive and metacognitive capabilities of incoming students; analysis, interpretation, precision and accuracy, problem-solving, and reasoning" (pg. v). Conley (2010) further stated that there were far more complex social issues that might affect students "actual success in college seems to be more dependent on a much wider array of skills, knowledge, attitudes, behaviors, and strategies (pg. 19). Readiness was impacted by the ability to understand and maneuver through the college milieu: academic expectations, administrative requirements, and interpersonal relationships (Conley, 2010). These personal factors could also have equally significant an impact on college success as cognitive abilities (Boylan, 2009; Bandura, 1997.)

A lack of college-readiness affected many entering college freshmen. Upon analysis of the results of the High School Survey of Student Engagement (HSSE), which was an annual survey conducted by the Indiana University Center for Postsecondary Research. Kuh (2007) concluded that "many high school seniors are not prepared academically for college-level work"

(p. 5). When students entering college or university for the first time were deemed not academically prepared for the rigors of post-secondary education, remediation might be recommended (Bettinger and Long, 2005).

Remediation served to help provide academically unprepared students with additional skills and knowledge needed to perform at a college level (Bettinger and Long, 2005). Remediation could occur in the form an additional course, particularly math or English, which must be completed prior to enrolling in any additional coursework (Bailey and Cho, 2010). In many instances, students were referred to remedial courses based on performance on placement exams (Bailey, Jeong and Cho, 2010), such as the Texas Success Initiative in the State of Texas (College Board, 2014). These remedial courses served as a barrier to upper-level courses, as well as particular majors and/or occupations (Bailey, et al., 2010). A study by Bailey, et al. (2010) found that of all U.S. students enrolled in remedial coursework, less than 50% of them actually completed the remedial course sequence. First-generation students were listed as most likely to enroll in remedial coursework (Chen, 2005). In addition, Hispanic students were more apt to be enrolled in remedial coursework (Bahr, 2010). Bahr (2010) analyzed community college students in California and found 26% of White students placed in higher level developmental math courses compared to only 15% of Hispanic students. In addition, only 17% of White students were placed in lower level remedial coursework compared to nearly 30% of Hispanic students placed in low level remediation (Bahr, 2010).

Remediation may have had an impact on completion rates as well. A 2010 study by Boatman and Long sought to analyze the effects of mathematics, reading and writing remediation on underprepared students attending two and four year institutions in Tennessee. The authors used a regression discontinuity design to assess the effects of multiple levels of

remediation in all three subject areas based on specified cutoff scores. The authors studied academic outcomes including persistence to degree completion, number of college-level credits completed and grade point average to find that the effects of remedial courses differed according to students initial levels of preparation (Boatman and Long, 2010). Students on the margins of needing remediation were found to experience negative effects including being less likely to complete a degree in six years and fewer college level credits earned (Boatman and Long, 2010). Students on the margin of the cutoff scores experienced little to no positive effects while students further below the cutoff scores seemed to experience positive effects on persistence and academic outcomes. (Boatman and Long, 2010).

Martorell and McFarlin (2011) conducted a similar study on remediation and persistence in Texas. Regression discontinuity was also used to determine the effects of remediation on academic outcomes. Martorell and McFarlin (2011) found little evidence of positive effects of remediation for underprepared students, however, a small negative effect was found on the number of academic credits earned for students placed in remediation. Research found that remediation had a negative impact on degree completion for underprepared students attending four-year colleges as well (Attewell, Lavin, Domina, and Levey, 2006; Attewell, Heil, and Reisel, 2012)

Conley's work has been a hallmark of college readiness research for over ten years. His focus has been to study and address the disconnect between high school graduation requirements and matriculation into college and the ability to successfully complete college-level coursework and succeed and the college level. Conley worked in conjunction with the University of Oregon's Center for Educational Policy Research to develop a model of college readiness

(Conley, 2008). Based on discussions with college faculty, combined with an evaluation of college course contents, Conley found four college readiness dimensions:

- Key cognitive strategies
- Key content knowledge
- Academic behaviors
- Contextual skills and awareness (Conley, 2010, p.3).

In addition, these dimensions also included non-academic support behaviors like time management, study skills, note taking strategies, knowledge of the admission and financial aid process upon entering college (Conley, 2010).

In 2010, Conley furthered his research by publishing the results of studies conducted at 38 high schools across the United States to validate his CollegeCareerReady Diagnostic Tool. He chose the 38 schools based on their history of preparing students who were successful college freshmen (Conley, McGaughy, Kirtner, Vander Valk & Martinez-Wenzel 2010). Conley used those results to examine the characteristics of high schools that do successfully prepare students for college and further identified seven principles that schools could use to prepare students for successful matriculation from high school to college (Conley et al., 2010).

Conley et al.'s (2010) principle one stated that educational leaders must create and maintain a college-going culture in the school. Principle two dictated that leaders must create a core academic program that was aligned with and led to college readiness by end of 12th grade (Conley et al., 2010). The third principle required teaching self-management skills and academic behaviors and expected students to use them (Conley et al., 2010). Principle four asked that educators make college and careers accessible by helping students manage the complexity of preparing for and applying to post-secondary education (Conley et al., 2010).

Principle five called for educators to create assignments and grading policies that more closely approximated college expectations each successive year of high school (Conley et al., 2010). Principle six indicated that educators make the senior year meaningful and appropriately challenging for students (Conley et al., 2010). Finally, principle seven indicated the need to build partnerships with and connections to postsecondary programs and institutions (Conley et al., 2010).

In spite of myriad efforts to increase levels of college readiness, recent studies have shown that there was still work to be done (Gerwertz, 2011). Reports from the 2011 ACT College Readiness Benchmark scores showed that only 25% of all students tested met the benchmarks in all four subject areas of the test (Gerwertz, 2010). Gerwertz went on to explain that meeting benchmark scores in all fours subject areas of the ACT college entrance exam, combined with a strong academic curriculum in high school increased the chances of enrolling and persisting in a college or university "particularly in underrepresented minority students such as African Americans and Latinos" (p.1). This became particularly important when one considered the fact that according to Gerwertz, (2011) the number of Hispanic students taking the ACT test increased by 116% between 2007 and 2011. With more students of Hispanic origin showing aspiration to attend college, it was incumbent upon educators to provide systems to ensure college readiness.

It is important to note that although educational aspirations were increasing across all ethnic and racial groups, graduation rates for minority and low income students were not proportional. Roderick, Nagaoka, and Coca (2009) examined what they termed the "aspirations-attainment gap" for low-income, minority students. They postulated that the key to closing this gap was college readiness and that the chief strategy to improve college access and success must be "to ensure that students leave high school with academic skills, coursework and qualifications

they need" (p. 88). Roderick et al. (2009) listed four areas of college readiness identical to those listed by Conley: content knowledge, basic academic skills, non-cognitive skills and college knowledge. When examining student grade point averages, achievement test scores and college entrance exam scores, Roderick et al. (2009) found that "less than one-quarter (23 percent) of African American and only 20 percent of Latino graduates would be deemed college-ready as compared to 40 percent of white students" (p. 193). In addition, the authors found that while enrollment in college preparatory and college-level course increased, minority achievement remained stagnant. In mathematics, "49 percent of whites, but only one quarter of Latinos and 12 percent of African Americans met the ACT College Readiness benchmarks" (p. 193).

When analyzing Conley's key components of college readiness, it becomes readily apparent that to become college ready, students must have sufficient motivation, achievement and successful assimilation into a college community (a college-going mindset, if you will). Deci and Ryan (2000) introduced Self-Determination Theory which explained the factors that assisted students in attaining the mental, emotional and social skills necessary for success at the college level. Self-Determination Theory was designed to explain how the interaction between intrinsic and extrinsic motivating factors could impact and affect motivation (Deci & Ryan, 2000). Deci and Ryan indicated that conditions that fostered competence, autonomy, and relatedness increased intrinsic motivation and the internalization of extrinsic motivating factors that lead to self-integration. In a recent study, intrinsic motivation, when linked to high levels of autonomy, was identified to be the most significant predictor of successful college performance (Soric, 2009). In addition, Kitsanas and Zimmerman (2009) found that "self-regulatory processes, such as goal setting, self-monitoring, and self-evaluating were highly predictive of students' achievement track in school (p. 98). Ryan and Deci (2008) further explained the difference between autonomous

motivation and controlled motivation. Autonomous motivation was intrinsic to the individual. Controlled motivation was not internalized, but was rather rewards based, either in anticipation of positive rewards or in an avoidance of negative consequences (Ryan and Deci, 2008). Van Ryzin, Gravely, and Roseth (2009) concurred that autonomous motivation lead to student engagement and higher academic achievement. Guay, Ratelle, and Chanal (2008) also found that "the more students endorse autonomous forms of motivation, the higher their grades are, the more they persist, the better they learn, and the more they are satisfied and experience positive emotions at school" (p. 237).

The research would seem to indicate that success in college level coursework (i.e. college readiness) are potentially influenced by coursework or programs that are able to increase student autonomy, competence, and relatedness.

First-generation Students

Nunez & Caccaro-Aleman (1998) defined first-generation students as those whose highest level of educational attainment is a high school diploma. This echoed the definition provided by the Higher Education Act of 1965, which defined first-generation students as: an individual both of whose parents did not complete a baccalaureate degree (Higher Education Act of 1965, Sec. 402B [6] g1 [a]). Data existed to indicate first generation college students were more likely to delay enrollment or require remedial courses than their more experienced counterparts with parents who did attend college (Chen, 2005; Reid & Moore, 2008). Lohfink and Paulsen (2005) stated that first-generation students tended to be disproportionately non-white, low income, and female. Traditionally, first generation students might be less well-prepared psychologically and might have lower self-efficacy than their peers who have had parent who had attended college (Inman and Mayes, 1999).

First-generation students often attended high schools that lacked high levels of academic rigor (Green, 2006). Additionally, the schools that first-generation students attended might be lacking adequate instruction on developing academic skills needed in college, as well as lacking cultural preparation for college (Ishitani, 2006; Hudley, Moshetti, Gonzalez, Cho, Barry, & Kelly, 2009). Ishitani (2006) and Hudley et al. (2009) also state that first-generation students might be less likely than their non-first-generation peers to receive college preparatory support while in high school.

Xianglei (2005) used high school transcript data and found that first-generation students were likely to be less academically prepared than their peers. First-generation students completed less rigorous math courses, had lower entrance exam scores, and lower standardized test scores (Xianglei, 2005). Of the students studied, 55% of the first-generation students' college transcripts showed that they had completed remedial coursework, compared to only 27% of students whose parents complete college needing remediation (Xianglei, 2005).

Finances can pose problems for first-generation students as well. Due to financial limitations, many first generation college students selected colleges within fifty miles of their family home (Pascarella, Pierson, Wolnaik, & Terenzini, 2004; Saenz, Hurtado, Barrera, Wolf, & Yeung, 2007). Many students sought out part-time and even full-time employment, resulting in a loss of attention and devotion to their academic and social integration at their college campus (Bui, 2002; Engle & Tinto, 2008).

Many first-generation students often faced barriers to remaining in school as well. Pascarella et al. (2004) indicated that first-generation students were more apt to drop out of a four-year institution at the end of their first year and less likely to persist and graduate if they remained enrolled longer than five years. In addition, The Pell Institute (2007) indicated that

first-generation students were four times as likely to leave college or university after their first year as compared to students whose parent had achieved a bachelor's degree. As a result, first-generation students lacked the knowledge of campus norms, rules, roles, expectations, communication, and relationship formations, degree plan knowledge, and the ability to navigate the plethora of bureaucratic offices housed within a college or university (Barry, Hudley, Kelly, & Cho, 2009; Bryan and Simmons, 2009; Pascarella et al.). In other words, first-generation students were lacking the cultural capital, a concept coined by Pierre Bourdieu in 1973, which was the currency that allowed students to navigate the implicit and explicit networks, be they institutional or social, to create a network of support at college (Jehangir, 2010). Jehangir (2010) further stated that this cultural capital was generally attained through parents who attended college.

First-generation students were reported to be less involved in on-campus activities, less involved with student acquaintances, mostly due to financial and commuter obligations (Lundberg, Schriener, Hovaguimian, & Slavin Miller, 2007). Pike and Kuh (2005) stated that first-generation students were less engaged overall, less likely to integrate into college experiences and viewed the college environment as less supportive. Jenkins, Miyazaki, & Jasonik (2009) further explained that first-generation students tended to shy away from asking questions of or seeking advice from professors or faculty member creating a larger barrier to integration. This reduced involvement could have a negative effect on learning and persistence (Lundberg, et al., 2007).

A 2011 study by Mehta, Newbold, and O'Rourke found that due to growing up around adults who did not complete college, first-generation students were "less exposed to support and other contributing factors that provide preparation and backing for navigating through college

than their peers"(p. 20). Parents who did not have personal college knowledge and had limited financial and social resources had a lessened capacity to facilitate college planning for their students (Oliverez & Tierney, 2005; Ceja, 2006).

Ishitani (2006) conducted a study on the impact that characteristics such as race and ethnicity, socioeconomic status, and gender had on college attrition and degree completing behavior. Ishitani found that first generation students were 1.3 times more likely to leave college compared to students whose parents received a college degree (2009). Ishitani (2009) noted that Hispanic students were 64% more likely to drop out of college during their second year as compared to white students.

