

EXPLORING THE RELATIONSHIP BETWEEN DUAL CREDIT AND ADVANCED  
PLACEMENT ENROLLMENT ON SAT SCORES AT A COLLEGE AND CAREER  
MAGNET HIGH SCHOOL IN NORTH TEXAS

A Record of Study

by

TIFFANY GLENDA STAATS

Submitted to the Office of Graduate and Professional Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

Chair of Committee,	Patrick Slattery
Co-Chair of Committee,	James Laub
Committee Members,	Valerie Hill-Jackson Glenda Byrns
Head of Department,	Michael A. de Miranda

August 2017

Major Subject: Curriculum and Instruction

Copyright 2017 Tiffany G. Staats

## ABSTRACT

The purpose of this quantitative record of study was to explore the relationship between performance on EBRW scores on the SAT and participation in dual credit, advanced placement, or on-level junior English coursework. In addition, the relationship between participation in a collegiate academy magnet program and SAT performance was also of interest as pertaining to enrollment in advanced placement or dual credit courses. A quantitative approach was selected for this study as it involved collecting quantitative data in the form of student PSAT EBRW and SAT EBRW scores obtained from the local school district. The participants in this study consisted of 474 students who were enrolled in a junior level English course at the research site and were administered the PSAT on October 15, 2015, and the SAT on March 2, 2016. The SAT EBRW scores were collected to determine whether the independent variable related to the dependent variable. PSAT EBRW scores were used as a control for student ELAR performance at the beginning of their junior year.

An in-depth ANCOVA data analysis and one-sample *t*-test were utilized to explain the quantitative results. The ANCOVA inferential statistical tests indicated that statistically significant differences existed between SAT scores of students based on English course enrollment, magnet program participation, and race/ethnicity, although effect size were small in all cases. Students enrolled in dual credit junior level English scores do not exceed the average performance of college-bound students as evidenced by the results of the one-sample *t*-test.

## DEDICATION

I dedicate this record of study to my husband, Lath Staats, and my two beautiful daughters, Addison and Emmerson. Thank you, Lath, for always believing in me and pushing me to better myself, even when I didn't think I was good enough. I wouldn't have even started the pursuit of my doctorate if it weren't for your encouragement. Addison and Emme, thank you for inspiring me to want to be a great female role model. Even though I tried to not let my studies affect the time I spent with you, I hope you both know that all of the sacrifices I made were in hopes to someday inspire you to be the greatest women you can be.

Lastly, I would like to thank my parents, Floyd and Debbie Weiss. None of this would have been possible without your love and support. Thank you, Mada, for being the most inspiring role model. You showed me that women could be wonderful mothers while working full-time jobs, and that I could do anything as long as I worked hard for it. Even when faced with cancer, you stayed strong and positive. Witnessing that and how you have overcome so many other obstacles, all while making sure everyone in your family was taken care of, speaks volumes to your character. Every day, I aspire to be like you in hopes that one day; my daughters will look at me like I look at you. As Booker T. Washington said, "if I have done anything in life worth attention, I feel sure that I inherited the disposition from my mother."

## ACKNOWLEDGEMENTS

I would like to thank my husband, children, family, and friends who have supported me through this process. In addition, I would like to thank my committee chair, Dr. Slattery, my co-chair, Dr. Laub, and my committee members, Dr. Hill-Jackson, and Dr. Glenda Byrns for their guidance and support throughout the course of this research.

Thanks also go to my friends, colleagues, and the department faculty and staff for making my time at Texas A&M University a great experience. I would like to thank a few of my cohort members: Jeffrey Miller, Helen Becker, Delia Cruz, Allison Burney, Angie Knight, Nneka Bernard, and Nicole Marines. You all have been wonderful to collaborate with, as well as discuss all of our various educational interests. I have learned so much through working with each and every one of you, and I am so happy to have you all as part of my personal learning network.

Lastly, I would like to thank my fellow public school educators and administrators for their guidance, support, and encouragement. They all inspire my personal and professional growth daily.

## CONTRIBUTORS AND FUNDING SOURCES

### **Contributors**

This work was supervised by a record of study committee consisting of Dr. Patrick Slattery [Chair], Dr. James Laub [Co-Chair], Dr. Valerie Hill-Jackson of the Department of Teaching, Learning, and Culture and Dr. Glenda Byrns of the Department of Educational Psychology.

The data analyzed for Chapter III was provided by the research, assessment, and accountability department of the local school district.

All other work conducted for the record of study was completed by the student independently.

### **Funding Sources**

There are no outside funding contributions to acknowledge related to the research and compilation of this document.

## NOMENCLATURE

AP	Advanced Placement
CCRS	College Career Readiness Standards
DC	Dual Credit
EBRW	Evidence Based Reading and Writing
ELAR	English Language Arts and Reading
ELL	English Language Learner
EOC	End of Course
GT	Gifted and Talented
IQ	Intelligence Quotient
NMSI	National Math Science Institute
NMSQT	National Merit Semifinalist Qualifying Test
PSAT	Preliminary Scholastic Aptitude Test
SAT	Scholastic Aptitude Test
SBOE	State Board of Education
SPED	Special Education
STAAR	State of Texas Assessment of Academic Readiness
TEA	Texas Education Agency
THECB	Texas Higher Education Coordinating Board

## TABLE OF CONTENTS

	Page
ABSTRACT.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENTS.....	iv
CONTRIBUTORS AND FUNDING SOURCES.....	v
NOMENCLATURE.....	vi
TABLE OF CONTENTS.....	vii
LIST OF TABLES.....	ix
LIST OF FIGURES.....	x
CHAPTER I INTRODUCTION.....	1
The Problem Space.....	2
A National Perspective.....	2
A State Perspective.....	3
The Problem of Practice.....	5
Context.....	5
Stakeholder Groups and Values.....	11
Problem Statement.....	13
Audience.....	13
Ideal Scenario.....	13
The Real.....	14
Research Questions.....	17
Hypotheses.....	18
My Role.....	20
Purpose of Study.....	21
Significance of the Study.....	21
Definition of Terms.....	22
CHAPTER II LITERATURE REVIEW.....	26
Conceptual Framework.....	26

Working Memory Theory .....	27
Bourdieu's Cultural Capital Theory .....	28
Anyon's Reform Theory .....	32
Kozol's SES Theory .....	33
History of Standardized Tests for College Admission .....	35
Relationship Between College Admissions and Achievements .....	37
College and Career Readiness .....	39
Discrepancy Between K-12 Systems and Colleges .....	41
Advanced Placement, Dual Credit, and Magnet Programs .....	44
Advanced Placement .....	44
Dual Credit .....	45
Magnet Programs .....	46
Conclusion .....	47
 CHAPTER III METHODOLOGY .....	 51
Participants .....	51
Setting .....	52
Methods .....	55
Statement Regarding Human Subjects and the Institutional Review Board (IRB) .....	55
Data Analysis .....	58
Limitations .....	62
Qualifications of Researcher .....	62
 CHAPTER IV RESULTS .....	 64
Sample .....	65
Inferential Statistics Tests .....	68
Research Question 1 .....	70
Research Question 2 .....	72
Research Question 3 .....	73
Research Question 4 .....	74
Summary .....	76
 CHAPTER V SUMMARY AND CONCLUSIONS .....	 77
Summary .....	77
Conclusions .....	80
Implications .....	82
Recommendations for Further Study .....	84
 LITERATURE CITED .....	 86
 APPENDIX A .....	 100

## LIST OF TABLES

TABLE	Page
1.1 Diversity of Populations by District, Campus, and Cities .....	7
3.1 Demographics of Study Participants.....	52
3.2 Demographics of Teachers .....	54
3.3 Timeline of Data Collection and Methods.....	61
4.1 Demographics of Sample.....	66
4.2 Descriptive Statistics.....	69
4.3 Results of One-Sample <i>t</i> -test .....	75

## LIST OF FIGURES

FIGURE	Page
1.1 Conceptual Framework.....	27

## CHAPTER I

### INTRODUCTION

According to the National Math and Science Initiative (2017), “the nation’s greatest economic and intellectual threats [are] the declining number of students who are prepared to take rigorous college courses...and are equipped for careers in those fields”. “Major demographic shifts in the population of the United States, combined with persistent gaps in educational achievement by ethnic group, could decrease the portion of the workforce with college-level skills over the next 15 years, with a consequent decline in per capita personal income in the United States (Callan, Finney, Kirst, Usdan, & Venezia, 2006, p. 1; Alert, 2005). The percentage of the young working population enrolling in college and obtaining a bachelor’s degree has dropped below many other developed countries (Davis, 1985). “At a time when the knowledge-based, global economy requires more Americans with education and training beyond high school, the nation confronts the prospect of a sustained drop in the average educational levels of the U.S. workforce” (Callan et al, 2006, p. 1; Kelly, 2005). The United States must address this concern in order to meet the needs of students in a 21<sup>st</sup> century global marketplace. A country must ensure that all students, no matter what their financial circumstances, race, or gender, have access to rigorous courses that prepare them for college and future careers.

The need to reform high schools to improve college readiness and increase rigor has affected public and private schools, charter schools, educational and policy

organizations everywhere. Schools are now offering dual credit courses and advanced placement courses in order to increase rigor, as well as give students the opportunity to earn college credit while still in high school. However, the teachers' abilities to prepare students to successfully complete dual credit and advanced placement courses have not positively impacted students' results on college entrance exams. This quantitative study explored the relationship between performance on EBRW scores on the SAT and participation in dual credit, advanced placement, or on-level junior English coursework. In addition, the relationship between participation in a collegiate academy magnet program and SAT performance was also of interest as pertaining to enrollment in advanced placement or dual credit courses.

## **The Problem Space**

### **A National Perspective**

American colleges and universities were once known as some of the best institutions in the world, but are falling behind their international peers (Snider & Willen, 2011). When compared to other developed nations, the United States is declining academically (U.S. Department of Education, 2010). According to NMSI (2017), "American students are falling behind in the essential subjects of math and science, putting our position in the global economy at risk". The importance of a college degree is increasing, but there has been "an alarming number of students requiring some type of remedial coursework when they enter postsecondary education institutions" (Wiley, Wyatt, & Camara, 2010) and "about half of them learn that they are not prepared for college-level courses" (Callan et al, 2006) due to the fact that students are simply, not

college ready. College readiness can be defined as “the level of preparation a student needs in order to enroll and succeed—without remediation—in a credit-bearing general education course at a post-secondary institution that offers a baccalaureate degree or transfer to a baccalaureate program” (Conley, 2007a, p. 8). According to Adams (2015), “recent reports on performance for the class of 2015 suggest that most [students] are ill-prepared for the academic rigor of college” (p. 1). Additionally, Greene and Forster (2003) found that “only 32% of all students leave high school qualified to attend four-year colleges” (p. 1). Callan, Finney, Kirst, Usdan, and Venezia (2006) found that “40% of students at four-year institutions and 63% at two-year colleges take remedial education” (p. 2). In the U.S., standardized test scores are used to measure performance and are producing concern because several other countries are continually performing better on standardized math, science, and reading tests administered to 15 year olds (OECD, 2010; Schleicher & Davidson, 2013). National education and standards reform acts such as No Child Left Behind, Race to the Top, and Common Core standards address increasing rigor and promoting college readiness, but are not producing the results.

### **A State Perspective**

In Texas, schools districts and individual schools examine standardized test scores for accountability purposes. These standardized tests examine student proficiency on curriculum standards that were identified by the Texas State Board of Education (SBOE) in 1998 known as the Texas Essential Knowledge and Skills (TEKS). These standards indicate what students should know and be able to do at every grade level. In

addition to the curriculum standards, the Texas legislature required the development of College and Career Readiness Standards (CCRS) in 2006 (Morath, n.d.). Texas was the first state to incorporate these standards, which were informed by data from research studies that included comparisons with national and international assessments. They were developed by a diverse group of stakeholders from higher and public education. Vertical teams of 10 members, 60% represented public education and 40% represented higher education were tasked to evaluate whether the TEKS prepare students for college-level course work and then recommend any adjustments to the TEKS to appropriately incorporate the CCRS. (Morath, n.d., p. 5).

The Texas Higher Education Coordinating Board (THECB) adopted the CCRS in January 2008 and the Commissioner of Education approved the standards, and the SBOE incorporated them into the TEKS curriculum content standards. The SBOE now requires all TEKS review committees to review the CCRS and make recommendations for appropriate incorporation of the CCRS in the TEKS as part of each TEKS review and revision process (Morath, n.d. p. 6).

The state developed a State of Texas Assessment of Academic Readiness (STAAR) End of Course (EOC) assessment that involved educators, higher education faculty, and the THECB. This assessment incorporated the post-secondary readiness standards that were informed by research studies and compared to national and international college readiness assessments and success in military service or the workforce (Morath, n.d, p. 13). The STAAR Post-Secondary Readiness Standards consist of two operational definitions: (1) Level II satisfactory academic performance;

and (2) Level III advanced academic performance. A level II satisfactory academic performance operational definition meant that a student was “reasonably likely (with at least a 60% probability) to succeed (with a grade of C or higher) in an entry-level, credit-bearing course in that content area for a baccalaureate degree or associate degree program at a general academic teaching institution or a postsecondary institution that primarily offers associate degrees, certificates, or other credentials” (Morath, n.d., p. 14). A level III advanced academic performance operational definition meant that a student is “highly likely (with at least a 75% probability) to succeed (with a grade of a C or higher) in an entry-level, credit-bearing course in that content area for a baccalaureate degree or associate degree program at a general academic teaching institution or a postsecondary institution that primarily offers associate degrees, certificates, or other credentials” (Morath, n.d., p. 14). Studies to inform the post-secondary readiness standard included: following students from high school to college and comparing EOC performance and other test performance to SAT, ACT, Accuplacer, and THEA. A student is considered to be “college ready” by meeting level II or III. The State of Texas determines whether a school meets post-secondary readiness requirements based on meeting five criteria: (1) graduation rates; (2) SAT/ACT performance; (3) AP Performance; (4) TSI Requirements; and (5) college enrollment.

## **The Problem of Practice**

### **Context**

The research site is a college and career magnet high school located in a large suburban city northeast of Dallas. This school is one of eight high schools in a district

that “ranks as the second largest district in Dallas County, fourth largest in Dallas-Fort Worth, 13<sup>th</sup> largest in Texas, and is among the 70 largest in America” (District homepage, 2016). The district serves three cities, 71 campuses, and has a diverse population that speaks more than 100 languages. The district also offers technology-driven campuses, magnet programs, and approximately 200 career and technical education courses.

***Choice of school program.*** Instead of attendance zones determining the school in which a student attends, the district offers a unique ‘choice of school’ program that allows parents to select the school they would like for their child to attend. The ‘choice of school’ program occurs twice during the spring semester, each for a 30 day time period. Parents must complete a ‘choice of school’ form indicating their top three school preferences. The number of seats available at each campus is determined by: building capacity, teacher to student ratios, court-ordered ethnicity ratio requirements, and existing students’ right to remain at that campus. These seats are then filled by students who: (a) live in a dedicated transportation route to their campus of choice, (b) have a sibling who attends that campus, and (c) live the closest of all students requesting that grade level and program at that location (District Choice of School, 2016).

If parents do not complete the ‘choice of school’ form, the student is automatically enrolled in the school based on attendance zone. However, students who are invited to and accept a seat in a special program, such as the college and career magnet, are not required to participate in the ‘choice of school’ process. Due to parents

being able to decide which school their child attends, the ethnic make-up of a school can be impacted.

***Demographics.*** As a result of the district serving three cities and offering a unique ‘choice of school’ program, the research site serves all of these communities. According to City-Data.com (2015), the ethnic diversity of the three cities varies, which impacts the student population of each high school. Table 1.1 shows the diversity of the population and race/ethnicities represented in the district compared to the campus and its surrounding cities. Column 1 lists the district, campus, and surrounding cities. Column 2 presents the overall population. Column 3, 4, 5, and 6 indicate the percentage of the population that is White, African American, Hispanic, or other.

Table 1.1

*Diversity of Populations by District, Campus, and Cities*

District, Campus, & Cities	Population	White	African American	Hispanic	Other
District	57,418	20.3%	17.6%	49.8%	12.3%
Campus	2,317	20.3%	29.0%	40.0%	10.7%
City 1	235,501	33.3%	15.2%	38.4%	13.1%
City 2	23,681	63.7%	8.7%	13.9%	13.7%

Table 1.1 Continued

District, Campus, & Cities	Population	White	African American	Hispanic	Other
City 3	58,407	53.6%	13.8%	21.4%	11.2%

The two newest high schools in the district are located in Cities 2 and 3. However, the campus is located in City 1, where the school population more closely reflects the population of the entire school district.

According to the US Census Bureau (2015), the research site is located in City 1 and the growth and development of the city has slowed, only growing 5.1% between 2000 and 2010, and land is becoming scarce. The median household income is \$51,997 and the median housing value is \$115,800. The number of persons living in poverty is 16.8% and the unemployment rate is 4.2%. The number of companies is approximately 21,545, offering a diverse and stable economy for businesses and residents to locate and succeed. The majority of the companies offer opportunities for skilled workers, including a strong manufacturing base. The educational attainment of the community that is a high school graduate or higher is 76.5%. In order to improve the opportunities for educational attainment, the city school district has created a college partnership with a local community college district, in addition to technical and trade schools. To support

this partnership, the research site offers a variety of career and technical education courses, of which 75.4% of students are enrolled.