Hispanic Students and College Readiness

Hispanic students have not historically traveled an easy road to higher education. In 1958, Hispanics were less than six percent of first-year college students in the Southwest region of the United States, where at the time, the largest population of Hispanics in the United States resided (MacDonald, Botti, & Clark, 2007). Along with African American students, Hispanic students sought equal access and opportunity to enroll in institutions of higher learning through the Higher Education Act of 1965 and the civil rights movement (MacDonald, et al., 2007). Lyndon B. Johnson's Great Society era also introduced programs such as the Rockefeller Foundation, which was implemented to address access needs of Hispanic students and the passing of the Servicemen's Readjustment Act (GI Bill), which provided financial opportunities for Hispanic students who served in World War II to attend college (MacDonald, et al., 2007). The creation of the federal TRIO programs, such as Upward Bound, were aimed at increasing educational opportunities for Hispanic students of low socio-economic background to attend college (MacDonald, et al., 2007). The Hispanic Association of Colleges and Universities

(HACU) was created in 1986 as a means to increase Hispanic student enrollment in colleges and universities by creating financial opportunities such as scholarships and internships, as well as providing a financially secure and politically engaged Hispanic base to lobby for and create educational reform (MacDonald, et al., 2007). 1992 saw the reauthorization of the Higher Education Act and with it came the designation of Hispanic Serving Institution (HSI). While the designation was assigned, concern arose over perceived favoritism concerning allocation of funds compared to Historically Black Colleges and universities; as a result, in 1998, HSI's were assigned a separate allocation and a renewed focus on the specific and unique needs of the Hispanic community (MacDonald, et al., 2007).

According to the 2010 United States Census, Hispanics were the largest ethnic minority group in the United States, totaling over fifty million. Unfortunately, the exponential growth in population was not reflected in higher education enrollment. Underrepresented minority and economically disadvantaged college students had disproportionately lower college completion rates compared to their peers (Oteri, Rivas, & Rivera, 2007). First year college persistence rates of minorities were lower than their White peers (Feldman & Zimbler, 2011). Only 13 percent of Hispanics over the age of 25 had a bachelor's degree (U.S. Department of Commerce, 2009).

Research seemed to indicate that Hispanic students have high aspirations for college, however, an aspiration-attainment gap existed (Pew Hispanic Center, 2009). Survey data indicated that young Hispanics were more likely than students of other ethnic groups to agree that a college degree was essential for success in life and that Hispanic students reported that their parents placed a heavy emphasis on the need to attend college (Pew Hispanic Center, 2009). This was contrasted with data from the same survey that indicated that only 48% of respondents expected to attain a college degree (Pew Hispanic Center, 2009, p. 2) Some minority students left

college due to a lack of basic skills and fluency needed to succeed in college, including but not limited to writing ability, reading strategies, and time management, which resulted in not being intellectually or cognitively ready for the challenges of college (Feldman & Zimbler, 2011; Swail, Redd, & Perna, 2003). Structural barriers existed that often lead to an aspiration-expectation gap among Hispanic students, resulting in students perceiving limited overall outcomes, including fewer career choices and opportunities (Lopez, 2009). Limited access to educational and vocational resources, role models, and community support often lead to diminished educational expectations among Hispanic students (Diemer, 2009; Diemer, Wang, Moore, Gregory, & Hatcher, 2010). College readiness had been shown to be a predictor of college persistence and success in Hispanic students (Arbona and Nora, 2007; Wassmer, Moore, and Shulock, 2004), while Person and Rosenbaum (2006) found family involvement played a crucial rose in Hispanic student collegiate success.

Cerna, Perez and Saenz (2009) conducted a study to examine the pre-college aspirations, values, and relationships of Hispanic students in effort to better understand resilience and persistence towards a degree. Cerna et al. (2009) reported that social, human, economic, and cultural capital were all factors which contributed towards Hispanic student's degree completion. Social capital was defined as "the relationships that students have with the individuals that provide them with access to information on enrollment into college and retention resources (Cerna et al., 2009, p. 131). Cultural capital was defined as the "aspirations, cultural values, and perceptions associated with college choice when the students begin college" (Cerna et al., 2009, p. 132). Human capital was defined as "the student's achievements and aspirations based on performance measures" (Cerna et al., 2009, p. 132). Economic capital was defined as "a student's financial situation and the student's attitude toward college cost and their financial

aspirations for career attainment" (Cerna et al., 2009, p. 132). Cerna et al. found that a focus on improving the social and cultural capital of Hispanic students was more beneficial to students than a narrow focus on student deficiencies (2009). Reyes and Nora (2012) and Smith and Blacknall (2010) also found that an increased emphasis on social, human, economic and cultural capital contributed to Hispanic student degree completion.

Sciarra and Whitson (2007) conducted research with the purpose of determining the factors that distinguish Hispanic students who achieved a bachelor's degree from those Hispanic students who did not achieve their bachelor's degree. The researchers utilized data from the 1988-2000 National Educational Longitudinal Study (NELS). Eight hundred sixty six Hispanic students (45% male, 55% female) who had attended a postsecondary institution prior to the year 2000 were studied. The researchers looked at characteristics such as socio-economic status, parental support, teacher support, and psychological variables and categorized students in to one of four levels: no degree, certificate, associate's degree and bachelor's degree. Using multinomial logistic regression, Sciarra and Whitson were able to significantly predict postsecondary attainment. Parental support, teacher support, and locus of control showed to be significant predictors of those who received an associate's degree. Parental support showed to be a significant factor in both associate's degree and bachelor's degree attainment (Sciarra and Whitson, 2007).

The sense of support Hispanic students required of parents extended to teachers and faculty as well. Hispanic students who experienced frequent interactions with faculty and perceived them to be student-centered were more likely to persist in college (Sandoval-Lucero, Maes, & Chopra, 2011). Otero et al. (2007) found that positive relationships with faculty members could be beneficial to Hispanic students. The researchers conducted a quantitative

study in effort to identify academic and demographic variables of first-year persistence in Hispanic college students. One hundred thirty four students completed surveys indicating the various factors that impacted first-year persistence. Otero et al. found that faculty support, positive affirmation, and social integration were important to Hispanic student persistence (2007).

College Readiness Measures

Advanced Placement. Advanced Placement enabled students to earn college-level course credits while still in high school. Advanced Placement courses offered a variety of benefits to high school students including: higher acceptance rates in colleges, bridging of the gap between high school and college, reducing the number of college courses needed for graduation, thus increasing speed of graduation and reducing total tuition costs (College Board, 2008). Participation in an Advance Placement program was often considered one of the most effective ways of providing rigorous coursework and was often used as an indicator when ranking the quality of United States high schools (Morse, 2007). Students who enrolled in AP courses and participated in AP exams exhibit higher graduation rates, higher high school grade point averages, and were more likely to matriculate into college compared to students who did not participate in AP (Conley, McGaughy, Davis-Molin, Farkas, & Fukada, 2017; Long, Conger, & Iatarola, 2012). McKillip and Rawls (2013) conducted a study exploring the relationship between AP testing and Scholastic Aptitude Test (SAT) scores. The researchers found that students who scored a 3 or higher on an AP exam had higher scores SAT Exam scores than non AP students (McKillip and Rawls, 2013)

Advanced Placement tests were administered at the end of each AP course. AP test scores were criterion referenced and fall on a range from 1 to 5 as follows: 1) No

Recommendation, 2) Possibly Qualified, 3) Represents Qualified, 4) Well-Qualified, or 5) Extremely Well-Qualified (College Board, 2008). Students who received an AP score of "3" or higher were considered as "passing" and received college credit for the course (College Board, 2008).

Students have limited probability of becoming college ready unless they take high level courses that extend beyond core high school requirements (ACT, 2007b). A 2007 study conducted by Morgan and Klaric compared subsequent course grades of AP students and non-AP students across 26 different colleges and universities. Students scoring "3" or higher on AP exams consistently outperformed non-AP students (Morgan and Klaric, 2007). Watt, Huerta and Alkan's (2014) study investigated fifty university students attending a Hispanic serving institution who participated in at least two years of AVID in high school in an attempt to gauge their college success. A mixed method approach, using high school and university data combined with student interviews, was used to determine success and achievements. Using logistic regression analysis, the researchers determined that earning college credit in high school was a significant predictor of college success ($p=.040$).

A 2007 statewide study across four year institutions in the State of Texas found students who completed an AP course and exam significantly outperformed non-AP students on several college outcomes, including fourth-year GPA and 4 year graduation rates (Hargrove, Godin & Dodd, 2007). In addition, students who completed the AP course and exam significantly outperformed AP course only students in college outcomes in the same study (Hargrove et al., 2007).

In light of the research indicating the success of AP students, Klopfenstein and Thomas (2010) cautioned that the research was not clear whether AP experience alone increased the

probability of college success. A 2005 study by Klopfenstein and Thomas found that after controlling socioeconomic and academic factors, there was no relationship between college success and taking AP courses.

Dual Enrollment. Dual enrollment was defined "an academic program where-college level courses are offered to high school students for college credit" (Krueger, 2006. P1). Adelman (2006) stated that "an important indicator of college persistence is the number of credits earned by the end of the first year of college." Students gaining college credit while still in high school would seem to have an advantage in this respect. Studies have shown that dual enrollment programs fostered the cooperation between high schools and colleges to create a student who is academically better prepared and has a clearer understanding of the level of rigor expected in college (Karp, Bailey, Hughes, & Fermin, 2004). Watt, Huerta and Alkan (2011) found that students earning college credit in high school was a significant predictor of college success ($p=.040$).

The ACT. The ACT exam is a college entrance exam utilized by colleges and universities across the United States since 1959. Originally known as "American College Testing", the exam and its parent company are now simply known as "ACT". (ACT, 2014). The ACT test consisted of four timed multiple choice exams in mathematics, English, reading and science.

The ACT Technical Report (2007) indicated that a systematic sample of 2000 examinees from the 2005-2006 school year was used to determine reliability across each test and subsequent subtest. Scale score reliability ranged between .69 to .88 on subtests and from .85 to .91 on the four core tests. The overall scale score for reliability on the composite score had a median value of .96 with a median SEM of .94 (ACT, 2007).

The Texas Success Initiative (TSI). The Texas Success Initiative (TSI) was implemented in Fall 2003 as a means to determine college readiness and the need for remediation for all students entering Texas colleges and universities under Texas Education Code §51.3062. The law required all entering college students to be assessed for college readiness in reading, mathematics and writing. If a student failed to meet the minimum passing standard for any of the exams, the institution must place the student in placed in a developmental education program, colloquially known as remedial classes designed to help the student reach the mandated levels of college readiness (TEA, 2003).

The assessment used to measure college readiness under the Texas Success Initiative has evolved since 2003 (College Board, 2008). Initially employing a barrage of available test instrument options, including ACCUPLACER and the Texas Higher Education Assessment (THEA), the TSI testing instrument has been revised and now in place for Fall 2013 going forward is the TSI Assessment (TSIA). Students taking the TSIA will start with an initial placement exam of 20-25 items which will produce a numeric scale score in a range from 310-390. The TSIA Placement exam is a computer adaptive assessment and specific questions that appeared on any given administration varied based on the individual student performance (College Board, 2014).

Appendix Table 1 illustrated the breakdown of skills and questions listed on the TSIA Placement and subsequent Diagnostic test. Students were tested on fundamental Algebra, Geometry and Algebra II skill for the mathematics test (College Board, 2014). The reading assessments gauged student proficiency in main idea and supporting details, author's intent, inference, and literary analysis (College Board, 2014). The writing test assessed sentence structure, subject verb agreement, sentence logic and essay revision (College Board, 2014).

Questions increased and decreased in difficulty based on how students responded. If a student fell below the approved college-readiness cut scores, they were required to take either the TSI Diagnostic Test or an Adult Basic Education Test, depending on their placement score (College Board, 2014). Students must score a minimum of 356 in Mathematics, 355 in Reading or an essay score of 5 in the Writing or an essay score of 4 combined with a multiple choice score of 363 to be considered college ready (College Board, 2014).

While specific information concerning the validity and reliability of the TSI Assessment has not been made public as of time of writing, The College Board released statements indicating the Standard Setting Process used in the creation of test items as well as the steps taken to ensure fairness of the TSIA. In addition, steps were taken to ensure that the TSI A is properly aligned with the Texas Education Agency's Texas Essential Knowledge and Skill (TEKS) as well as the College and Career Readiness Standards (CCRS) (College Board, 2014).
Appendix 1 contains a blue print indicating TEKS and CCRS alignment with the TSIA.

Advancement Via Individual Determination

Advancement Via Individual Determination (AVID) was a program created in 1980 by Mary Catherine Swanson, an English teacher at Clairemont High School, a newly desegregated high school, in San Diego, California. Swanson sought to find the means to help these underserved students survive and thrive in the rigorous classes they found themselves placed in. Swanson believed in a simple formula- raise the expectations of students and provide the necessary social and academic support and students will rise to the challenge (AVID Center, 2012a). The program, which was based on the implementation of an elective class, involved combining social, as well as academic support for underserved students (Lozano et al, 2009). Swanson's philosophy revolved around the belief that "rigor without support is a prescription for

failure and support without rigor is a tragic waste of potential" (Swanson, 2000, p 26). Instruction focused on writing, reading, collaboration, and inquiry (Watt, Johnston, Huerta, Mendiola and Alkan, 2008). Instruction also included an AVID-developed writing-to-learn process, critical inquiry, and techniques for collaborating with other students (Swanson, 1994). Also included as part of her college readiness survival strategies were a systematic note taking strategy known as Cornell Notes and a comprehensive AVID binder, to be used as an organizational tool (Swanson, 1996). Tuesdays and Thursdays were reserved for small group tutorial sessions lead by tutors who have training in Socratic questioning techniques (Nelson, 2007). The AVID elective class also introduced students to various concepts involved in college admissions process. Ensor (2009) noted that the AVID elective course provided students with valuable insight into the college admission process including admissions requirements, testing, college choices, and financial aid. Of the 31 students in Swanson's original class, 28 matriculated into college (Mehan, Villanueva, Hubbard, & Lintz, 1996).

AVID was created in an effort to help academically underserved students not only find success in a rigorous high school environment, but also matriculate to and succeed in college (AVID Center, 2012a). The AVID program built a philosophy of accountability, rigor and both academic and social support around its initial thirty students. As a result, Swanson was asked to develop an AVID high school curriculum by the San Diego Office of Education in 1996. This curriculum also included a professional development model for teachers and administrators (Swanson, 1996).

The successes of those initial students begat a national movement which today boasts over 700,000 students being served in over 4,800 elementary and secondary schools in 48 states, the District of Columbia and sixteen countries (AVID Center, 2012a). AVID strived to reach

students who were "academically in the middle" and displayed traits such as: underachieving relative to their potential, the first in their family to attend college and have faced personal challenges (AVID Center, 2012b). Swanson (2000) explained AVID's success as follows, "AVID has grown because it engages students who are often overlooked as having college potential, develops the academic and social skills that empower them to access the most rigorous curriculum at their schools, and supports them in that acquisition" (p.27).

Watt, et al. (2008) described AVID's target population as "AVID targets students from the academic middle-those who earn B's, C's, and D's-and who have the willingness and potential to succeed in more rigorous coursework (p. 18). Many AVID students were underrepresented minorities, who might also be economically disadvantaged first-generation college students (Watt, et al., 2008).

Upon hire by the San Diego Office of Education as AVID Coordinator, Mary Katherine Swanson created an assessment system to be used to verify fidelity of the AVID model. This assessment system would eventually become AVID's Eleven Essential Elements (Johnson, Nickel, Popp, & Marcus, 2011).

AVID institutionalized eleven "essentials" as the underpinnings of its academic framework. Schools participating in AVID utilized:

- Essential One: A selection process that involved actively seeking out student in the academic "middle" who were first generation college students.
- Essential Two: A voluntary process for recruiting both students and staff.
- Essential Three: An AVID elective class during the traditional school day.
- Essential Four: An emphasis on students enrolling in a rigorous curriculum (including Advance Placement and Dual Enrollment).

- Essential Five: A writing-based curriculum.
- Essential Six: An emphasis on inquiry.
- Essential Seven: Student collaboration and social interaction.
- Essential Eight: An in- class Socratic style tutorial process.
- Essential Nine: A reliance on data (and subsequently data collection) and research, including usage of the AVID Center Data System.
- Essential Ten: A commitment from the parent school district to provide time and resources to the AVID Program
- Essential Ten: An interdisciplinary Site Team that meets on a regular basis and took accountability to "steer" the AVID Program at the respective school (AVID Center, 2012c).

Adherence to the Eleven Essential Elements was gauged by the AVID Certification Self-Study (CSS). The CSS was an instrument for measuring implementation fidelity for the AVID Program in secondary schools. Each of the Eleven Essential Elements was rated on scale of zero to three with Level 0-Non-AVID, Level 1-Meets Certification Standards, Level 2-Routine Use, and Level 3-Institutionalization. The CSS scores ranked schools in one of three categories: Non-Certified/Affiliate, Certified, and Demonstration (Johnson, Nickel, Popp, and Marcus, 2011). To be an AVID Certified School, all Eleven Essentials must be rated at a Level 1 or higher. Demonstration Schools must meet all Essentials at a score of two or higher, must be certified for at least three years, and have a recommendation from an AVID Regional or District Director which must be validated by an on-site visit (Johnson et al., 2011).

The site team in an AVID certified school was crucial to success. The site team, along with the AVID coordinator was responsible for charge of coordinating student selection, college

preparation curriculum, tutoring, professional development, fundraising, and parental components (Swanson, 2000). The site team ensured that the students recruited for the AVID program met the mandatory national requirements (underachieving, were enrolled in regular, non-college preparatory coursework, but had college potential) (Swanson, 2000). The site team also ensured that these students were then exposed to college preparatory (pre-AP) and college level (AP or dual enrollment) classes and received the requisite social and academic support provided by the AVID elective class.

AVID was also used as a model for state reform in the State of Texas. In 1999, twenty-six schools, spread out over seven school districts in the State of Texas implemented AVID as their school-wide reform model (Watt, Yanez & Cossio, 2003). These schools were granted Comprehensive School Reform Demonstration (CSRD) grants from the federal government through the Texas Education Agency as a means to change the method in which instruction was conducted and access to more rigorous coursework was granted (Watt et al., 2003).

Two years after implementation, these schools were re-visited to ascertain the levels of change. Research found that standardized testing passing rates rose 15 % in math and 7% in reading for students who were enrolled in AVID for the two years (Watt et al., 2003). In addition, over 90% of AVID students found themselves placed in rigorous courses for the first time in their educational careers. Despite this fact, grade point averages and attendance rates tended to rise or remain at high levels (Watt et al., 2003).

Researchers concluded that in schools that followed a proper implementation of an AVID program (AVID implemented in instruction, a strong "AVID-ized" campus leadership and campus policies) had underachieving, economically disadvantaged, ethnic minority students succeeding in a rigorous curriculum (Watt et al., 2003). Underserved, ethnic minority students

were finding academic success in rigorous classes, for which they had no prior experience through the benefits of the AVID elective class and the AVID-ization of their schools.

Students who joined AVID tended to stay in AVID. Watt et al. (2008) conducted a study of California and Texas high schools to discover why students elected to stay within the AVID system. Watt et al. (2008) chose the two high schools in Texas and California with the highest AVID retention rate and the two high schools in each respective state with the lowest retention rates to study. Through the use of survey data and focus groups, the researchers found that students persisted in their AVID programs due to AVID support and academic strategies and a feeling of family (Watt et al., 2008).

The AVID elective course teacher can have an impact on students' fidelity to the program. A 2014 study by Mills, Huerta, Watt and Martinez examined the perceptions of teachers and administrators in regard to the attributes intrinsic to a teacher leader implementing an AVID system as school reform. Mills, et al. (2014) used survey methodologies and quantitative analysis to analyze leadership attributes. 2309 teachers and 1220 administrators completed a survey instrument consisting of 16 demographic questions and 20 leadership items at seven AVID Summer Institutes during summer of 2009 (Mills, et al., 2014). Results found that both teachers and administrators agreed that teacher attributes related to classroom environment were more important than attributes concerning professional growth and school and district environments. Teachers favored attributes concerning high standards for all students, effective classroom management and equitable learning for all (Mills et al., 2014). This would support Bourdieu's (1977) concept of cultural capital. By AVID teachers supporting equitable learning for all students, they were supporting the fostering of cultural capital in underrepresented students. Administrators favored AVID teacher attributes that supported

professional development, mentorship for other teachers and leading district level professional development efforts (Mills et al., 2014). By combining the administrator and AVID teacher paradigms, Mills et al. indicated that "AVID can be used as a vehicle to open the doors of communication between teacher leaders and administrative leaders…to drive academic achievement for all students" (p. 160).

AVID can prove effective for college retention as well, particularly for students of Hispanic descent as well. A 2010 study by Mendiola, Watt, and Huerta studied retention rates of Hispanic Students who matriculated into a particular college. 79% of the subjects were on target to graduate within six years. This figure was highlighted when compared to the overall six-year graduation rate for the institution in question at 25-35% (Mendiola et al., 2010). Retention rates of AVID students in a four-year institution were also the focus of Watt, Huerta and Alkan (2011). This study found that 60% of AVID students were on track to graduate in six years or less at a four-year university, compared to 30-36% of the traditional student body at the same institution (Watt et al., 2011).

AVID can impact college performance as well. Huerta and Watt (2015) conducted a study of former high school AVID students to examine any disparity between educational outcomes between the students who enrolled in four year universities compared to those who enrolled in community colleges. Huerta and Watt used a sample of 329 AVID high school graduates who were spread out over 22 universities and 6 community colleges across the Unites States (2015). Students' college transcripts were reviewed, and a form entitled *AVID Graduates Data Collection Form* (Huerta, Watt, & Reyes, 2013; Watt, Huerta, & Alkan, 2011) was emailed to all potential participants in their first year of college. Huerta and Watt measured the effect of the predictor variables of number of years of AVID preparation, college credits earned in high

school, overall GPA, AP courses completed, number of AP tests complete, and the completion of the SAT upon the dependent variables of enrollment in both Fall and Spring semesters immediately after high school, first year retention, first year credit accumulation and if the student was progressing towards graduation after being enrolled for two years (2015). Regression analysis was used to determine the relationship between variables. Huerta and Watt (2015) found that while the college preparation of high school AVID student was comparable in some aspects, differences in high school preparation and performance between those who attend community college and those who attend universities did exist. Students who enrolled in universities enrolled in more AP courses and had higher GPAs while in high school (Huerta and Watt, 2015). AVID graduates enrolled in universities also were more apt to be on track to graduate in six years after both their first and second year of college (Huerta and Watt, 2015).

A 2014 study by Llamas, Lopez and Quick viewed AVID participation and the effects of participation in an AVID program through a slightly different lens to gain the student perspective. The researchers used a mixed methods approach to study the perspectives of 161 high school students in California. First, the participants participated in a semi-structured interview wherein researchers asked a series of five open-ended questions (along with follow-up probing questions) to gauge the students experiences and perceptions associated with the AVID program (p. 200). Students were also given subscales from the Resilience Youth Development Module (WestEd, 2003) in which participant's perceptions of school support, meaningful participation, and personal strengths were measured.

Using thematic analysis to analyze interview questions, the researchers discovered several emergent themes concerning student's perceptions on AVID including: positive environment, social connection, personal growth, responsibility, self-discovery, consistency,

academic preparation, motivation, peer motivation, and support. In reviewing the qualitative data, researchers discovered participation in the AVID program having small to moderate positive effects on self-efficacy, problem solving, and self-awareness in relation to the norming sample. Larger positive effects were found in the areas of empathy and school support (Llamas, et al. 2014).

In short, Llamas, et al. (2014) found that AVID students repeatedly referenced perceptions of social support from teachers and peers, which helped bolster academic success (p. 208). AVID students felt more supported by and connected to their schools. AVID students in this study felt a greater sense of responsibility and accountability, as well as higher levels of self-efficacy, problem-solving, and self-awareness (p. 208). This supported the idea that exposure to and interaction with college preparatory programs, such as AVID, might contribute to higher levels of college going efficacy, which in turn might contribute to higher levels of college matriculation.

In addition, a 2013 study by Parker, Eliot and Tart examined the influence of the AVID program on African American male students. Researchers conducted one-on-one interviews with nine African American males between the ages of 15 and 19 years old, two were 9th graders, four were 12th grades and three were college students. Interview protocols included separate questions specialized for high school students and questions specialized for college students. Sixteen questions were asked of each student, including questions concerning teacher availability, student goals and expectations, impetus for attending college, and perceptions of the assistance AVID provided (p. 159). Data were coded into three categories, by way of frequency tables. These categories included academic, social, and educational attitudes. Once coded and categorized, themes were identified. Emergent themes included supportive relationships forged

within the AVID class, African American men striving to do better academically, specific AVID methodologies used to improve African American men's achievement in preparation for college and how AVID positively affected African American young men's attitude toward education (pp 160-163). Parker, et al (2013) found that African American males that participated in the AVID program had higher expectations of themselves and attributed their success to close student-teacher relationships (p. 163). Peer-to-peer relationships in the AVID classroom also showed to be instrumental in student success, as students found inclusion in the fact that their peers shared many of the same goals (p. 163).

The benefits of participating in AVID appeared to be far reaching, which begged the question as to what would occur if students participated in an AVID elective course earlier in their academic career. Huerta, Watt, and Butcher (2013) studied the difference in college readiness and high school performance between students who participated in an AVID program in high school only and those who participated in an AVID program in middle school and high school. Huerta et al. (2013) utilized an online survey entitled the Senior Data Collection Form to solicit responses from AVID seniors. Students were asked to self-report their ACT scores, their SAT scores, Advanced Placement courses taken, dual enrollment courses taken academic grade point average (GPA), and overall GPA. Based on their responses, students were placed into one of two cohort groups: Cohort 1 included students who participated in AVID in high school only and Cohort 2 contained students who participated in AVID in both middle school and high school. While the researchers did not find significant differences between the cohorts for ACT and SAT scores, they did find significant differences in GPA. Academic GPA scores for students in Cohort 1 had a mean of 3.03 while cohort 2 held a mean academic GPA of 3.14. Overall GPA scores yielded similar results. Cohort 1 had an overall GPA mean of 3.07 and

students in Cohort 2 held an overall GPA of 3.16 (Huerta et al., 2013). This supported the notion that longer participation in an AVID program could increase performance. Huerta et al. (2013) stated "the findings reaffirm the notion that the longer a student is engaged in college preparation activities and AVID in particular, the more prepared the student is for high school rigor and college readiness" (p. 34).

Summary

This chapter provided a literature review of college readiness, including a history of college readiness initiatives in the United States. The review of literature also explored David Conley's work in the field of college readiness, including his seven principles schools can use to assist high school students to successfully matriculate into college (Conley et al., 2010). A review of the literature concerning first-generation Hispanic college students was also provided in this chapter. Key findings included data indicating that first-generation college students have a propensity to be non-white and low-income (Lohfink and Paulson, 2005). In addition, data revealed that first-generation students tend to delay enrollment and require remediation (Chen, 2005; Reid and Moore, 2008). Research also indicated that the addition of parental and teacher support and a locus of control on the part of the student can lead to degree attainment in spite of beginnings (Sciarra and Whitson, 2007). Literature concerning the history, application and results of the AVID college readiness system was also reviewed. AVID students tend to have higher college retention rates than their peers (Mendiola, Watt and Huerta, 2010; Watt, et al., 2011). Huerta, Watt and Butcher (2013) also found that longer term participation in AVID (students who participated in AVID in middle school and high school compared to high school participation only) resulted in higher grade point averages. First-generation Hispanic college students seemed to lack advantages in college readiness that their White peers possess.

Participation in programs that provide support systems (such as AVID) can assist in leveling the playing field and help increase college readiness metrics among this population.

CHAPTER III

METHODOLOGY

The purpose of this study was to determine if a relationship exists between first generation Hispanic student participation in an AVID program and college readiness. In addition, this study sought to determine if significant differences exist in college readiness between first generation Hispanic students who participated in middle school AVID and in the level of college readiness compared to the first generation Hispanic students who participated in high school AVID only.

This chapter contained the methodology that will be used to answer the research questions and contains the following sections: research design, research questions, hypothesis, variables, population, ethical considerations, access to data, data collection and analysis.