**Dual credit.** The Texas Education Agency (2009) defines dual credit (DC) courses as “a process through which a student may earn high school credit for successfully completing a college course that provides advanced academic instruction beyond, or in greater depth than, the Texas Essential Knowledge and Skills (TEKS) for a corresponding high school course, thereby enabling a student to earn both high school and college credit for a single course”. According to Smith (2007), “dual-credit enrollment programs provide a continuum of education and training that complement the standard high school curriculum with dual-credit college coursework, thus providing dual high school and college credits” (p. 371).

There are varying degrees of dual enrollment programs. Some are very small while others are very large. However, regardless of size, there must be cooperation between the K-12 system and the local community college district. Burns and Lewis (2000) stated that, “despite the fact that dual enrollment programs vary greatly in size, purpose, goals, missions, and population served, all have one thing in common. Dual enrollment programs exist to meet the specific needs of the high school students they serve” (p. 3; Delaino, 1990; Galloway, 1994).

**Advanced placement.** The College Board offers an advanced placement (AP) program in which more than 30 courses and exams are available for students. There are no prerequisite courses and students do not have to qualify to enroll in an AP course. According to the College Board (2017), the junior level English course is “AP English

Language and Composition [and] aligns to an introductory college-level rhetoric and writing curriculum, which requires students to develop evidence-based analytic and argumentative essays that proceed through several stages or drafts” (p. 1). The AP course allows students the opportunity to receive college credit and/or placement into advanced courses in college by earning a qualifying score on an AP exam.

In order to teach an AP course there are no formal requirements; teachers do not have to have a master’s degree in the subject they are teaching or 18 graduate credits in that subject. However, “the College Board encourages schools to provide funding opportunities for their AP teacher(s) to attend workshops, Summer Institutes, or other professional development activities” (College Board, 2016a).

*College and career magnet program.* As the district started to increase the number of magnet programs, the research site became the college and career magnet for the district in 2001. The implementation of this program resulted in increased enrollment at the campus, as well as increased the diversity of the student population. Parents were attracted to what the magnet program had to offer including: a collegiate academy, a law and criminal justice program, a television production program, a classical center program, and a school of business. This is evident by the fact that 40.16 % of the students are involved in one or more of these programs (TEA, 2015c).

While all high schools provide the opportunity for students to take dual credit courses, the research site is currently the only high school to boast the collegiate academy. The collegiate academy was established in 2008 and works in conjunction with the local community college district. The magnet program is designed to allow high

school students to satisfy high school graduation requirements while the student earns an Associate of Science degree. The collegiate academy students can earn a total of 60-64 hours of college credit from approved instructors while on the high school campus at no cost. Of the approximately 590 students enrolled in dual credit classes, 346 are working toward an Associate of Science degree. According to Timi Creekmore, the research site's magnet coordinator, "35 high school students earned an Associate's degree in 2014, 83 in 2015, and 55 are on track to graduate this year" (personal communication, June 13, 2016).

In order for students to qualify for the collegiate academy program they must be an eighth or ninth grade student and satisfy admissions criteria. The five criteria include: (1) completing an online application, (2) satisfying all state accountability tests performance standards, (3) scoring in the 70+ percentile or higher in both math and reading on the most recent standardized achievement tests, (4) pass all classes, and (5) have no serious discipline issues. Students who meet these criteria are not only admitted to the collegiate academy, but may also be admitted into the career and classical magnet programs as well (Campus Collegiate Academy, 2016).

### **Stakeholder Groups and Values**

There are several conflicting values throughout the research site and college readiness preparation varies, based on the courses taught. Individual teachers value their pedagogical autonomy within the classroom and feel minimal obligation to department chairs, assistant principals, and the principal when it comes to changing their teaching practices, especially when they are Dual Credit or Advanced Placement teachers.

The teachers that teach advanced courses are not required to follow district curriculum and certain documentation procedures that 'regular' teachers are required to adhere to. AP teachers are provided with College Board curriculum, as well as National Math and Science Institute (NMSI) materials that they can use to support college readiness in their classes. In addition, the AP teachers attend weeklong summer institutes for professional development. DC teachers utilize a syllabus approved through the local community college district, but are not provided with a curriculum or professional development for their course. The difference in curricular resources creates a divide in the climate and culture. The "regular" teachers feel like they have lost some of their autonomy because the expectation is that they follow district curriculum and give district common assessments. The district provided curriculum is aligned to state standards and focuses on state accountability assessments, not necessarily on college readiness standards.

The principal values teacher autonomy but sees it as conflicting with the professional obligations that teachers have to district authorities for improving not only the students' performance but also the department and campus performance, especially for the state accountability tested subject areas. This divide creates limited college readiness. Only the advanced teachers seem to be incorporating college readiness preparation and expectations, while "regular" teachers focus on passing state accountability tests.

## **Problem Statement**

### **Audience**

This proposal is directed to the local school district in which the college and career magnet resides, school board, administrators, educators, and parents. The district is located in North Texas and is a suburb of the city of Dallas, nestled in the northeast corner of Dallas County, and serves the three suburban cities. The district is the second largest school district in Dallas County, serves about 58,000 students in its 72 campuses, and offers a variety of magnet programs including a collegiate academy located at the college and career magnet campus. The principal of college and career magnet will serve as the primary liaison between the district executive council, the school board, educators, and parents. With the results from this study, the executive council and school board will make a decision about addressing the conclusions derived from the inferential statistical analysis results.

### **Ideal Scenario**

Ideally, a college and career magnet would provide highly qualified dual credit instructors that have experience teaching college courses and have been trained to ensure consistency between the college course offered at the college campus and the dual credit course offered at the high school campus. Dual credit instructors would be held accountable for the student learning objectives established by the college campus and would be evaluated by a college campus administrator. Smith (2007) found that “location of dual-credit enrollment does make a difference...[and that] students participating in dual-credit enrollment on the college campus had higher educational

aspirations than participants of dual-credit enrollment at the high school” (p. 383).

However, in order to promote a college climate and culture since the dual credit courses are held at the high school campus, the courses should be held in a separate wing of the campus to provide separation from the normal high school environment. These classrooms should be set up similar to those at the college level to increase the authenticity of the environment. In addition, the instructor would ideally be either a full or part time college employee; not a full time high school teacher with college-approved credentials. These instructors would teach both courses at the college campus, as well as dual credit courses on the high school campus. This equivalent expectation would establish consistency between the two courses, regardless of the location. Three standards would be present in the dual credit program: (1) adequate training for these instructors, (2) the administration of the program would be supportive of the class syllabus, and (3) students would be held to expectations equivalent to those of college students.

### **The Real**

Students at the research site perform at lower levels on college entrance exams. These students have limited exposure to the knowledge and skills needed to be successful on college entrance exams. According to the Texas Education Agency Division of Performance Reporting (2017), 70.8% of students took the SAT/ACT exam but only 14.0% of these students scored at or above criterion. This is 10.3% lower than the number of students meeting criterion at the state level (24.3%). In addition, the average SAT score (1339) is 55 points lower than that of the state (1394). The number of

students meeting criterion on SAT/ACT exams should resemble the number of students completing Advanced Placement and Dual Credit courses (67.6%). However, the number of students meeting criterion is 53.6% lower than the number of students completing advanced courses.

In addition to the statistical gaps, there are a multitude of reasons as to why these students are not successful including: (1) dual credit classes on high school campuses are not “authentic” college classes; (2) autonomy and authority of the instructor are different depending on the predominant organization and course level; and (3) lack of rigor across all subject areas.

Dual credit classes on high school campuses differ from “authentic” college classes. The high school environment provides a climate where high school students still behave like ‘typical’ high school students, regardless of the rigor of the class. In contrast, students on a college campus are not roaming the halls during class time and there are few behavioral interruptions to the class. Additionally, at a college campus, attendance is often not compulsory, and the instructor has the authority to ask students to leave the classroom if they are not behaving appropriately so as not to disrupt the learning of others. At the high school, attendance is mandatory and there are more frequent behavior issues that disrupt the learning environment. The they-can’t-do-anything-to-me attitude that is present for many high school students fades away on the college campus, simply because of the change in environment, goals of the majority of students, and authority of faculty.

Furthermore, the autonomy and authority of the instructor varies. At the college level, instructors are guided by their class syllabus – what the syllabus says is what happens, and there is no pressure for extending due dates, allowing make ups, extra tutoring sessions, or questions about why certain students are or are not successful. At the high school level, instruction is often dictated by administration. While the course material is decided by the state and the district, administration often steps in to confront issues of student failure, teacher/student interaction, and prolonged student absences to name a few. If the instructor is a full time teacher at the high school with approved credentials, it can be difficult for them to maintain the rigor of a college class when questioned by administration for fear of losing their job due to their obligation to the organization. If the instructor is an adjunct for a college and not a high school teacher, they may not be clear as to which organization they are serving – the high school or the college.