Research Design

The quantitative design of this study was used to examine the association of participation in an AVID course on college readiness indicators in a large South Texas school district. Logistic regression analysis was used to examine the relationship between the dependent variable, college readiness, and the predictor variables: AVID elective course participation, Advanced Placement courses taken, Advanced Placement Exams taken, Advanced Placement Exams passed, Dual Enrollment Courses Passed, and ACT Composite score. Logistic regression was used to describe data and explain the relationship between the dependent variable and one or more independent variable. Logistic regression is a statistical method for analyzing

data where there are one or more independent (predictor) variables that determine an outcome (dependent variable). The dependent variable is a dichotomous variable, with only two outcomes available (Hosmer, D.W., Lemeshow, S., & Sturdivant, R.X., 2013). The goal of logistic regression is to find the best fitting model to describe the relationship between the variables. Logistic regression generates the coefficients and significance levels of a formula to predict a logit transformation of the probability of presence of the dependent variable (Hosmer et. al, 2013).

Hypotheses

The following null hypotheses were intended to match their corresponding research questions.

Null hypotheses 1:

> AVID elective course participation in high school, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment courses passed, and ACT Composite scores are not a function Texas Success Initiative Reading Scores for First-Generation Hispanic high school students.

Null hypotheses 2:

> AVID elective course participation in high school, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed, and ACT Composite scores are not a function Texas Success Initiative Writing Scores for First-Generation Hispanic high school students.

Null hypotheses 3:

> AVID elective course participation in high school, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses taken, and ACT Composite scores are not a function Texas Success Initiative Math Scores for First-Generation Hispanic high school students.

Null hypotheses 4:

> Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment courses passed, and ACT Composite scores are not a function Texas Success Initiative Reading Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school.

Null hypotheses 5:

> Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed, and ACT Composite scores are not a function Texas Success Initiative Writing Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school.

Null hypotheses 6:

> Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed and ACT Composite scores are not a function Texas Success Initiative Math Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

Variables

The dependent variable, college readiness, was measured by student's scores on the Texas Success Initiative Assessment in reading, writing, and mathematics and coded as "1" for pass and "0" for not passing. If students had multiple attempts at passing the TSI Exam, only the highest score was recorded by the researcher and codified to pass/fail for the logistic regression.

The independent variables were measured as follows: AVID elective course participation were indicated by student participation in an AVID elective course 2 consecutive years in high

school. This was recorded as a dichotomous variable and coded as "0" for no AVID participation and "1" for AVID participation. Middle school AVID participation was measured by actual number of years participating in an AVID elective course in sixth, seventh, or eighth grade, ranging from 0 through 3. Advanced Placement courses taken were indicated by the actual cumulative number of AP courses completed by each student for the duration of their academic career. Advanced Placement Exams taken were indicated by the actual cumulative number of AP Exams attempted by each student for the duration of their academic career. Advanced Placement Exams passed were indicated by the actual cumulative number of AP exams passed by each student for the duration of their academic career. If multiple attempts on the same AP Exam were attempted, only the highest score was recorded. Dual Enrollment courses passed were indicated by the actual cumulative number of Dual Enrollment courses passed with a grade of 70 or higher by each student for the duration of their academic career. ACT Composite Score were indicated by the actual ACT Composite score as reported by ACT. If multiple attempts on the ACT were attempted, only the highest score was recorded by the researcher. AVID Middle School participation was indicated by the actual number of years (0-3) the student was enrolled in the AVID elective course in middle school as indicated on the students' academic record, as indicated on the Skyward Student Information Management System.

Population and Sample

The population for this study consisted of junior and senior level students from four high schools in a large South Texas school district. The researcher sought students who participated in the AVID program during the 2014-2015 academic school year, as well as junior and senior level students taking and advanced coursework who shared similar demographics, but who did not participate in an AVID elective course. Non-AVID students were selected using

demographic data similar to those of first-generation college students. Search criteria included students who were academically at risk of dropping out, low socio-economic status and minority students who attempted at least one TSI exam. Students were identified by indicator codes in the Skyward student data management system. Skyward identified students by data feeds from the Public Education Information Management System (PEIMS). Juniors and seniors were purposefully selected to satisfy the predictor variable requirements of two consecutive years' enrollment in and completion of an AVID elective course in high school. This would not be possible with freshmen or sophomore students. In addition, junior and senior level students have, by nature, enrolled in a greater number of courses, therefore the opportunity to enroll in advanced level Dual Enrollment courses and Advanced Placement courses is higher. Students who participated in the AVID program were further divided in to two sub-populations: those who participated in middle school AVID (6^{th} through 8^{th} grade) with a minimum of two years participation in high school AVID, students with a minimum of two years participation in high school AVID with no participation in middle school AVID.

While randomization of the sample population is optimal in research design, the voluntary nature of the AVID elective class prohibits a random sample. AVID student selection is voluntary on the part of the student. As a result, non-probability sampling, specifically purposeful sampling, was used in this study. A similar methodology for sampling was used by Fitzgerald, Gordon, Onwuegbuzic, Canty, Stitt and Frels (2013) when comparing archival data to examine differences in graduation completion rates at different size high schools in Texas.

The school district was chosen due to its long standing implementation of and participation in the AVID system. For over ten years, Achieve ISD has been a proponent of the

AVID system with eleven schools (four high schools, six middle schools and one alternative education academy) qualified as certified AVID schools.

Ethical Considerations

The IRB process was completed and approved upon proposal defense. A request to conduct research and collect data was submitted to and approved by Achieve ISD's Superintendent.

Access to Data

The researcher submitted a letter to Achieve ISD Superintendent outlining the parameters of the study and requesting permission to conduct this study with Achieve ISD student data. Upon approval, the researcher then contacted each high school principal and AVID Site Coordinator and schedule a time to meet with the designated staff member from each school site to gather student information. Staff members included Principals, Deans of Instruction, Financial Aid Officers, Advanced Placement Coordinators, and AVID Site Coordinators at each respective high school.

Data Collection and Timeline for Completion

Information used for identifying target populations was gathered from the Skyward student information management system. The Skyward student information management system is a customizable third party software system designed for student data management. The Skyward system consolidates all student data including: student schedules, attendance, course grades, standardized test grades, college entrance exam grades, and college placement exam grades. Skyward also allows for the designation of special populations. Students can be tagged according to their special population of record, such as at risk, low socio-economic status, special education, special medical attention needed, and migrant (www.skyward.com, n.d.).

Achieve ISD has also customized their Skyward student data template to have an indicator designating AVID participation

The senior and junior students who were participating in AVID were identified by the corresponding data field indicating participation. Information on each student was exported from Skyward and stored in an Excel spreadsheet for organization. AVID Site Coordinators for each high school have data corresponding to middle school participation for each student, which was matched to the population. Once the population was identified, data on the dependent variables was extracted.

Advanced Placement Courses Taken and Passed were derived directly from the Skyward student systems transcript page, as was information on Dual Enrolment Courses Passed. Both Advanced Placement courses and Dual Enrollment Courses have unique identifying course numbers in Achieve ISD, making identification immediate. Advanced Placement Exam Scores were available through the AP Coordinator at each campus. TSI and ACT data were available through the Financial Aid Office at each campus. Once the data were consolidated in Excel, a unique ID number was assigned to ensure confidentiality.

Data Analysis

All student data was collected from the Skyward student information system and transferred to Excel spreadsheets for organization. All student name and identifying data were replaced with an alphanumeric designation to protect the anonymity of students involved. Information from the Excel spreadsheet will be entered on to a Statistical Package for Social Science (SPSS) 23 spreadsheet. The SPSS software was then used to analyze the data. A logistic regression analysis conducted. The null hypothesis for the study was tested with a p distributions at the .05 level of significance using a Chi-Square test embedded in the Omnibus

Test of Coefficients and a Hosmer-Lemeshow test for fit, which was embedded within the logistic regression. The likelihood of the predictor variables influencing the dependent variable was ascertained by interpreting the odds ratio of the logistic regression

Research Question 1:

> Are AVID elective course participation in high school, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed, and ACT Composite scores a function Texas Success Initiative Reading Scores for First-Generation Hispanic high school students?

Research Question 2:

> Are AVID elective course participation in high school, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed, and ACT Composite scores a function Texas Success Initiative Writing Scores for First-Generation Hispanic high school students?

Research Question 3:

> Are AVID elective course participation in high school, number of Advance Placement courses taken, number of Advance Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed, and ACT Composite scores a function Texas Success Initiative Math Scores for First-Generation Hispanic high school students?

Research Question 4:

> Are Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed, and ACT Composite scores a function Texas Success Initiative Reading Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

Research Question 5:

Are Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed, and ACT Composite scores a function Texas Success Initiative Writing Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

Research Question 6:

Are Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams passed, number of Dual Enrollment courses passed, and ACT Composite scores a function Texas Success Initiative Math Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

For Research Question one through three, a logistic regression analysis was conducted. The criterion variable for each calculation was college readiness which is operationalized by a passing score on the Texas Success Initiative Assessment (TSI). Texas Success Initiative Assessment consists of exams in reading, writing and math. Exams are scored on a scale as follows: reading 300-390, writing multiple choice 300-390, writing essay 1-8 and mathematics 300-390. Passing scored on the TSI are as follows: Reading 351 or higher, Writing a score of 5 on the essay portion or a score of 4 on the essay combined with a multiple choice score of 363, and Math requires a score of 350. The scores were coded as 0 for not passing and 1 for passing. The predictor variable of AVID participation was coded dichotomously as 0 for no AVID participation and 1 for participation in an AVID course for two consecutive years in high school. Number of AP courses taken were codified as ratio data starting from 1and ascending upward. Number of AP Courses passed were codified as ratio data starting from 1 and ascending upward.

Number of AP Exam passed were the actual number of AP Exams successfully passed and were codified as ratio data starting from 1 and ascending upward. AP Exams are scored on a 1-5 scale with 3 being a passing score. Dual Enrollment courses passed were codified as ratio data starting from 1and ascending upward. Passing was considered a grade of 60 or higher. ACT consists of four exams, English, math, science and reading all of which are scored as ordinal data from score of 1-36.

For research question four through six, a logistic regression analysis was conducted. The criterion variable for each calculation was college readiness which was operationalized by a passing score on the Texas Success Initiative Assessment (TSI). Texas Success Initiative Assessment consists of exams in reading, writing and math. Exams are scored on a scale as follows: reading 300-390, writing multiple choice 300-390, writing essay 1-8 and mathematics 300-390. Passing scored on the TSI are as follows: Reading 351 or higher, Writing a score of 5 on the essay portion or a score of 4 on the essay combined with a multiple choice score of 363, and Math requires a score of 350. Student scores were codified as 0 for not passing and 1 for passing. The predictor variable of AVID participation in middle school was coded as ratio data indicating the actual numbers of years participating in and AVID elective course in 6^{th}, 7^{th} and 8^{th} grade, ranging from 0-3 years. Number of AP courses taken was codified as ratio data starting from 1and ascending upward. Number of AP Courses passed was codified as ratio data starting from 1 and ascending upward. Number of AP Exam passed was the actual number of AP Exams successfully passed and was codified as ratio data starting from 1 and ascending upward. AP Exams were scored on a 1-5 scale with 3 being a passing score. Dual Enrollment courses passed were codified as ratio data starting from 1and ascending upward. Passing was considered a grade of 60 or higher. ACT consisted of four exams, English, math, science and

reading all of which were scored as ordinal data from score of 1-36. The Composite score was the overall score amongst all content areas.

Summary

Chapter three provided methodologies that were used in this study. Research design, research questions, null hypotheses, population, sample, access to data, data collection procedures, and data analysis were presented. Chapter four explained the findings of the research, including a review of procedures, presentation of data, an analysis of data, displays of data from each analytical procedure and limitations in the interpretations of the findings. Chapter five presents a summary and conclusions, which includes a review of the purpose of the study, a summary of findings, interpretations of findings, and implications for future research and as well as for practical professional practice.

CHAPTER IV

RESULTS

This chapter includes the results of this study. The purpose of this study was to examine whether AVID elective course participation, AVID elective course participation in middle school, number of Advance Placement courses taken, number of Advance Placement Exams taken, number of Advance Placement Exams Passed, Dual Enrollment Courses Passed, and ACT composite scores were a function Texas Success Initiative Reading, Writing, and Math Scores for First-Generation Hispanic high school 11th and 12 grade students. This chapter begins with a restatement of the research questions and null hypothesis, followed by an explanation of the variables, including factor analysis and transformation to new standardized variables. This is followed by a description of the sample group and data set. The chapter also includes a breakdown of the logistic regression for each of the six research questions. The chapter concludes with a summary of the results from each of the six logistic regressions.

Research Questions

The research questions addressed in this study were:

Research Question 1: Are AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT composite scores a function Texas Success Initiative Reading Scores for First-Generation Hispanic high school students?

Research Question 2: Are AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT composite scores a function Texas Success Initiative Writing Scores for First-Generation Hispanic high school students?

Research Question 3: Are AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT composite scores a function Texas Success Initiative Math Scores for First-Generation Hispanic high school students?

Research Question 4: Are Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT composite scores a function Texas Success Initiative Reading Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

Research Question 5: Are Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT composite scores a function Texas Success Initiative Writing Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

Research Question 6: Are Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT

composite scores a function Texas Success Initiative Math Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

Null Hypothesis

Null Hypothesis 1: AVID elective course participation, number of Advance Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT composite scores are not a function Texas Success Initiative Reading Scores for First-Generation Hispanic high school students?

Null Hypothesis 2: AVID elective course participation, number of Advance Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT composite scores are not a function Texas Success Initiative Writing Scores for First-Generation Hispanic high school students?

Null Hypothesis 3: AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT composite scores are not a function Texas Success Initiative Math Scores for First-Generation Hispanic high school students?

Null Hypothesis 4: Middle school AVID elective course participation, number of Advance Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT composite scores are not a function Texas Success Initiative Reading Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

Null Hypothesis 5: Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT composite scores are not a function Texas Success Initiative Writing Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

Null Hypothesis 6: Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT composite scores are not a function Texas Success Initiative Writing Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

Variables

The dependent variable, college readiness, was measured by student's scores on the Texas Success Initiative Assessment in reading, writing, and mathematics and coded as "1" for pass and "0" for not passing. The independent variables were measured as follows:

- AVID elective course participation were indicated by student participation in an AVID elective course 2 consecutive years in high school. This was recorded as a dichotomous variable and coded as "0" for no AVID participation and "1" for AVID participation.
- Advanced Placement courses taken were indicated by the actual cumulative number of AP courses completed by each student for the duration of their academic career.

- Advanced Placement Exams taken were indicated by the actual cumulative number of AP Exams attempted by each student for the duration of their academic career.
- Advanced Placement Exams passed were indicated by the actual cumulative number of AP exams passed by each student for the duration of their academic career.
- Dual Enrollment courses passed were indicated by the actual cumulative number of Dual Enrollment courses passed with a grade of 70 or higher by each student for the duration of their academic career
- ACT Composite Score were indicated by the actual ACT Composite score as reported by ACT.
- AVID Middle School participation was indicated by the actual number of years (0-3) the student was enrolled in the AVID elective course in middle school

Factor analysis was performed on the variables of Advance Placement course taken, Advance Placement Tests taken, Advance Placement Tests passed, Dual Enrollment courses passed, and ACT Composite. Two factor loadings appeared in the data, the first being among Advance Placement courses taken, Advance Placement Exams taken, and Advance Placement Exams passed. The second factor loading was between Dual Enrollment courses passed and ACT Composite. Once the variables were factored, the scores were standardized first into Z-scores and then T-scores. From this process, two new variables were created: Average of T-Scores for Advance Placement and Average of T-Scores for Dual Enrollment and ACT.

Description of Sample

The sample data for this study was derived from 11th and 12th grade Hispanic students who were enrolled in four high schools in a large school district in South Texas. Data was collected from a total of 1526 student records using the Skyward student data management system. From the four high schools: School one provided 385 students, 190 of whom participated in an AVID elective course. School two provided 378 students, 185 of whom participated in an AVID elective course. School three provided 371 students, 177 of whom participated in an AVID elective course. School four provided 389 students, 195 of whom participated in an AVID elective course. In Research Questions 1, 2, and 3, the full sample population was analyzed. In Research Questions 4, 5, and 6, students who did not participate in AVID in high school were removed from the population.

Data Set

Student information was gathered via reports derived from the Skyward Student Information Management System. Skyward consolidates historical data from instructor gradebooks (Dual Enrollment course information and grades, Advance Placement course information and grades, and historical AVID elective course enrollment information), Public Education Information Management System data (at-risk status and low socio-economic status), and information entered by district counseling staff (Texas Success Initiative, Advanced Placement Testing and ACT data).

Findings

Logistic regression was used to identify independent variables that predict the variance in the college readiness of Hispanic First-Generation high school 11th and 12th grade students in a

South Texas school district. Data from the logistic regressions performed is listed below, by research question.

Research Question 1:

Are AVID elective course participation, number of Advance Placement courses taken, Advance Placement Exams taken, Advance Placement Exams Passed, Dual Enrollment Courses Passed, and ACT composite scores a function Texas Success Initiative Reading Scores for First-Generation Hispanic high school students?

A logistic regression analysis was conducted to evaluate the predictive relationship between Texas Success Initiative reading scores and the independent variables. As shown in Table 1, the null model, with no predictor variables present, indicates the model accurately predicts the dependent variable in 90.4% of cases.

Table 2

Classification from the Null Model TSI Reading

			Predicted		
			TSI Reading Pass		
Observed			NotPass	Pass	Percentage Correct
Step 0	TSI Reading Pass	NotPass	0	146	0.0
		Pass	0	1379	100.0
	Overall Percentage				90.4

The full model, which includes all predictor variables showed an improvement over the base model. While the base model of the logistic regression correctly predicted 90.4 percent of cases, Table 2 showed the full model correctly predicting 91.1 percent of cases accurately, which indicated an improvement over the base model.

Table 3

Classification Full Model TSI Reading

Observed			Predicted		
			TSI Reading Pass		Percentage Correct
			NotPass	Pass	
Step 1	TSI Reading Pass	NotPass	35	111	24.0
		Pass	24	1355	98.3
	Overall Percentage				91.1

The Omnibus Tests of Model Coefficients (Table 4) showed that the inclusion of the block of predictor variables to the null model had a significant impact on the dependent variables. Due to $p<.05$, the null hypothesis for Research Question 1 was rejected.

Table 4

Omnibus Tests of Model Coefficients TSI Reading

		Chi-square	Df	Sig.
Step 1	Step	293.164	3	.000
	Block	293.164	3	.000
	Model	293.164	3	.000

Table 5

Hosmer Lemeshow Test TSI Reading

Step	Chi-square	Df	Sig.
1	7.868	8	.446

The value $p>.05$ in the Hosmer Lemeshow Test indicated goodness of fit in the model for Research Question 1.

In addition, the two pseudo R^2 values, the Cox and Snell R Squares and Nagelkerke R Square (Table 6), showed that between 17.5% and 37.4% of the change in the dependent variable TSI Reading Score can be accounted for by the predictor variables.

Table 6

Model Summary TSI Reading

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	669.463[a]	.175	.374

Table 7 shows the result of the logistic regression for Research Question 1.

Table 7

Variables in the Logistic Regression Equation TSI Reading

							95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	AVID_HS(1)	1.659	.225	54.278	1	.000	5.255	3.380	8.171
	AvergeofTscoresAP	.010	.012	.768	1	.381	1.010	.987	1.033
	AvgTscoresACTDE	.769	.067	131.967	1	.000	2.157	1.892	2.459
	Constant	-6.368	.817	60.695	1	.000	.002		

The results from the logistic regression indicated that $p<.05$ for the predictor variables of AVID high school participation and Average of T scores for ACT and Dual Enrollment indicated significance in predicting the dependent variable of TSI Reading, which allowed for the accurate interpretation of the odds ratio. The predictor variable of Average of T scores for AP did not show significance in predicting the dependent variable of TSI Reading. The odds ratio for AVID high school participation was 5.255, which indicated that students who participated in an AVID elective course in high school were 5.3 times more likely to pass the TSI Reading exam than those students who did not participate in an AVID elective course in high school. The odds ratio for Average of T scores for ACT and Dual Enrollment was 2.157 which indicated students were

2.2 times more likely to pass the TSI Reading exam with every dual enrollment course passed and every one point increase in ACT Composite score.

Research Question 2:

Are AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken , number of Advanced Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT composite scores are not a function Texas Success Initiative Writing Scores for First-Generation Hispanic high school students?

A logistic regression analysis was conducted to evaluate the predictive relationship between Texas Success Initiative reading scores and the independent variables. As shown in Table 8, the null model, with no predictor variables present, indicated the model accurately predicted the dependent variable in 88% of cases.

Table 8

Classification from the Null Model TSI Writing

			Predicted		
			TSI Writing Pass		Percentage
Observed			NotPass	Pass	Correct
Step 0	TSI Writing Pass	NotPass	0	183	0.0
		Pass	0	1342	100.0
	Overall Percentage				88.0

The full model, which included all predictor variables, showed an improvement over the base model. While the base model of the logistic regression correctly predicted 88.0 percent of cases, Table 9 showed the full model correctly predicted 88.7 percent of cases accurately, which indicated an improvement.

Table 9

Classification Full Model TSI Writing

Observed			Predicted		
			TSI Writing Pass		Percentage Correct
			NotPass	Pass	
Step 1	TSI Writing Pass	NotPass	54	129	29.5
		Pass	43	1299	96.8
	Overall Percentage				88.7

The Omnibus Tests of Model Coefficients (Table 10) showed that the inclusion of the block of predictor variables to the null model had a significant impact on the dependent variables. Due to $p<.05$, the null hypothesis for Research Question 2 was rejected.

Table 10

Omnibus Tests of Model Coefficients TSI Writing

		Chi-square	df	Sig.
Step 1	Step	367.363	3	.000
	Block	367.363	3	.000
	Model	367.363	3	.000

Table 11

Hosmer Lemeshow Test TSI Writing

Step	Chi-square	Df	Sig.
1	9.315	8	.316

The value $p>.05$ in the Hosmer Lemeshow Test indicated goodness of fit in the model for Research Question 2.

In addition, the two pseudo R^2 values, the Cox and Snell R Squares and Nagelkerke R Square (Table 12), showed that between 21.4% and 41.2% of the change in the dependent variable TSI Reading Score was accounted for by the predictor variables.

Table 12

Model Summary TSI Writing

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	751.758[a]	.214	.412

Table 13, shows the results of the logistic regression for Research Question 2:

Table 13

Variables in the Logistic Regression Equation TSI Writing

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	AVID_HS(1)	2.112	.222	90.76	1	.000	8.261	5.350	12.755
	AvergeofTscoresAP	.008	.011	.531	1	.466	1.008	.987	1.030
	AvgTscoresACTDE	.741	.061	148.77	1	.000	2.098	1.863	2.363
	Constant	-6.478	.768	71.06	1	.000	.002		

The results from the logistic regression indicated that $p<.05$ for the predictor variables of AVID high school participation and Average of T scores for ACT and Dual Enrollment indicating significance in predicting the dependent variable of TSI Writing, which allowed for the accurate interpretation of the odds ratio. The predictor variable of Average of T scores for AP did not show significance in predicting the dependent variable of TSI Writing. The odds ratio for AVID high school participation was 8.261, which indicated that students who participated in an AVID elective course in high school were 8.3 times more likely to pass the TSI Reading exam than those students who did not participate in an AVID elective course in high school. The odds ratio for Average of T scores for ACT and Dual Enrollment was 2.098 which indicated 2.1 times

more likely to pass the TSI Writing exam with every dual enrollment course passed and every one point increase in ACT Composite score.

Research Question 3:

Are AVID elective course participation, number of Advanced Placement courses taken, number of Advance Placement Exams taken, number of Advance Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT composite scores a function Texas Success Initiative Math Scores for First-Generation Hispanic high school students?

A logistic regression analysis was conducted to evaluate the predictive relationship between Texas Success Initiative reading scores and the independent variables. As shown in Table 14, the null model, with no predictor variables present, indicates the model accurately predicts the dependent variable in 91.1% of cases.

Table 14

Classification from the Null Model TSI Math

			Predicted		
			TSI Math Pass		Percentage
Observed			NotPass	Pass	Correct
Step 0	TSI Math Pass	NotPass	0	135	0.0
		Pass	0	1390	100.0
	Overall Percentage				91.1

The full model, which included all predictor variables, showed an improvement over the base model. While the base model of the logistic regression correctly predicted 91.1 percent of cases, Table 15 showed the full model correctly predicted 91.5 percent of cases accurately, which indicated an improvement over the base model.

Table 15

Classification Full Model TSI Math

Observed			Predicted		
			TSI Math Pass		Percentage Correct
			NotPass	Pass	
Step 1	TSI Math Pass	NotPass	33	102	24.4
		Pass	28	1362	98.0
	Overall Percentage				91.5

The Omnibus Tests of Model Coefficients (Table 16) showed that the inclusion of the block of predictor variables to the null model had a significant impact on the dependent variables. Due to $p<.05$, the null hypothesis for Research Question 3 was rejected.

Table 16

Omnibus Tests of Model Coefficients TSI Math

		Chi-square	Df	Sig.
Step 1	Step	278.943	3	.000
	Block	278.943	3	.000
	Model	278.943	3	.000

Table 17

Hosmer Lemeshow Test TSI Math

Step	Chi-square	Df	Sig.
1	8.618	8	.376

The value $p>.05$ in the Hosmer Lemeshow Test indicated goodness of fit in the model for Research Question 3.

In addition, the two pseudo R^2 values, the Cox and Snell R Squares and Nagelkerke R Square (Table 18), showed that between 16.7% and 37.1% of the change in the dependent variable TSI Reading Score could be accounted for by the predictor variables.

Table 18

Model Summary TSI Math

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	633.346[a]	.167	.371

Table 19, showed the results from the logistic regression for Research Question 3:

Table 19

Variables in the Logistic Regression Equation TSI Math

							95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	AVID_HS(1)	1.811	.240	57.056	1	.000	6.119	3.824	9.790
	AvergeofTscoresAP	-.001	.012	.006	1	.937	.999	.976	1.023
	AvgTscoresACTDE	.765	.069	123.513	1	.000	2.150	1.878	2.461
	Constant	-5.727	.829	47.747	1	.000	.003		

The results from the logistic regression indicated that $p<.05$ for the predictor variables of AVID high school participation and Average of T scores for ACT and Dual Enrollment indicating significance in predicting the dependent variable of TSI Math, which allowed for the accurate interpretation of the odds ratio. The predictor variable of Average of T scores for AP did not show significance in predicting the dependent variable of TSI Math. The odds ratio for AVID high school participation was 6.119, which indicated that students who participated in an AVID elective course in high school were 6.2 times more likely to pass the TSI Math exam than those students who did not participate in an AVID elective course in high school. The odds ratio for Average of T scores for ACT and Dual Enrollment was 2.150 which indicated 2.2 times more likely to pass the TSI Math exam with every dual enrollment course passed and every one point increase in ACT Composite score.

Research Question 4:

Are Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT composite scores a function Texas Success Initiative Reading Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

A logistic regression analysis was conducted to evaluate the predictive relationship between Texas Success Initiative reading scores and the independent variables. As shown in Table 20, the null model, with no predictor variables present, indicated the model accurately predicted the dependent variable in 85.5% of cases.

Table 20

Classification from the Null Model TSI Reading

			Predicted		
			TSI_Reading_Pass		Percentage
Observed			1	2	Correct
Step 0	TSI_Reading_Pass	1	639	0	100.0
		2	108	0	0.0
	Overall Percentage				85.5

The full model showed an improvement over the base model. While the base model of the logistic regression correctly predicted 85.5 percent of cases, Table 21 showed the full model correctly predicted 89.0 percent of cases accurately, which indicated an improvement over the base model.