Lastly, many of the courses offered at the high school campus focus on passing state accountability assessments and do not teach to the advanced rigor expected for student to be college ready. Once students move into high school grades that have no associated state accountability test, the focus then shifts to passing advanced placement courses. There is really no focus on college entrance exams, even though the SAT/ACT are one of the major components of a student gaining admission into a college or university. The college and career magnet must focus on increasing the rigor throughout all courses offered on the campus. All students deserve to be prepared to take college entrance exams; not just those taking advanced courses. However, currently many of the

on-level teachers are unaware of some of the SAT exam preparation that is offered to students.

### **Research Questions**

This quantitative record of study explored the relationship between performance on EBRW scores on the SAT and participation in dual credit, advanced placement, or on-level junior English coursework. In addition, the relationship between participation in a collegiate academy magnet program and SAT performance was also of interest as pertaining to enrollment in advanced placement or dual credit courses. A quantitative approach was selected for this study as it involved collecting quantitative data in the form of student PSAT EBRW and SAT EBRW scores obtained from the local school district. The participants in this study consisted of 474 students who were enrolled in a junior level English course at the research site and were administered the PSAT on October 15, 2015, and the SAT on March 2, 2016. The SAT EBRW scores were collected to determine whether the independent variable related to the dependent variable. PSAT EBRW scores were used as a control for student ELAR performance at the beginning of their junior year. The research questions included the following:

1. Taking into account prior English language arts and reading (ELAR) test performance, are there differences in SAT Evidence-based Reading and Writing (EBRW) scores between students, based on type of junior level English course in which they are enrolled?
2. Taking into account prior English language arts and reading (ELAR) test performance, are there differences in SAT Evidence-based Reading and

Writing (EBRW) scores between students, based on enrollment in the magnet program?

3. Taking into account prior English language arts and reading (ELAR) test performance, are there differences in SAT Evidence-based Reading and Writing (EBRW) scores between students, based on race/ethnicity?
4. Is there a statistically significant difference in mean SAT Evidence-based Reading and Writing (EBRW) scores between students enrolled in dual credit and advanced placement junior level English coursework, as well as the magnet program, compared to that of the median Nationally Representative Sample Percentile (NRSP) and SAT User Percentile- National (SUP-N)?

Exploring each research question was important because it allowed the researcher to determine if there were any correlations between 11<sup>th</sup> grade students enrolled in dual credit, advanced placement, or the college and career magnet and SAT EBRW scores. In addition, it allowed the researcher to examine performance on the SAT EBRW compared to national samples.

### **Hypotheses**

The hypotheses included null and alternative hypotheses that determined how being enrolled in an advanced placement or dual credit course affected students' SAT EBRW score. The null hypotheses indicates that there is equality between sets of variables and the alternative hypotheses rejects the null is  $p < 0.5$  from the statistical test as a possible explanation for the results. The null ( $H_0$ ) and alternative hypotheses ( $H_1$ ) were:

H1<sub>0</sub>: After controlling for prior ELAR performance, there are no differences in mean SAT EBRW scores by type of junior level English course.

H1<sub>1</sub>: After controlling for prior ELAR performance, there are differences in mean SAT EBRW scores by type of junior level English course.

H2<sub>0</sub>: After controlling for prior ELAR performance, there are no differences in mean SAT EBRW scores by enrollment in the college and career magnet program.

H2<sub>1</sub>: After controlling for prior ELAR performance, there are differences in mean EBRW scores by enrollment in the college and career magnet program.

H3<sub>0</sub>: After controlling for prior ELAR performance, there are no differences in mean SAT EBRW scores by race/ethnicity subgroups.

H3<sub>1</sub>: After controlling for prior ELAR performance, there are differences in mean SAT EBRW scores by race/ethnicity subgroups.

H4<sub>0</sub>: There are no differences in mean SAT EBRW scores by enrollment in dual credit or advanced placement junior level English coursework, as well as magnet program enrollment, compared to that of the median Nationally Representative Sample Percentile (NRSP) and SAT User Percentile-National (SUP-N)

H4<sub>1</sub>: There are differences in mean SAT EBRW scores by enrollment in dual credit or advanced placement junior level English coursework, as well as magnet program enrollment, compared to that of the median Nationally

## Representative Sample Percentile (NRSP) and SAT User Percentile-National (SUP-N)

Addressing each aforementioned research question and hypotheses was important because it allowed the researcher to determine whether there was a relationship between student enrollment in an advanced placement or dual credit course, and performance on the SAT EBRW.

### **My Role**

Throughout my fourteen years as an educator, many educational and work related experiences foster my passion for solving problems within the educational environment. My curriculum knowledge spans a wide variety of categories, in addition to my ability to teach a broad spectrum and diverse population of students. I am able to differentiate lessons in order to meet the needs of all students. Furthermore, I have studied and developed a clear understanding of vertical/horizontal alignment needed to effectively implement curriculum and instruction at all levels. Through countless leadership positions and classroom experiences, I have gained effective communication, collaboration, public relations and interpersonal skills. I have created and implemented professional development at the campus and district level. I am a key stakeholder invested in improving college readiness for student at the college and career magnet. I previously worked as a dual credit professor at the college and career magnet, teaching the Collegiate Academy students. In addition, I taught PreAP English II to students enrolled at the campus. Currently, I am an English Language Arts and Reading (ELAR) Instructional Design Facilitator within the district in which the research site resides. I

directly work with the ELAR teachers at the college and career magnet to support their instructional practices. As an instructional leader, it is my goal to develop educators who use innovative and researched based strategies to develop/deliver rigorous lessons that challenge their students to think outside the box while ensuring that all, regardless of learning style, are given equitable opportunity to learn. As a result of my experience teaching at the college and career magnet, I was able to identify the problem and gain better understanding of why it exists.

### **Purpose of the Study**

The purpose of this quantitative record of study was to explore the relationship between student enrollment in advanced placement or dual credit junior level English courses, as well as enrollment in the college and career magnet program, and performance on the SAT EBRW. A quantitative approach was selected for this study as it involved collecting quantitative data in the form of student SAT EBRW scores and then explaining the quantitative results with an in-depth ANCOVA data analysis and one-sample *t*-test. The SAT EBRW scores were collected to determine whether the independent variable relates to the dependent variable. PSAT EBRW scores were used as a control for student ELAR performance at the beginning of their junior year.

### **Significance of the Study**

With the introduction of magnet programs, such as a college and career magnet that includes a collegiate academy, there is potential that students enrolled in these programs would meet and/or exceed SAT criterion when enrolled in an advanced placement or dual credit course. This quantitative record of study will help inform the

district, campus, teachers, students, and parents about which magnet programs and advanced courses have a greater effect on increasing student SAT scores. This could potentially increase enrollment in magnet programs and advanced courses, increasing the likelihood that students could earn college credit and/or admittance. Likewise, the methods of this study could be expanded across the campus to include other subject areas, as well as across the district to determine the relationship between other magnet programs and advanced courses on SAT scores.

### **Definition of Terms**

For the purpose of this study, the following definitions and acronyms will be used:

1. Advanced Placement (AP): AP is a program in the United States and Canada created by the College Board which offers college-level curricula and examinations to high school students. American colleges and universities may grant placement and course credit to students who obtain high scores on the examinations.
2. College Career Readiness Standards (CCRS): According to the Texas higher Education Coordinating Board (2008b), the CCRS are designed to represent a full range of knowledge and skills that students need to succeed in entry-level college courses, as well as in a wide range of majors and careers.
3. College Readiness: can be defined as “the level of preparation a student needs in order to enroll and succeed—without remediation—in a credit-bearing general education course at a post-secondary institution that offers a baccalaureate degree or transfer to a baccalaureate program” (Conley, 2007a, p. 8).

4. Dual Credit (DC): The Texas Higher Education Coordinating Board (2008a) defines dual credit as a process by which a high school junior or senior enrolls in a college course and receives simultaneous academic credit for the course from both the college and the high school.
5. Evidence Based Read and Writing (EBRW): When students take the SAT exam, they will take a 65 minute reading section and a 35 minute writing and language section. Both of these sections count equally toward their EBRW score. Students get one point for every right answer to create their raw scores which are converted into scale scores between 10 and 40. After the raw scores are converted into scale scores, they are added together and multiplied by 10 to get a combine EBRW score between 200 and 800.
6. English Language Learner (ELL): Hidden curriculum (2014) defines English language learners as “students who are unable to communicate fluently or learn effectively in English, who often come from non-English-speaking homes and backgrounds, and who typically require specialized or modified instruction in both the English language and in their academic courses”.
7. Gifted and Talented (GT): According to the Texas Education Code §29.121, “A gifted/talented student is a child or youth who performs at or shows the potential for performing at a remarkably high level of accomplishment when compared to others of the same age, experience, or environment and who: (1) exhibits high performance capability in an intellectual, creative, or artistic area; (2) possesses an unusual capacity for leadership; or (3) excels in a specific academic field.