Table 21

Classification Full Model TSI Reading

Observed			Predicted		
			TSI_ReadingPass		Percentage
			1	2	Correct
Step 1	TSI_Reading_Pass	1	610	29	95.5
		2	53	55	50.9
	Overall Percentage				89.0

The Omnibus Tests of Model Coefficients (Table 22) showed that the inclusion of the block of predictor variables to the null model had significant impact on the dependent variables. Due to $p<.05$, the null hypothesis for Research Question 4 was rejected.

Table 22

Omnibus Tests of Model Coefficients TSI Reading

		Chi-square	df	Sig.
Step 1	Step	269.477	3	.000
	Block	269.477	3	.000
	Model	269.477	3	.000

Table 23

Hosmer Lemeshow Test TSI Reading

Step	Chi-square	Df	Sig.
1	5.510	8	.702

The value $p>.05$ in the Hosmer Lemeshow Test indicated goodness of fit in the model for Research Question 4.

In addition, the two pseudo R^2 values, the Cox and Snell R Squares and Nagelkerke R Square (Table 24), showed that between 30.3% and 53.9% of the change in the dependent variable TSI Reading Score could be accounted for by the predictor variables.

Table 24

Model Summary TSI Reading

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	347.826[a]	.303	.539

Table 25 showed the results from the logistic regression for Research Question 4.

Table 25

Variables in the Logistic Regression Equation TSI Reading

							95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	AVID_MS	-.065	.134	.232	1	.630	.937	.721	1.219
	AvgofTScoresAP	.018	.008	5.406	1	.020	1.018	1.003	1.033
	AvgofTScoresDEACT	-.185	.018	109.112	1	.000	.831	.803	.861
	Constant	14.675	1.659	78.293	1	.000	2361988.849		

The results from the logistic regression indicated that $p<.05$ for the predictor variables of Average of T Scores for Advance Placement and Average of T scores for ACT and Dual Enrollment indicating that these variables were significant in predicting the dependent variable of TSI Reading, which allowed for the accurate interpretation of the odds ratio. The predictor variable of AVID middle school participation did not show significance in predicting the dependent variable of TSI Reading. The odds ratio for Average of T Scores for Advance Placement was 1.018, which indicated that students were 1 time more likely to pass the TSI Reading exam with every Advance Placement course taken, Advance Placement Exam taken or Advance Placement Exam passed. The odds ratio for Average of T scores for ACT and Dual Enrollment .831, however, the beta score was -.185, indicating an inverse relationship with the dependent variable, which indicated students were .83 times more likely to not pass the TSI

Reading exam with every dual enrollment course failed and every one point decrease in ACT Composite score.

Research Question 5:

Are Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT composite scores a function Texas Success Initiative Writing Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

A logistic regression analysis was conducted to evaluate the predictive relationship between Texas Success Initiative reading scores and the independent variables. As shown in Table 26, the null model, with no predictor variables present, indicated the model accurately predicted the dependent variable in 79.7% of cases.

Table 26

Classification from the Null Model TSI Writing

			Predicted		
			TSI_Writing Pass		Percentage
Observed			1	2	Correct
Step 0	TSI_Writing Pass	1	595	0	100.0
		2	152	0	0.0
	Overall Percentage				79.7

The full model showed an improvement over the base model. While the base model of the logistic regression correctly predicted 79.7 percent of cases, Table 27 showed the full model correctly predicted 86.1 percent of cases accurately, which indicated an improvement over the base model.

Table 27

Classification Full Model TSI Writing

Observed			Predicted		
			TSI_Writing Pass		Percentage Correct
			1	2	
Step 1	TSI_Writing Pass	1	555	40	93.3
		2	64	88	57.9
	Overall Percentage				86.1

The Omnibus Tests of Model Coefficients (Table 28) showed that the inclusion of the block of predictor variables to the null model has a significant impact on the dependent variables. Due to $p<.05$, the null hypothesis for Research Question 5 was rejected.

Table 28

Omnibus Tests of Model Coefficients TSI Writing

		Chi-square	df	Sig.
Step 1	Step	323.173	3	.000
	Block	323.173	3	.000
	Model	323.173	3	.000

Table 29 *Hosmer Lemeshow Test TSI Writing*

Step	Chi-square	Df	Sig.
1	6.179	8	.627

The value $p>.05$ in the Hosmer Lemeshow Test indicated goodness of fit in the model for Research Question 5.

In addition, the two pseudo R^2 values, the Cox and Snell R Squares and Nagelkerke R Square (Table 30), showed that between 35.1% and 55.2% of the change in the dependent variable TSI Reading Score could be accounted for by the predictor variables.

Table 30

Model Summary TSI Writing

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	431.580[a]	.351	.552

Table 31, shows the results for the logistic regression for Research Question 5

Table 31

Variables in the Logistic Regression Equation TSI Writing

							95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	AVID_MS	.023	.120	.037	1	.847	1.023	.808	1.296
	AvgofTScoresAP	.007	.007	1.105	1	.293	1.007	.994	1.021
	AvgofTScoresDEACT	-.170	.015	131.558	1	.000	.844	.819	.868
	Constant	14.760	1.487	98.581	1	.000	2576.188		

The results from the logistic regression indicated that p>.05 for the predictor variables of AVID middle school participation and Average of T Scores for Advance Placement indicating that these variables were not significant in predicting the dependent variable of TSI Writing, which did not allow for the accurate interpretation of the odds ratio. The predictor variable of Average of T Scores for Dual Enrollment and ACT showed significance in predicting the dependent variable of TSI Writing. The odds ratio for Average of T scores for ACT and Dual Enrollment .844, however, the beta score was -.170, indicating an inverse relationship with the dependent variable, which indicated students were .84 times more likely to not pass the TSI Writing exam with every dual enrollment course failed and every one point decrease in ACT Composite score.

Research Question 6:

Are Middle school AVID elective course participation, number of Advanced Placement courses taken, number of Advanced Placement Exams taken, number of Advanced Placement Exams Passed, number of Dual Enrollment Courses Passed, and ACT composite scores a function Texas Success Initiative Math Scores for First-Generation Hispanic high school students enrolled in an AVID elective course in high school?

A logistic regression analysis was conducted to evaluate the predictive relationship between Texas Success Initiative reading scores and the independent variables. As shown in Table 32, the null model, with no predictor variables present, indicates the model accurately predicts the dependent variable in 80.2% of cases.

Table 32

Classification from the Null Model TSI Math

			Predicted		
			TSI_Math_Pass		Percentage
Observed			1	2	Correct
Step 0	TSI_Math_Pass	1	599	0	100.0
		2	148	0	0.0
	Overall Percentage				80.2

The full model showed an improvement over the base model. While the base model of the logistic regression correctly predicted 80.2 percent of cases, Table 33 showed the full model correctly predicted 87.6 percent of cases accurately, which indicated an improvement over the base model.

Table 33

Classification Full Model TSI Math

Observed			Predicted		
			TSI_Math_Pass		Percentage Correct
			1	2	
Step 1	TSI_Math_Pass	1	566	33	94.5
		2	60	88	59.5
	Overall Percentage				87.6

The Omnibus Tests of Model Coefficients (Table 34) showed that the inclusion of the block of predictor variables to the null model had significant impact on the dependent variables. Due to $p<.05$, the null hypothesis for Research Question 6 was rejected.

Table 34

Omnibus Tests of Model Coefficients TSI Math

		Chi-square	df	Sig.
Step 1	Step	304.339	3	.000
	Block	304.339	3	.000
	Model	304.339	3	.000

Table 35

Hosmer Lemeshow Test TSI Math

Step	Chi-square	Df	Sig.
1	2.012	8	.981

The value $p>.05$ in the Hosmer Lemeshow Test indicated goodness of fit in the model for Research Question 6.

In addition, the two pseudo R^2 values, the Cox and Snell R Squares and Nagelkerke R Square (Table 36), showed that between 33.5% and 53.1 % of the change in the dependent variable TSI Reading Score could be accounted for by the predictor variables.

Table 36

Model Summary TSI Math

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	439.365[a]	.335	.531

Table 37, shows the results for the logistic regression for Research Question 6:

Table 37

Variables in the Logistic Regression Equation TSI Math

							95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	AVID_MS	-.063	.118	.280	1	.597	.939	.745	1.184
	AvgofTScoresAP	-.004	.007	.271	1	.603	.996	.983	1.010
	AvgofTScoresDEACT	-.161	.014	127.743	1	.000	.851	.828	.875
	Constant	14.963	1.484	101.681	1	.000	315.293		

The results from the logistic regression indicated that p>.05 for the predictor variables of AVID middle school participation and Average of T Scores for Advance Placement indicating that these variables were not significant in predicting the dependent variable of TSI Math, which did not allow for the accurate interpretation of the odds ratio. The odds ratio for Average of T scores for ACT and Dual Enrollment .851, however, the beta score was -.185, indicating an inverse relationship with the dependent variable, which indicated students were .85 times more likely to not pass the TSI Reading exam with every dual enrollment course failed and every one point decrease in ACT Composite score.

Summary

The present study utilized logistic regression analysis to explore the relationship between the dependent variable and independent variables. A logistic regression analysis was used to examine if the dependent variable of college readiness as operationalized as Texas Success

Initiative scores, was a function of the independent variables. The predictor variables were AVID elective course participation, AVID middle school participation, Advanced Placement courses taken, Advanced Placement Exams take, Advanced Placement Exams passed, Dual Enrollment courses passed, and ACT Composite score. A factor analysis was utilized to determine if any of the variables contained a factor load. Two factors loadings appeared between AP courses taken, AP Exams taken and AP Exams passed, as well as between Dual Enrollment courses passed and ACT Composite. These variables were transformed into z-scores in SPSS. The z-scores were subsequently transformed into T scores as the combined variables: Average of T-Scores for Advance Placement and Average of T-Scores for Dual Enrollment and ACT.

Separate logistic regressions were run using AVID elective course participation in high school as the third predictor variable for each of the dependent variables TSI Reading scores, TSI Writing scores, and TSI Math scores were run for research questions one, two, and three. In each instance, the null model of the regression, which predicts the accuracy of the model with no predictor variables present, indicated that the model accurately predicted the dependent variable with Reading being 90.4% accurate, Writing being 88% accurate and Math being 91.1% accurate. When the predictor variables were added, the accuracy increased to 91.1% accurate, 88.7% accurate, and 91.5% accurate, respectively. The Hosmer Lemeshow test showed a significance level of $p>.05$, indicating that the model possessed goodness of fit for each logistic regression. The Omnibus Tests of Model Coefficients, which included a Chi-square test, showed significance at the $p<.05$ for each measured dependent variable, which indicated that the predictors had a significant impact on the dependent variables. This allowed for the rejection of the null hypothesis for research questions one, two, and three.

The logistic regression for research question one showed p<.05 for the predictor variables of AVID high school elective participation and Average T Scores for ACT and dual enrollment. This allowed for accurate prediction of the odds ratio. The odds ratio for AVID high school participation was 5.255, which indicated that students who participated in an AVID elective course in high school were 5.3 times more likely to pass the TSI Reading exam than those students who did not participate in an AVID elective course in high school. The odds ratio for Average of T scores for ACT and Dual Enrollment was 2.157 which indicated students were 2.2 times more likely to pass the TSI Reading exam with every dual enrollment course passed and every one point increase in ACT Composite score. Averaged T Scores AP did not show significance of p.05, therefore the odds ratio could not be accurately predicted, indicating a no significance between the predictor variable of Averaged T Scores AP and dependent variable of TSI Reading.

The logistic regression for research question two showed p<.05 for the predictor variables of AVID high school elective participation and Average T Scores for ACT and dual enrollment. This allowed for accurate prediction of the odds ratio. The odds ratio for AVID high school participation was 8.26, which indicated that students who participated in an AVID elective course in high school were 8.3 times more likely to pass the TSI Writing exam than those students who did not participate in an AVID elective course in high school. The odds ratio for Average of T scores for ACT and Dual Enrollment was 2.098 which indicated students were 2.1 times more likely to pass the TSI Writing exam with every dual enrollment course passed and every one point increase in ACT Composite score. Averaged T Scores AP did not show significance of p<.05, therefore the odds ratio could not be accurately predicted, indicating a no

significance between the predictor variable of Averaged T Scores AP and dependent variable of TSI Writing.

The logistic regression for research question three showed $p<.05$ for the predictor variables of AVID high school elective participation and Average T Scores for ACT and dual enrollment. This allowed for accurate prediction of the odds ratio. The odds ratio for AVID high school participation was 6.119, which indicated that students who participated in an AVID elective course in high school were 6.2 times more likely to pass the TSI Math exam than those students who did not participate in an AVID elective course in high school. The odds ratio for Average of T scores for ACT and Dual Enrollment was 2.150 which indicated students were 2.2 times more likely to pass the TSI Math exam with every dual enrollment course passed and every one point increase in ACT Composite score. Averaged T Scores AP did not show significance of p.05, therefore the odds ratio could not be accurately predicted, indicating a no significance between the predictor variable of Averaged T Scores AP and dependent variable of TSI Math.

In research questions four, five, and six, separate logistic regressions were run using AVID elective course participation in middle school as the third predictor variable for each of the dependent variables TSI Reading scores, TSI Writing scores, and TSI Math scores. In each instance, the null model of the regression, which predicts the accuracy of the model with no predictor variables present, indicated that the model accurately predicted the dependent variable with Reading being 85.5% accurate, Writing being 79.7% accurate and Math being 80.2% accurate. When the predictor variables were added, the accuracy increased to 89% accurate, 86.1% accurate, and 87.6% accurate, respectively. The Hosmer Lemeshow test showed a significance level of $p>.05$, indicating that the model possessed goodness of fit for each logistic regression. The Omnibus Tests of Model Coefficients, which included a Chi-square test, showed

significance at the $p<.05$ for each measured dependent variable, which indicated that the predictors had a significant impact on the dependent variables. This allowed for the rejection of the null hypothesis for research questions four, five, and six.