8. Intelligence Quotient (IQ): Merriam-Webster (2017) defines intelligence quotient as a score determined by one's performance on a standardized intelligence test relative to the average performance of others of the same age.
9. National Math + Science Initiative (NMSI): The NMSI was created to address the “nation's greatest economic and intellectual threats- the declining number of students who are prepared to take rigorous college courses... and are equipped for careers in those field” (National Math + Science Initiative, 2017). Their mission is to improve student performance... transform teaching, transform schools, and transform education in the United States.”
10. National Merit Semifinalist Qualifying Test (NMSQT): According to the National Merit Scholarship Program (2017), the PSAT/NMSQT test serves as “an initial screen of approximately 1.6 million entrants each year” to earn recognition and scholarships.
11. Preliminary Scholastic Aptitude Test (PSAT): An exam given to high school sophomores and juniors to prepare them for the SAT. Another version is given to 8<sup>th</sup> and 9<sup>th</sup> graders.
12. Scholastic Aptitude Test (SAT): According to Dictionary.com, the SAT is “a set of standardized college admissions tests developed by the College Board, the principal one measuring mathematical and verbal reasoning, and other measuring knowledge in specific subject areas.

13. Special Education (SPED): Special Education is a broad term used by federal law to describe the “specially designed instruction” necessary to meet the unique needs of a child with a disability.

## CHAPTER II

### LITERATURE REVIEW

This chapter will introduce the conceptual framework including the theories that guided this record of study. The next section presents a history of standardized testing for college admissions, followed by information on college and career readiness. Lastly, advanced placement, dual credit, and magnet programs will be discussed, as well as concluding statements about what the literature suggests for this record of study.

#### **Conceptual Framework**

Grounding the conceptual framework for this study were two theories including: (1) working memory theory, and (2) Bourdieu's cultural capital theory. The working memory theory supports the understanding of performance on educationally relevant tasks. Working memory theory is applicable because it has been found that there is a correlation between working memory theory and general intelligence (Dehn, 2015; Conway, Kane, & Engle, 2003); which corresponds to the relationship between general intelligence and the SAT. Supporting the working memory theory is cultural capital theory, emphasizing the educational need in order to produce economic wealth and social class. Cultural capital theory is applicable because the research site has a dominant population of low socioeconomic students, as well as students of color. The research site tried to address the theory of inequality derived from economic and racial disparities by providing equitable opportunities for students to be enrolled in advanced placement and dual credit courses, as well as the college and career magnet program.

The next sections will provide additional information about the important facts of working memory theory and cultural capital theory related to this study.

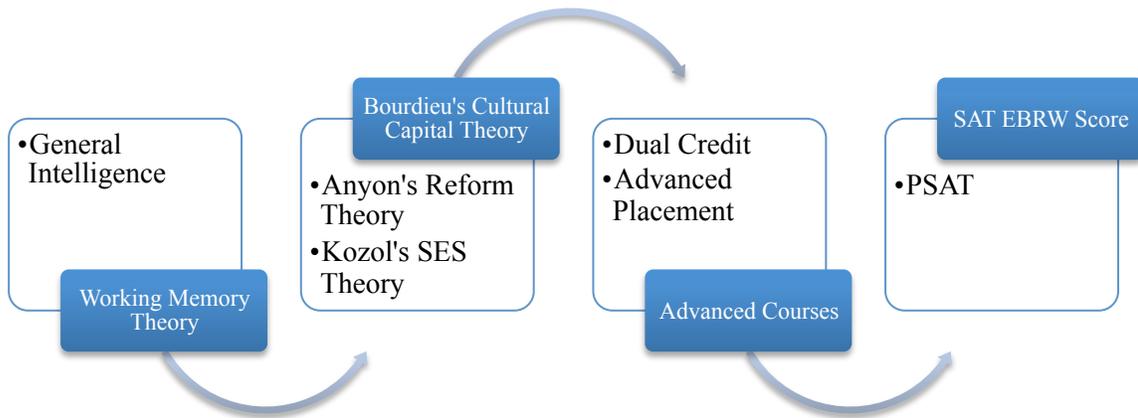


Figure 1.1 Conceptual Framework

### **Working Memory Theory**

Working memory theory was initially proposed by Daneman and Carpenter and was eventually updated by Baddeley. Over the years, many researchers have questioned the validity of the SAT test and its questions. In order to address this concern, many educational researchers have used working memory theory to understand performance on educationally relevant tasks (Daneman & Hannon, 2001). Working memory is a dynamic way to process and store information and can predict how a person performs on

diverse cognitive activities. According to Daneman and Hannon (2001), “working memory plays a role in the performance of a range of educationally relevant complex cognitive tasks and that individuals with large working memory capacities do better on these tasks than do individuals with smaller working memory capacities”(p. 209). In addition, “the correlational evidence suggests that the capacity to simultaneously process and store symbolic information in working memory is an important component of success at comprehension” (p. 209). Due to its success at measuring the combined processing and storage capacity, working memory theory has also been included in the Wechsler Adult Intelligence Test (Wechsler, 1997). According to Yuan, Steedle, Shavelson, Alonzo, & Opezzo (2006), “it is widely accepted that working memory is a strong predictor of fluid intelligence (Engle, Kane, & Tuholski, 1999; Kane, Hambrick, & Conway, 2005), but is not identical to it. Conway, Cowan, Bunting, Therriault, & Minkoff (2002) contended that working memory be the most important among many factors that influence fluid intelligence” (p. 92). In correlation, Frey and Detterman (2004) found that the SAT is an adequate measure of general intelligence and is a useful tool in predicting cognitive functioning. In order to predict performance on tests such as the SAT, working memory theory should be applied.

### **Bourdieu’s Cultural Capital Theory**

Another important facet to this study is cultural capital theory. In addition to working memory theory, Bourdieu’s cultural capital theory is analogous to economic capital viewed as an investment in the form of educational credentials (Silva, 2001). Cultural capital refers to “non-financial social assets that could be educational or

intellectual, which might promote upward social mobility beyond economic means” (Harvey, Slate, Moore, Barnes, & Martinez-Garcia, 2013, p. 182; Barker, 2004).

Government and business organizations within the United States envision an economic return if the education system increases the number of postsecondary graduates equipped with the knowledge and skills necessary to succeed in an internationally competitive labor market (National Center on Education and the Economy, 2008; National Academy of Sciences, National Academy of Engineers, and Institute of Medicine of the National Academies, 2010).

As a result, cultural capital “could be directly enhanced by academic success...eventually generat[ing] economic and social capital” (Harvey et al, 2013, p. 182). According to Webb, Schirator, and Danaher (2002) theorists and researchers alike can apply the concept of cultural capital to the educational system in a multitude of ways.

Stanton-Salazar and Dornbusch (1995) explored how cultural capital applied to school transformation could influence students’ relationships with schools and school districts, thereby furthering students’ educational success.

A second view advanced by Emmison and Frow (1998) took cultural capital even further by adding information technology as a form of cultural capital. As educational institutions are pushing to create 21st century students ready to compete in a global economy, information technology is a key attribute and the authors argued, could be viewed as a form of cultural capital.

Bourdieu (1986) advanced the concept of cultural capital by discussing the relationship between cultural capital and economic capital, ultimately stating that investing money in education would provide a return on investment. Higher graduation rates and college readiness rates, Bourdieu argued, would create higher social and academic success which would eventually lead to a degree of higher education and upward social mobility (Harvey et al, 2013; Dumais, 2002; Lareau & Horvat, 1999; Raines, 2006). To develop cultural capital among high school students, innovative curriculum in public school is essential to facilitate postsecondary education (Harvey et al, 2013; Bourdieu & Passeron, 1979; DiMaggio, 1982; Dumais, 2002; Silva 2001). According to Harvey et al (2013), “graduating from high school and completing a postsecondary education to attain a degree or certification are seen as a means of increasing cultural capital therein generating cultural reproduction in a global society” (p. 184; Bourdieu, 1998; Bourdieu & Passeron, 1979; Raines, 2006; Silva, 2001).

The facet of cultural capital extends into recent research. Furthermore, “cultural capital theory holds that, in the sociology of education, cultural knowledge profoundly affects success in school, since the education system is not neutral, but rather designed to favour the cultural norms of the upper class” (Bojczyk, Rogers-Haverback, Pae, Davis, & Mason, 2015, p. 1391; Lamont & Lareau, 1988). Children from low socioeconomic families may encounter structural inequalities such as less rigorous content and lower qualified teachers, resulting in an academic decline that is often mistaken as lack of inherent ability or effort. However, should be attributed to the lack of cultural capital

(Bojczyk, Rogers-Haverback, Pae, Davis, & Mason, 2015; Lamont & Lareau, 1988).

The structural inequalities are especially critical to the context of the research site.