The results from the logistic regression for research question 4 indicated that $p<.05$ for the predictor variables of Average of T Scores for Advance Placement and Average of T scores for ACT and Dual Enrollment indicating that these variables were significant in predicting the dependent variable of TSI Reading, which allowed for the accurate interpretation of the odds ratio. The predictor variable of AVID middle school participation did not show significance in predicting the dependent variable of TSI Reading. The odds ratio for Average of T Scores for Advance Placement was 1.018, which indicated that students were 1 time more likely to pass the TSI Reading exam with every Advance Placement course taken, Advance Placement Exam taken or Advance Placement Exam passed. The odds ratio for Average of T scores for ACT and Dual Enrollment .831, however, the beta score was -.185, indicating an inverse relationship with the dependent variable, which indicated students were .83 times more likely to not pass the TSI Reading exam with every dual enrollment course failed and every one point decrease in ACT Composite score.

The results from the logistic regression in research question 5 indicated that $p>.05$ for the predictor variables of AVID middle school participation and Average of T Scores for Advance Placement indicating that these variables were not significant in predicting the dependent variable of TSI Writing, which did not allow for the accurate interpretation of the odds ratio. The predictor variable of Average of T Scores for Dual Enrollment and ACT showed significance in predicting the dependent variable of TSI Writing. The odds ratio for Average of T scores for ACT and Dual Enrollment .844, however, the beta score was -.170, indicating an inverse

relationship with the dependent variable, which indicated students were .84 times more likely to not pass the TSI Writing exam with every dual enrollment course failed and every one point decrease in ACT Composite score.

The results from the logistic regression for research question six indicated that $p>.05$ for the predictor variables of AVID middle school participation and Average of T Scores for Advance Placement indicating that these variables were not significant in predicting the dependent variable of TSI Math, which did not allow for the accurate interpretation of the odds ratio. The odds ratio for Average of T scores for ACT and Dual Enrollment .851, however, the beta score was -.185, indicating an inverse relationship with the dependent variable, which indicated students were .85 times more likely to not pass the TSI Reading exam with every dual enrollment course failed and every one point decrease in ACT Composite score.

The conclusion of this study was AVID elective class participation in high school and Average of T scores for ACT and Dual Enrollment are a function of Texas Success Initiative Reading, Writing and Math scores for first-generation Hispanic high school students in South Texas. Summary, conclusions, implications, and recommendations will take place in Chapter 5.

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The purpose of this study was to examine whether the predictor variables AVID elective course participation, Advanced Placement courses taken, Advanced Placement Exams taken, Advanced Placement Exams Passed, Dual Enrollment courses passed, and ACT Composite scores were a function of college readiness in the form of Texas Success Initiative Assessment scores. The researcher analyzed the data using Logistic Regression with on dependent variable (college readiness) and three predictor variables: AVID participation, Average T Scores of Advanced Placement, and Average T Scores of ACT and Dual Enrollment.

Chapter one of this dissertation stated the problem in detail. The purpose was to examine the relationship between college readiness and participation in an AVID elective course for first-generation Hispanic high school students in South Texas. Chapter 2 of this dissertation provided an extensive review of previous research and literature. Key areas of focus were the history of college readiness, including various federal legislation and reform efforts, definitions and the theoretical underpinnings of college readiness, a history of some of the key issues and challenges faced by first-generation Hispanic college students, key college readiness measures including Advanced Placement, Dual Enrollment, the ACT Exam, the Texas Success Initiative, and Advancement Via Individual Determination. Chapter three included a discussion of the research methodology used in this study. The research design, population, sample, data collection

procedures, data analysis, and ethical considerations were described in detail. Chapter four presented the research findings of the data. A review of research questions, data analysis, and findings. Chapter five includes a summary, discussion, conclusions, implications, and recommendations for further study.

Summary

The purpose of this study was to examine whether the predictor variables AVID elective course participation, Advanced Placement courses taken, Advanced Placement Exams taken, Advanced Placement Exams Passed, Dual Enrollment courses passed, and ACT Composite scores were a function of college readiness in the form of Texas Success Initiative Assessment scores. The logistic regression showed that students who enrolled in an AVID elective course were more likely to pass the Texas Success Initiative Exam in Reading, Writing, and Math. In addition, those students who enrolled in multiple Dual Enrollment courses and scored higher on the ACT Exam were more likely to pass the TSI Reading, Writing and Math exams. Significance was not found to indicate Advanced Placement course enrollment, Advanced Placement Exam participation, nor AP Exam passing were likely to affect TSI scores in either of the academic subjects. Thus, AVID elective course participation, Dual Enrollment Participation and ACT Composite scores are a function of TSI Reading, Writing and Math.

AVID middle school participation did not show significance in TSI Reading, Writing, or Math scores. Advanced Placement course enrollment, AP Exam participation and AP Exam passing were only significant for the TSI Reading Exam but not for TSI Writing or TSI Math. ACT Composite Exam score and Dual Enrollment participation were significant in predicting passing of the TSI Reading, Writing and Math exams, however, the relationship was inverse. This indicated that the lower the ACT Composite score and the fewer Dual Enrollment courses

passed the less likely students were to pass their respective TSI exams. Dual Enrollment courses passed and ACT Composite Scores were functions of TSI Reading, Writing and Math scores. AP Course enrollment, AP Exams Taken and AP Exams Passed were a function of TSI Reading scores. AP Course enrollment, AP Exams Taken and AP Exams Passed were not functions of TSI Writing or Math. AVID middle school participation was not a function of TSI Reading, Writing or Math scores,

Conclusions

David Conley's College Readiness (2007) was used as a framework in this study. Conley (2007) theorized that students must master four key components to be considered college ready. Students must master 1) key cognitive strategies; 2) key concepts; 3) academic behaviors; and 4) contextual skills and awareness. These concepts were not mutually exclusive, however can continually intersect through a student's education. Conley (2007) listed key cognitive strategies as critical thinking skills, intellectual openness and student inquisitiveness that becomes integrated into their educational repertoire due to prolonged, regular use. Key concepts are the academic contents, such as writing, research, and academic course content that are needed to successfully pass college courses (2007). Conley (2007) defined academic behavior as behaviors that were necessary for academic success, such as "self-monitoring, self-awareness, and self-control" (p. 16). Contextual skills and awareness were the ability for the student to recognize that the culture and structure of the institution impact their educational experiences and must acclimate and incorporate themselves into the institutional environment (Conley, 2007).

Research suggests that participation in an AVID program can enhance students' levels of college readiness in each of Conley's (2007) four key components. In regards to key cognitive

strategies and key concepts, the AVID curriculum featured strategies designed to increase critical thinking, increase reading ability and questioning through the pedagogy of AVID's Eleven Essentials (AVID Center, 2012a, AVID Center, 2012b, AVID Center, 2012c; Johnson et al., 2011). Watt, Yanez, and Cossio (2003) found AVID students showed greater improvement on standardized tests higher and grade point averages than their non-AVID peers. AVID graduates enrolled in universities also were more apt to be on track to graduate in six years after both their first and second year of college (Huerta and Watt, 2015). Mendiola, Watt, and Huerta (2010) studied retention rates of Hispanic Students who matriculated into a particular college. 79% of the subjects were on target to graduate within six years. This figure was highlighted when compared to the overall six-year graduation rate for the institution in question at 25-35% (Mendiola et al., 2010). Retention rates of AVID students in a four-year institution were also the focus of Watt, Huerta and Alkan (2011). This study found that 60% of AVID students were on track to graduate in six years or less at a four-year university, compared to 30-36% of the traditional student body at the same institution (Watt et al., 2011). AVID's social components and curriculum of navigating the college experience covered Conley's (2007) keys three and four of academic behaviors and contextual skills and awareness, respectively (AVID Center, 2012a, AVID Center, 2012b, AVID Center, 2012c). Students who participated in AVID reported higher expectations of themselves, stronger peer-to-peer interactions, felt a greater sense of responsibility and accountability, as well as higher levels of self-efficacy, problem-solving, and self-awareness (Parker, et al., 2013; Llamas, et al., 2014)

The results of this study are consistent with existing research. The results of this study show students who participated in an AVID elective course in high school were more likely to pass their TSI Reading, Writing and Math assessment exams than students who did not

participate in an AVID elective course. ACT (2013) further defined college readiness as "acquisition of the knowledge and skills a student needs to enroll and succeed in credit-bearing, first-year courses at a post-secondary institution." Furthermore, ACT added (p. 3) "readiness for college means not needing to take remedial courses in postsecondary education or training programs." This was important, as students who pass the TSI Exam in all three subject areas were deemed college ready and not in need of remedial coursework in the State of Texas. This information was important for first-generation college students. First-generation students often attended high schools that lacked high levels of academic rigor (Green, 2006). Additionally, the schools that first-generation students attended might be lacking adequate instruction on developing academic skills needed in college, as well as lacking cultural preparation for college (Ishitani, 2006; Hudley, Moshetti, Gonzalez, Cho, Barry, & Kelly, 2009). Ishitani (2006) and Hudley et al. (2009) also state that first-generation students might be less likely than their non-first-generation peers to receive college preparatory support while in high school. Programs such as AVID are important for the success and college readiness of first-generation students. Superficially, it may have seemed that the lack of significance in the variable of Average of T-scores for AP ran in contrast to current research may be indicative of the pedagogical model employed by Achieve ISD. Participation in an Advance Placement program was often considered one of the most effective ways of providing rigorous coursework and was often used as an indicator when ranking the quality of United States high schools (Morse, 2007). Students who enrolled in AP courses and participated in AP exams exhibited higher graduation rates, higher high school grade point averages, and were more likely to matriculate into college compared to students who did not participate in AP (Conley, McGaughy, Davis-Molin, Farkas, & Fukada, 2017; Long, Conger, & Iatarola, 2012). McKillip and Rawls (2013) found that

students who scored a 3 or higher on an AP exam had higher SAT Exam scores than non AP students (McKillip and Rawls, 2013). The research showed Advanced Placement was capable of providing a solid college readiness foundation, however, as indicated by Conley (2007), rigorous coursework alone does not guarantee college readiness. Conley's (2007) indicated four keys to college success, including conceptual skills and awareness, which rigor alone does not provide. Darling-Hammond, Ancess, and Ort (2002) found that "at risk" high school students benefit from skills-based instruction, including study skills, how to evaluate grading criteria, how to approach academic tasks, and how to evaluate their own and other's work. Klopfenstein and Thomas (2010) cautioned that the research was not clear whether AP experience alone increased the probability of college success. A 2005 study by Klopfenstein and Thomas found that after controlling socioeconomic and academic factors, there was no relationship between college success and taking AP courses. Klopfenstein and Thomas (2009) also found that found no conclusive evidence that, for average students, that AP has a causal impact on college success (p 887). In addition, a recent study indicated that an AP program of less rigor can place minority students who do continue on to college at a continued disadvantage since they also lack some of the knowledge that they are expected to have acquired during the participation in the course (Hallett & Venegas, 2011). This was important, since the inception of this study, Achieve ISD had created early college high schools in each of its 4 high school campuses. Achieve's model included combining Advanced Placement and Dual Enrollment in the same classroom so that students received AP course credit and Dual Enrollment course credit simultaneously. If the teacher of record was qualified to be a Dual Enrollment instructor, they taught both aspects of the course. If the teacher of record was not qualified as an instructor, then a visiting professor from the higher education partner taught the college portion of the course 3 days a week, while

the high school teacher of record taught the AP portion of the class the remaining days. While this works to achieve course credit in both AP and Dual Enrollment, the AP Exam may be in jeopardy. This proved problematic as spending only two days of the week covering AP curriculum would certainly decrease the rigor of the AP portion of the course, resulting in lower test scores. Adelman (2006) states that "an important indicator of college persistence is the number of credits earned by the end of the first year of college." Students gaining college credit while still in high school would seem to have an advantage in this respect. Studies have shown that dual enrollment programs foster the cooperation between high schools and colleges to create a student who is academically better prepared and has a clearer understanding of the level of rigor expected in college (Karp, Bailey, Hughes, & Fermin, 2004). According to research, keeping Advanced Placement and Dual Enrollment courses separate and their own separate entities would increase student success and college readiness.

Research indicated that AVID middle school participation had an impact on high school performance. Cutler (2010) stated that placing students in a learning environment that meets the emotional and developmental needs of these young students may counteract some of the marked declines in student performance during the turbulent middle school years. Huerta, Watt & Butcher (2013) affirmed that the longer a student is engaged in college preparation activities and AVID in particular, the more prepared that student is for high school rigor and college readiness, specifically, students who participated in the AVID elective course in middle school and high school exhibited greater academic performance, were more likely to take rigorous courses and took more AP courses and AP exams than their peers who only participated in the AVID elective course in high school. In this study, significance was not found between middle school AVID elective course participation and Texas Success Initiative Reading, Writing, or Math scores,

which are the metric of college readiness in the state of Texas. One reason for this phenomenon may have been AVID implementation fidelity. Implementation fidelity was defined as "…the degree to which teacher and other program providers implement programs as intended by the program developers" (Dusenbury, Brannigan, Falco, and Hansen, 2003). Watt, Huerta, and Cossio (2004) studied leadership and fidelity of implementation of AVID in four South Texas border school and found that schools that had leadership that embraced AVID as a method of comprehensive school reform and showed support for implementation had staff that took on the responsibility of implementation resulting in higher fidelity to the AVID methodology. Johnston, Nickel, Popp, and Marcus (2010) conducted a study measuring the psychometric properties and validity of the AVID Certification Self Study in relation to program fidelity. Johnston et al., (2010) found that AVID sites that implemented AVID as prescribed and maintained all requisite trainings could expect significantly higher student outcomes than schools that do not adhere to AVID program fidelity.

Program fidelity could be a factor in the lack of significance in AVID middle school participation. Within the Achieve ISD, schools had varying time within the AVID system. Achieve High School has been a certified AVID school for seventeen years and has attained AVID National Demonstration School status. Achieve East has participated in the AVID program for thirteen years and is currently serving its second term as National Demonstration School. Achieve North has participated in the AVID program for fourteen years. Achieve West is a new school and had participated in AVID for three years. According to prior research, it was possible for program fidelity to be a factor in student performance (Watt, et al., 2004; Johnston et al., 2010).

First-generation college students may face ideological and perception-based issues (i.e. self-efficacy) as a factor in high school senior year retention in an AVID program, which can impact their perceptions of college matriculation (Watt, Johnston, Huerta, Mendiola and Alkan, 2008). If students are not in an AVID program in their senior year, they may potentially lose out on valuable experiences that can enhance their transition from high school to college. Based on this information, the researcher felt it pertinent to revisit the research questions using only senior level students in the population. The new logistic regression equations yielded similar results (see Appendix). Students who participated in an AVID elective course were more likely to pass TSI Reading, Writing and Math exams. This further strengthened the belief and added to the body of research that suggested participation in an AVID elective course does have a positive relationship with college readiness in first-generation Hispanic high school students.

Implications

One major implication of this study for educational leaders was that AVID participation in high school was function of college readiness in the form of passing the Texas Success Initiative test in all three content areas, Reading, Writing, and Math. Students who participated in an AVID elective course were more likely to pass the TSI Exam, which was the metric used to determine whether or not a student was in need of remediation coursework when entering college in the State of Texas. Research has found that remediation had a negative impact on degree completion for underprepared students attending four-year colleges as well (Attewell, Lavin, Domina, and Levey, 2006; Attewell, Heil, and Reisel, 2012). First-generation students were listed as most likely to enroll in remedial coursework (Chen, 2005). In addition, Hispanic students were more apt to be enrolled in remedial coursework (Bahr, 2010). When viewed through the lens of preparing underserved students matriculate from high school through college

completion it becomes incumbent on educational leaders to implement college readiness programs, such as AVID, to better serve their students. When viewed through the lens of accountability, the Texas Success Initiative Exam is important in the attainment of Federal distinction on a school's annual accountability report. Domain Four of the accountability report involves a school's college readiness performance, specifically naming the Texas Success Initiative as a unit of measure. As accountability measures continually increase, educational leaders must continually upgrade and expand their pedagogies to best meet the demands of rising metrics.

Another implication for educational leaders involved the passing of Dual Enrollment courses and scoring higher on the ACT Composite being a function of passing the Texas Success Initiative in all content areas. This would indicate that the more Dual Enrollment courses a student took and passed and the higher the score students achieved on their ACT Composite Exam, the more likely the students were to pass the TSI Reading, Writing, and Math exams. It would behoove educational leaders to encourage students to enroll in more Dual Enrollment coursework, as well as participate not only in ACT Exams, but ACT preparatory work as well. AVID is a program that encourages both of these outcomes. By encouraging participation in AVID, leaders can also encourage rigorous coursework and the importance of entrance exams like the ACT. This also encourages fidelity to the implementation of an AVID program. Schools that implement AVID with fidelity to programmatic requirements, have supportive administrators who continually work with teachers on the implementation process, seek improvement through continued training, and employ AVID elective teachers who are dedicated to the mission of college readiness can expect significantly higher student outcomes than schools who do not adhere to AVID fidelity (Watt, et al., 2004; Johnston et al., 2010)

Another implication for educational leaders was that AP participation was not a function of TSI scores in any content area. While more research should be conducted in this area, it should be of note that Achieve ISD combines Advanced Placement courses and Dual Enrollment courses whenever possible. While both types of coursework may result in college credit, AP requires a minimum score of 3 to pass the exam and subsequently receive the credit. While Dual Enrollment and Advanced Placement are both highly rigorous programs, they do have different goals and outcomes. AP programs of less rigor place minority students who do continue on to college at a continued disadvantage since they also lack some of the knowledge that they are expected to have acquired during the participation in the course (Hallett & Venegas, 2011). When an Advanced Placement courses' seat time is cut in half by sharing said time with Dual Enrollment, a program that has similar goals, but different measures of outcome, students are placed at a significant disadvantage due to the lack of AP rigor. It would be incumbent upon educational leaders to keep each course as its own entity.

A final implication from this study is for future college readiness researchers. The results for AVID elective course participation in middle school did not show significance as a function of college readiness in any of the TSI content areas. This runs contrary to current research on the importance to prolonged exposure to college readiness systems, particularly starting in middle school. This harkens back to fidelity of implementation. If school districts are willing to invest in a program such as AVID, it becomes important for educational leaders to ensure the program is implemented and run with fidelity to programmatic requirements.

Recommendations for Further Research

The following recommendations are based on the findings, analysis and conclusions found in this study.

This study should be expanded to include districts and students from varying geographic and socioeconomic backgrounds. The Texas Success Initiative is unique to Texas, while other states may have similar instruments to measure college readiness, the curriculum and alignment may differ, offering different outcomes. Differing socioeconomic backgrounds bring different opportunities and experiences for students. It may prove useful to measure college readiness indicators of students from a wide array of socioeconomic histories.

A larger sample size, combined with multiple linear regression analysis should be conducted to account the sensitivities in individual TSI Exam scores, rather than pass/fail. The TSI Exam is evaluated on a range from 300-390 with the passing cut scores falling at 351 for Reading, a 5 on the essay or 4 on the essay with a multiple choice score of 363 on the Writing, and a 350 cut score for Math. A student scoring a 350 on Reading is at a much different readiness level than a student scoring a 310 on the same exam. A multiple linear regression will allow for variances in scoring.

Advanced Placement did not show significance in predicting TSI performance in Reading, Writing, or Math. It would be of importance to examine the relationship between Advanced Placement and TSI performance in a district setting that does not combine AP and Dual Enrollment in the same classroom. An Advanced Placement classroom with full rigor and no "shared time" could provide different results.

Middle school AVID elective course participation did not show significance in predicting TSI performance in any content area. More research should be conducted in this area. In addition, an exploration of time in the AVID program, as well as commitment to the fidelity of the implementation of AVID could yield different results as well.

A qualitative component, measuring students' perceptions of their college readiness

should be added to the quantitative component of this study for a more robust outlook on college readiness. The data yielded valuable results. A report of student perceptions on their feelings of college readiness could prove significant as well.

Dissertation Summary

The logistic regression analysis conducted in this study offers important implications in both policy and practice. The purpose of this study was to examine whether the predictor variables AVID elective course participation, Advanced Placement courses taken, Advanced Placement Exams taken, Advanced Placement Exams Passed, Dual Enrollment courses passed, and ACT Composite scores were a function of college readiness in the form of Texas Success Initiative Assessment scores.

This was a quantitative study that examined historical student data extracted from the Skyward Student Information Management System. All information was provided to the researcher directly from Achieve Independent School District. A factor analysis was performed to determine whether a factor load existed between variables. It was discovered that AP Courses taken, AP Exams Taken, and AP Exams Passed loaded as a factor. Dual Enrollment Courses Passed and ACT Composite also loaded as a factor. These variables were individually converted to z scores for standardization of the data. The z scores were then converted to T-scores and combined in the new predictor variables of Average of T-Scores AP and Average of T-Scores ACTDE, respectively. A logistic regression analysis was performed using these new variables in conjunction with the predictor variable of AVID elective course participation (in both high school and middle school) and each of the dependent variables of TSI Reading, TSI Writing and TSI Math. The null hypothesis for the study were tested with a p distribution at the .05 level of significance.

The findings of this study indicated the following: 1) AVID elective course participation in High School was a function of TSI Reading, Writing, and Math scores, 2) Average of T-scores ACTDE was a function of TSI Reading, Writing, and Math scores, 3) Average of T-Scores AP was not a function of TSI Reading, Writing, and Math Scores, 4) Middle school AVID elective course participation was not a function of TSI Reading, Writing, and Math Scores. These results highlight the importance of continued research that should be conducted in the arena of AVID participation and college readiness, particularly in the form of college placement exam scores such as the Texas Success Initiative.

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APPENDIX A

APPENDIX A

TEXAS SUCCESS INITIATIVE ASSESSMENT CURRICULUM BREAKDOWN

TSI Mathematics Test	**Questions on Placement Test**	**Questions on Diagnostic Test**
Elementary Algebra and Functions	6	12
Intermediate Algebra and Functions	9	12
Geometry and Measurement	2	12
Data Analysis, Statistics and Probability	3	12
Total	**20**	**48**
TSI Reading Test	**Questions on Placement Test**	**Questions on Diagnostic Test**
Main Idea and Supporting Details	5	12
Authors Use of Language	7	12
Inferences in a Text or Texts	8	12
Literary Analysis	4	12
Total	**24**	**48**
TSI Writing Test	**Questions on Placement Test**	**Questions on Diagnostic Test**
Sentence Structure	5	12
Agreement	3	12
Sentence Logic	4	12
Essay Revision	8	12
Total	**20**	**48**

APPENDIX B

APPENDIX B

LOGISTIC REGRESSIONS TSI READING FOR SENIORS ONLY

Null Model

Observed			Predicted		
			TSI Reading Pass		Percentage Correct
			NotPass	Pass	
Step 0	TSI Reading Pass	NotPass	0	74	0.0
		Pass	0	655	100.0
	Overall Percentage				89.8

Classification Model

Observed			Predicted		
			TSI Reading Pass		Percentage Correct
			NotPass	Pass	
Step 1	TSI Reading Pass	NotPass	23	51	31.1
		Pass	14	641	97.9
	Overall Percentage				91.1

Omnibus Test of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	172.014	3	.000
	Block	172.014	3	.000
	Model	172.014	3	.000

Hosmer-Lemeshow Test

Step	Chi-square	df	Sig.
1	11.211	8	.190

Logistic Regression Equation

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	AVID_HS(1)	1.525	.322	22.410	1	.000	4.596	2.444	8.642
	AvgTscoresACTDE	.842	.101	69.182	1	.000	2.321	1.903	2.830
	AvergeofTscoresAP	.015	.017	.771	1	.380	1.015	.981	1.051
	Constant	-7.370	1.211	37.050	1	.000	.001		

APPENDIX C

APPENDIX C

LOGISTIC REGRESSIONS TSI WRITING FOR SENIORS ONLY

Null Model

Observed			Predicted		
			TSI Writing Pass		Percentage Correct
			NotPass	Pass	
Step 0	TSI Writing Pass	NotPass	0	89	0.0
		Pass	0	640	100.0
	Overall Percentage				87.8

Classification Model

Observed			*Predicted*		
			TSI Writing Pass		Percentage Correct
			NotPass	Pass	
Step 1	TSI Writing Pass	NotPass	34	55	38.2
		Pass	18	622	97.2
	Overall Percentage				90.0

Omnibus Test of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	208.137	3	.000
	Block	208.137	3	.000
	Model	208.137	3	.000

Hosmer-Lemeshow Test

Step	Chi-square	df	Sig.
1	5.099	8	.747

Logistic Regression Equation

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	AVID_HS(1)	1.959	.320	37.364	1	.000	7.091	3.784	13.289
	AvgTscoresACTDE	.838	.096	76.601	1	.000	2.312	1.917	2.790
	AvergeofTscoresAP	.012	.017	.545	1	.460	1.012	.980	1.046
	Constant	-7.632	1.179	41.893	1	.000	.000		

APPENDIX D

APPENDIX D

LOGISTIC REGRESSIONS TSI MATH FOR SENIORS ONLY

Null Model

Observed			Predicted		
			TSI Math Pass		Percentage Correct
			NotPass	Pass	
Step 0	TSI Math Pass	NotPass	0	67	0.0
		Pass	0	662	100.0
	Overall Percentage				90.8

Classification Model

Observed			Predicted		
			TSI Math Pass		Percentage Correct
			NotPass	Pass	
Step 1	TSI Math Pass	NotPass	20	47	29.9
		Pass	11	651	98.3
	Overall Percentage				92.0

Omnibus Test of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	165.238	3	.000
	Block	165.238	3	.000
	Model	165.238	3	.000

Hosmer-Lemeshow Test

Step	Chi-square	df	Sig.
1	2.847	8	.944

Logistic Regression Equation

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	AVID_HS(1)	1.840	.356	26.740	1	.000	6.295	3.134	12.642
	AvgTscoresACTDE	.853	.107	63.838	1	.000	2.347	1.904	2.894
	AvergeofTscoresAP	-.003	.018	.022	1	.883	.997	.962	1.034
	Constant	-6.539	1.235	28.027	1	.000	.001		

BIOGRAPHICAL SKETCH

William Morley is the first of two children born to Robert and Wanda Morley. He was born in Harlingen, Texas in 1974. He graduated from Harlingen High School in Harlingen, Texas in 1992. William attended the University of Texas-Pan American and graduated with a Bachelor of Arts degree in Communication-Advertising and Public Relations in 1997. In 2003, he earned a Master of Arts degree in Organizational Communication from the University of Texas-Pan American. He earned a Doctorate in Education (Ed.D.) in December 2017 from the University of Texas-Rio Grande Valley. William holds Texas Educator Certificates in Secondary ELA (6-12) and Secondary Speech.

William has 19 years of experience in education. He began as the Work-Study Coordinator in the Financial Aid Office at the University of Texas-Pan American where he was quickly promoted to Assistant Director of Student Financial Services. William served in this capacity for seven years when he was called into the classroom environment. He began teaching ELA at Economedes High School in 2009 and has been enamored with the profession ever since. William has taught every section of high school ELA at every level from special education co-teach to Advanced Placement. He also served as ELA Department Co-Chair. In 2012 William was selected to teach AVID and Dual Enrollment Communication courses in the newly minted Early College at Economedes. William also serves as the Instructional Coach/Lead Teacher at the Early College at Economedes. William also has taught Communication courses for the University of Texas-Pan American and South Texas College.