Due to the district and campus having a large population of students of color and low socioeconomic students, the “pedagogy of poverty versus good teaching” (Haberman, 1991, p. 290) is apparent. Haberman (1991) stated, “teachers are accountable only for engaging in the limited set of behaviors commonly regarded as acts of teaching in urban schools- that is, the pedagogy of poverty” (p. 299). He suggests that a basic form of teaching has become accepted in urban classrooms. This ‘accepted’ form of teaching promoted by Haberman includes low standards and expectations that have become the norm, and instruction is at a low level of rigor. Haberman (1991) also found that “youngsters achieve neither minimum levels of life skills nor what they are capable of learning” (p. 292-293) and the pedagogy of poverty does not work. A systematic reform of the pedagogy in urban classrooms is needed.

In addition to the pedagogical need for reform, Haberman and Post (1998) suggest that there needs to be a focus on specific teacher attributes that can offer a multicultural curriculum that incorporates texts, historical aspects, beliefs, values, and perspectives of people from different cultural backgrounds (Hidden curriculum, 2014). However, the stereotypical best and brightest teacher candidates are different when placed in urban settings because “successful candidates are over 30 years of age, frequently minorities, and have life experiences in urban areas” (Haberman & Post, 1998, p. 104).

The six facets of cultural capital have been explored. Bourdieu's cultural capital theory is influenced by two additional theories: (1) Anyon's Reform Theory, and (2) Kozol's Socio-Economic Status (SES) Theory. These two theories suggest that the differences in socioeconomic and cultural backgrounds effect students' educational attainment; thus, impacting their cultural capital.

### **Anyon's Reform Theory**

The first theory that influences Bourdieu's theory is known as Anyon's Reform Theory. Anyon (2014) agrees with the fact that a person's education is an important determinant of their income; however, this is not always the case for students of color due to many factors that mitigate and even reverse wage effects on income (p. 50).

"African-Americans and Latinos earn less than their White counterparts, even among the most highly-educated workers. African-Americans and Latinos with master's degrees do not exceed the median lifetime earnings of Whites with bachelor's degrees" (Carnevale, Rose, & Cheah, 2011, p. 7; Anyon, 2014, p. 51). Thus, there is strong research to indicate that educational attainment is influenced by institutional factors including race.

Anyon (1980) completed an analysis of differences in schoolwork in contrasting social class contexts. The analysis suggested "the 'hidden curriculum' of schoolwork is tacit preparation for relating to the process of production in a particular way" (Anyon, 1980, p. 10). Hidden curriculum "refers to the unwritten, unofficial, and often unintended lessons, values, and perspectives that students learn in school...[and] consists of the unspoken or implicit academic, social, and cultural messages that are communicated to students while they are in school" (Hidden curriculum, 2014). The

school experience of low socioeconomic students contributed to their lack of development. Anyon (1980) continues by stating, “the contribution to the reproduction of unequal social relations lies a theoretical meaning and social consequence of classroom practice” (p. 10).

Anyon’s research is still very relevant to today’s social class contexts and that often there are unequal structures of economic relationships apparent in classrooms everyday. For example, there are differences in curriculum and pedagogical practices, as well as types of work tasks and interactions. The African-American and Latino labor market has decreased due to what some attribute to a ‘digital divide’, which can be described as the growing need for 21<sup>st</sup> century information and technology skills. This lack of knowledge and skills has attributed to the inequality faced by African-American and Latino students related to less- or lower quality education (Anyon, 2014).

In addition, Anyon (2014) states, “even academically successful school reform can only rarely trump macroeconomic conditions and policies” (p. 55). In other words, both educators and public policy makers have to work together to address the current economic policies that result in widespread low-wage work that tends to target students of color.

### **Kozol’s SES Theory**

The second cultural capital theory in support of Bourdieu is Kozol’s SES Theory. Kozol (1991) likewise, examined the extremes of wealth and poverty and how it affects our nation’s schools. He found that there was a huge gap between schools that served predominately rich students versus those that served poor students. Kozol found

that urban schools were typically understaffed and overcrowded. In fact, many of the urban schools lacked basic elements of learning such as books and even classrooms. Moreover, the amount of money granted per pupil from legislative grants ranged from approximately 90 cents per pupil in poor districts to \$14 per pupil in the wealthiest districts (Kozol, 1991, p. 119). Kozol (1991) stated that, “denial of the means of competition is perhaps the single most consistent outcome of the education offered to poor children in the schools of our large cities” (p. 102). These inequities have created ‘savage inequalities’ because the message is that the poorest are beyond help and any resources that they would get would be wasted; while the wealthiest are provided smaller class sizes, highly qualified teachers, textbooks, technology, and resources necessary for learning. This funding inequity mirrors the Matthew Effect that the rich get richer and the poor get poorer (Stanovich, 1986).

Kozol (1991) also found that not only is there is gap due to socioeconomic status, but that this gap has created “ racial patterns in assignment and school tracking” (p. 144). He found that African American and Hispanic students appeared to be placed in lower tracks. In fact, Kozol (1991) stated that “black children are three times as likely as white children to be placed in classes for the mentally retarded but only half as likely to be placed in classes for the gifted” (p. 144). This issue is not just present in the poorest schools, but some of the more affluent as well. Kozol (1991) found that “even in the suburbs... it has been noted that a differential system still exists, and it may not be surprising to discover that the differences are once again determined by the social class, parental wealth, and sometimes race, of the schoolchildren” (p. 145).

Two major theories presented by Anyon and Kozol address causal factors related to cultural capital. The use of standardized tests for college admissions are relevant to the theories presented.

### **History of Standardized Tests for College Admission**

At the beginning of the 20<sup>th</sup> century, Alfred Binet created a test that would identify students with intellectual disabilities who would not do well in school. The early test became a screening for whether or not students would be allowed in school. This type of test eventually became the basis of the Intelligence Quotient (IQ) test known as the Stanford-Binet test.

The IQ test and the Scholastic Aptitude Test (SAT) have similar methodology behind their creation. The SAT derives from the initial work of Robert Yerkes during the intelligence testing movement that took place during the First World War. The U.S. Army allowed Yerkes to administer the first IQ test, the Army Alpha. Then Yerkes's assistant, Carl Brigham who was affiliated with the Department of Psychology at Princeton University, adapted the Army Alpha test to use as a college admissions test. James Conant, president of Harvard, "decided to start a new scholarship program for academically gifted boys who did not come from the Eastern boarding schools that were the regular suppliers of Harvard's students" (Frontline, 2014, p.1) Conant then charged his assistant dean, Henry Chauncey, with finding a test that would help identify students to meet the requirements for the scholarship program. Chauncey then met with Brigham and recommended that Conant use the SAT because of its ability to measure intelligence; in which Conant agreed. Chauncey eventually encouraged the College Board to use the

SAT as an exam for scholarship applicants. The Educational Testing Service (ETS) was then created and adopted the SAT as the basic college admissions test (Frontline, 2014); thus beginning the standardized test for college admissions.

The first administration of standardized testing for college admissions grew from the old College Boards in 1901 (Atkinson & Geiser, 2009). The SAT was created in 1926 and was purported to measure innate intelligence as well as students' general analytic ability. The SAT was adapted from the World War I Army IQ test and was supposed to serve as a scholarship-screening device in the 1930s (Balf, 2014). The SAT was an easily scored, multiple-choice assessment that measured students' aptitude for learning or general ability (Lemann, 2000). According to Atkinson and Geiser (2009), the SAT evolved from the IQ test and "if aptitude for learning could be reliably measured, the SAT could help identify students from disadvantaged circumstances who, despite inferior schooling, were nevertheless deserving of admission – thus improving access and equity in college admissions" (p. 4). This assumption was problematic and in 1990 the College Board changed the name from the "Scholastic Aptitude Test" to the "Scholastic Assessment Test" and then dropped the name altogether in 1996, eventually becoming the "SAT Reasoning Test" in 2005 which included the addition of the writing exam. In addition to name changes, the description of what the test was supposed to measure has evolved from "aptitude" to "generalized reasoning ability" to "critical thinking" and test items and formats continue to be revised (Atkinson & Geiser 2009; Lawrence, Rigol, Essen, & Jackson, 2003).

The SAT has changed, yet again, starting in March 2016, and has been reported to measure in-depth knowledge of subjects studied in school. The written essay is now optional despite the fact that writing is one of the most important skills for success in college and was found to be one of the most predictive components of the old SAT for student success in their first year of college (Kobrin, Patterson, Barbuti, Mattern, & Shaw, 2008). Although the new test seems to be headed in the right direction, it is still a norm-referenced test used to rank students rather than a measure what students actually know.

SAT scores have been found to have an accurate measure of general intelligence, in addition to being a useful tool in predicting cognitive functioning (Frey & Detterman, 2004). SAT scores have also been used in many research studies as an indicator of college-readiness. Wiley et al. (2010) used the SAT score along with students' high school grade point averages and an academic rigor score to create a College Readiness Index. The purpose of the College Readiness Index was to accurately measure and diagnose college readiness in an effort to initiate discussions in schools and districts to help a greater number of students achieve college readiness.

The history of the use of standardized testing for college admission has been explained. However, the relationship between college admission and college achievement should be explained as it pertains to college readiness.

### **Relationship Between College Admissions and Achievements**

Frey and Detterman (2004) found that the focus of much of the current research on the SAT has been due to its relationship to college admissions and achievements.

Being able to meet and/or exceed criterion on college entrance exams, such as the SAT and American College Testing (ACT), have become an important role in students meeting college readiness standards. In fact, Greene and Forster (2003) stated that, “taking an entrance exam is a necessary component of college readiness... [and] researchers use the number of students who take college entrance exams (the SAT and the ACT) as an indicator of how many students are college ready” (p. 4). Additionally, Greene and Forster (2003) noted that “there has been a great deal of research on high school academic outcomes as measured by test scores... the basic skills measured by these tests are certainly relevant to college readiness” (p. 4).

Atkinson and Geiser (2009) stated that college entrance exams such as the SAT and ACT “have contributed mightily to... the ferocious competition for admission at highly selective institutions” (p. 2). To measure college-readiness, many admissions offices at colleges and universities rely heavily on SAT exam scores. A student’s SAT score can tell admissions offices how well prepared the student is for college-level academics. According to Harvey, Slate, Moore, Barnes, and Martinez-Garcia (2013) “the SAT provides a powerful and rigorous predictor of college success. Both the SAT and ACT are norm-referenced tests used by colleges and universities to compare students against one another “to help admissions offices sort large numbers of applicants and evaluate their relative potential for success in college” (Atkinson & Geiser, 2009, p. 17). These tests have become so important that, “today nearly three million high-school seniors take the SAT or ACT each year” (Atkinson & Geiser, 2009, p. 1). It is interesting to note that although more and more students are taking the SAT exam, the students are

failing to meet criterion. Two distinct areas will be explored: (1) college and career readiness, and (2) advanced placement, dual credit, and magnet programs.

### **College and Career Readiness**

The first relationship of college entrance exams is college and career readiness. Harvey et al. (2013) indicated that colleges and universities determine college readiness by increasing required placement testing, and are often requiring development or remedial education for students who do not achieve college level placement (Amey & Long, 1998; King, Rasool, & Judge, 1994). The National Center for Education Statistics (2011) found that 51% of students entering 2-year public colleges needed remediation, which results in a cost of \$1.4 billion a year. Greene and Forster (2003) also stated that “there have been some studies on how many freshman at four-year colleges have to take remedial courses, with estimates ranging from 22% at public institutions and 13% at private institutions to as high as 49% at all institutions” (p. 4). As a result, McKinsey and Company (2009) stated that the academic achievement gap has imposed “the economic equivalent of a permanent recession” (p. 6).

Adams (2015) indicated, “while high-school graduation rates are at all-time highs, stagnant performance on both [SAT/ACT] tests points to a need for change” (p. 2). As a result, college and career readiness benchmarks have been created. Conley (2008) defines college readiness as “the level of preparation a student needs in order to enroll and succeed- without remediation- in a credit-bearing general education course at a post-secondary institution that offers a baccalaureate program” (p. 24). In addition to students performing well on SAT and ACT exams, students “transition to the college

environment is often a function of their readiness” (Conley, 2008, p. 24). Conley (2008) stated, “a key problem is that the current measures of college preparation are limited in their ability to communicate to students and to educators the true range of what students must do to be fully ready to succeed in college” (p. 24). As a result, Conley (2012) found that “students must master four keys to college and career readiness: (1) cognitive strategies; (2) content knowledge; (3) learning skills and techniques; and (4) transition knowledge and skills” (p. 2). Furthermore, Conley (2008) defined ‘succeed’ as “completing entry-level courses at a level of understanding and proficiency that makes it possible for the student to consider taking the next course in the sequence or the next level of course in the subject area” (p. 24). In addition to succeeding in college, college readiness success is “closely related to workforce preparedness... [and students] are also more likely to possess the skills to help them succeed in the workforce as well as in the world” (Cline, Bissell, Hatner, & Katz, 2007, p. 30).

Atkinson and Geiser (2009) stated that “nationally, the most ambitious effort to develop standards of college readiness [was] ‘Standards for Success’, a project supported jointly by the American Association of Universities and the Pew Charitable Trusts. Led by David Conley at the Center for Education Policy and Research at the University of Oregon, the project convened representatives from AAU institutions to identify content standards for what students need to know in order to succeed in entry-level courses at those institutions” (p. 14). The project eventually ended in 2003, resulting in College Board licensing the Standards for Success.

Since the College Board has a vested interest in the SAT, they are now using the standards to review test specifications for the SAT, PSAT/NMSQT and AP exams (College Board, 2009). Although college readiness standards have been reviewed and implemented, the College Board college and career readiness benchmark indicated that only “41.9% of recent high school graduates were on track to succeed in college- a figure that has not increased in five years” (Adams, 2015, p. 1). According to the National Center for Education Statistics (2005) “about 67 percent of U.S. students who graduated from high school in 2004 went on to enroll in college- a higher proportion than in any previous year” (Conley, 2007b, p. 23). Greene and Forster (2003) estimated “that there were about 1,299,000 college-ready 18-year-olds in 2000, and the actual number of persons entering college for the first time in that year was about 1,341,000...[indicating] the number actually attending college is larger than the number who are college ready. Although the percentage of students attending college may have increased, the most recent data available show that only about 35 percent of students who entered four-year colleges seeking a bachelor’s degree in 1998 had earned their degree four years later, and only 56 percent had graduated six years later (Knapp, Kelly-Reid, & Whitmore, 2006).

### **Discrepancy Between K-12 Systems and Colleges**

In order to address the issues of stagnant performance on college entrance exams and students failing to meet college readiness standards, state and federal legislation within the last several decades has mandated academically rigorous curriculum and stringent accountability measures “in hopes of increasing the likelihood of students

graduating from high school college-ready” (Barnes, Slate, and Rojas-LeBouef, 2010, p. 1). This is due in part to President Obama placing an “emphasis on changing the No Child Left Behind Act to a focus on college-and-career readiness” (Barnes et al, 2010, p.1). President Obama stated, “I ask every American to commit to at least one year or more of higher education or career training. This can be community college or a four-year school, vocational training or an apprenticeship. But whatever the training may be, every American will need to get more than a high school diploma” (Obama, 2009, p.3). Historically, the K-12 system and postsecondary system have been isolated from one another and there has been a lack of coordination between the two entities. As a result, the primary emphasis to address college readiness for all students has been placed solely on the K-12 system, which is “ill-suited to carry this burden alone,” (Kirst & Venezia, 2001, p.95)

Although there has been a push for curriculum to be more rigorous, The National Commission on Excellence in Education (1983) found that “course content had been diluted and that many students were abandoning college preparatory courses for easier ‘general track’ courses” (p. 62). ACT (2005) found that “simply taking the right core courses in high school can increase ACT composite score[s]... what’s more, taking specific courses over and above the recommended core curriculum can increase ACT composite score[s] by up to 5.8 score points, regardless of the students’ prior achievement level, depending on the course taken” (p. 2-3). Additionally, Atkinson and Geiser (2009) found that “student’s record in college preparatory courses in high school remain[ed] the best indicator of how [students] are likely to perform in college” (p. 4).

However, Conley (2007b) stated, “several observational studies have found that high school students often complete prescribed tasks that require little cognitive engagement... [and] resist solving problems with ambiguous or multiple solutions” (p. 24). These students require no deep mastery or understanding of the material (Angus & Mirel, 1999; Newmann & Associates, 1996; Oakes, 2005)

Greene and Forster (2003) found that “70% of all students in public high schools graduate, and only 32% of all students leave high school qualified to attend four-year colleges” (p. 1). They stated that there “is a gap between what high schools require for graduation and what four-year colleges require before they can consider students’ applications, causing many students to graduate from high school unable to apply to college” (p. 3). Those that can apply, get accepted, and attend college, find that their college courses are fundamentally different from their high school courses (Conley, Aspengren, Stout, & Veach, 2006). Similarly, the National Commission on the High School Senior Year found that “not enough high schools are preparing students for college careers and that while 70% of today’s high school graduates go on to some form of postsecondary education, only one-half of those who enroll at four-year institutions leave with a degree” (Ndura, Robinson, & Ochs, 2003, p. 21)

Conley (2007b) found that “research suggests that the syllabi in high school are different from those found in college courses” (p. 25). Additionally, college courses move at a much faster pace (Standards for Success, 2003). This gap creates serious consequences for students whose high schools failed to prepare them for college because

“more and more students and their families believe that a college education is the key to success in the new economy” (Conley, 2007a, p.28-29).

Several research studies have been conducted on how to close the college readiness gap. Cline, Bissell, Hatner, and Katz (2007) stated that “the disconnect between college eligibility and college readiness has prompted a push to identify ways to close the discrepancy between high school achievement and post-secondary readiness” (p. 30). Additionally, they found that “the concept of college readiness puts the focus on preparing students to succeed at college-level work or in the workforce, rather than just fulfilling eligibility requirements” (p. 30).

### **Advanced Placement, Dual Credit, and Magnet Programs**

Three programs, advanced placement, dual credit, and magnet programs will be developed as pertaining to advanced coursework that prepares students to be college-ready.

#### **Advanced Placement**

The first advanced coursework explained is that of advanced placement. Advanced placement courses are increasingly being offered for students to earn college credit via passing an advanced placement exam. According to Kyburg, Hertberg-Davis, and Callahan (2007), it is believed that advanced placement programs “open the doors of higher education to the diverse students found in contemporary classrooms” (p. 172). However, they found concern with the fact that AP data “revealed several mismatches between diverse students’ needs and the curriculum and instruction offered in these

programs, indicating a need for the provision of a broader range of services for students on the secondary level in urban environments” (p. 206).

Furthermore, Hertberg-Davis, Callahan, and Kyburg (2006) suggest that “when consistent and widely endorsed support structures are in place over a lengthy period of time, talented students of diverse backgrounds can overcome deficits in requisite study skills, background knowledge, and language, enabling them to derive a sense of success and accomplishment within standardized AP and IB experiences in preparation for future advanced courses of study” (Kyburg et. al., 2007, p. 206)

### **Dual Credit**

The second advanced coursework is that of dual credit. With emphasis being placed on increasing college readiness and academic rigor, many schools have tried to bridge the gap between high school and college by offering dual credit or dual enrollment courses. Bailey, Hughes, and Karp (2002), stated that dual credit programs “are often seen as a way to offer high school students access to coursework not available at the high school as well as a means of exposing them to the academic demands of college” (p. 5). As a result, they found that an overwhelming number of students enrolled in a dual credit program experienced more academic success in college than their traditional high school counterparts.

According to Smith (2007), “the creation of dual-credit enrollment partnerships provides postsecondary enrollment options to high school students that may (a) ease transition to college, (b) reduce college cost by accelerating time to degree completion, and (c) provide a highly trained workforce that can compete in a global marketplace” (p.

371; Boswell, 2001). Additionally, Smith (2007) found that “there is a significant relationship between participation in dual-credit enrollment and increased educational aspirations” (p. 383). Boswell (2001) also found that dual-credit enrollment is a contributing factor in students’ aspirations to go to college.

Similarly, Catron (1998) stated that students benefited from dual credit program because they got to experience completing and being successful in advanced coursework. In addition, Andrews and Marshall (1991) found that by being enrolled in a dual credit program and completing advanced coursework, students were able to get a head start in college and obtain higher-level job skills.

However, many of the dual credit programs have been traditionally offered to high-achieving high school students in an attempt to offer “gifted students an academically challenging alternative to remaining in their regular, age-graded high school programs” (Bailey et. al., 2002, p. 5; Rogers & Kimpston, 1992). Greenberg (1988) found that many consider this viewpoint due to the fact that less advanced students are not academically prepared for college-level work. On the other hand, many believe that underachieving students are bored in their classes and perform at higher levels when enrolled in dual enrollment courses because they are more motivated (Lords, 2000).

### **Magnet Programs**

The third area of advanced coursework explored is that of magnet programs. In addition to advanced placement and dual credit programs, magnet schools have emerged in order to offer focused programs. In the 1960’s, the education reform model of public

school choice (i.e. magnet schools) was used as a way to address educational inequity resulting from protesting school segregation. Waldrup (2013) discusses how “magnet schools are based on the premise that all students do not learn in the same ways, that if we find a unifying theme or different organizational structure for students of similar interests, those students will learn more in all areas.” According to Magnet Schools of America (2013), most magnet schools are typically “more hands on – minds on and use an approach to learning that is inquiry or performance/project based. They use state, district, or Common Core standards in all subject areas, however they are taught within the overall theme of the school”. Betts, Kitmitto, Levin, Bos, and Eaton (2015) stated, “the key features of a magnet school are a specialized curriculum (e.g., performing arts or mathematics and science programs) or instructional method (e.g., open classrooms or team teaching), and enrollment that is open to students from outside the school neighborhood or attendance zone” (p. xii).

### **Conclusion**

The literature suggests that high schools change the climate to create a stronger college-attending culture and strengthen graduation requirements. According to Conley (2007b) “several states have published sets of college readiness definitions linked to state academic standards” (p. 24-25). Jobs for the Future (2011) found that Texas is a national leader in taking the next steps to ensure more high school students graduate prepared for postsecondary success and is one of the states that have created a comprehensive set of college and career readiness standards (CCRS). The CCRS do not have performance level indicators that are necessary to demonstrate competence (TEA,

2009); however, the outcomes are determined by what high school students can be expected to accomplish by the time they complete high school. According to Harvey et al. (2013), the Texas Education Agency (TEA) and Texas Higher Education Coordinating Board (THECB) were aware that not all high school graduates plan to go to college; however, “the same knowledge and skills noted in the CCRS are necessary for entry into a skilled workforce” (p. 187). TEA (2009) stated that employers expect employees to be able to: (1) read and communicate well; (2) perform relatively complex mathematical calculations accurately; (3) possess a knowledge of basic science; (4) have a fundamental understanding of American and other cultures; (5) be able to think critically; and (6) adjust to a rapidly-changing work environment. The foundation of knowledge and intellectual skills, including intellectual ability and malleability are critical to high school graduates planning on attending college or the workforce (TEA, 2009). “The economic future for Texas is upheld by the ability of its workforce to do jobs that increasingly require postsecondary documentation or degree” (Harvey et al., 2013, p. 186).

Research suggests that high schools should strengthen graduation requirements by “taking the following curriculum during their four years of high school: (a) 4 years of English; (b) 3 years of mathematics; (c) 3 years of science; (d) 3 years of social studies; and (e) one-half year of computer science” (Barnes et al., 2010, p. 3-4). Texas has strengthened graduation requirements even further by establishing a four by four, which includes: (a) 4 years of English; (b) 4 years of mathematics; (c) 4 years of social studies; and (d) 4 years of science. In addition, students that are college-bound must complete

two years of a foreign language. Texas legislators also mandated that “all Texas school districts should report to the Texas Education Agency on six indicators of college-readiness: (a) Advanced Placement exam scores; (b) dual credit course enrollment; (c) Standardized Assessment Test (SAT) critical reading and math test scores, ACT English and math test scores, of the Texas Assessment of Knowledge and Skills (TAKS) English/Language Arts (ELA) and mathematics exit-level test scores; (d) advanced coursework in science, math, and foreign languages; (e) scores from state college-readiness assessments; and (f) percentage college-ready graduates in each high school and district determined by the first four indicators” (Barnes et al., 2010, p. 12; TEA, 2009). This has since changed to reflect the new state assessment, State of Texas Assessment of Academic Readiness (STAAR) test. “Students who met or exceeded college-readiness standards based on standardized test scores, to which the aforementioned Texas college-readiness indicators allude, were perhaps more academically prepared for college” Barnes et al., 2010, p. 13; Zhao, 2006).

As a result, the research site began the college and career magnet program. This program supports research that suggests how to close the college readiness gap. The college and career magnet program offers students the “knowledge of the college enrollment processes, including admissions, financial aid, and money management” (Barnes et al., 2010, p. 14; ACT, 2005; Callan, Finney, Kirst, Usdan, & Venezia, 2006; Moore, Slate, Edmondson, Bustamante, & Onwuegbuzie; Roderick, Nagaoka, & Coca, 2009; Varcoe, Peterson, Garrett, Martin, Rene, & Costello, 2001; Vienne & Slate, 2009; Zhao, 2009). This is evident in the number of parent and student informational meetings

held in the evenings on campus regarding the application process. Free Application for Federal Student Aid (FAFSA) nights are also held in order to assist students in gaining financial aid. In addition, students, “develop cognitive strategies, including time management and study skills” (Barnes et al., 2010, p. 14; Conley, 2005, 2007a, 2007b; Lammers, Onwuegbuzie, & Slate, 2001; Slate, Jones, & Dawson, 1993; Slate, Jones, & Harland, 1998; Slate, Jones, & Rodgers, 1997/98). Courses such as EDUC 1300/Learning Frameworks, College and Career Path, and Teen Leadership are offered to students. These courses specifically address time management and study skills. The college and career magnet has also established working relationships with a local community college district; promoting continuous interaction between the high school and postsecondary institutions (Barnes et al., 2010; Callan et al., 2006; Conley, 2007b; Roderick et al., 2009). All of these facets of the college and career magnet are supported by research; thus, students enrolled in this magnet program should meet and/or exceed criterion on the SAT and postsecondary readiness standards.

The literature review provides information that encompasses the overall concept of how culture and course enrollment can affect student outcomes. Literature pertaining to the conceptual framework is also included. In chapter 3, the researcher explains the research methodology for this study. Chapter 4 displays the results of the study and how the data were analyzed. Chapter 5 concludes the research with summaries and conclusions.

## CHAPTER III

### METHODOLOGY

The purpose of this quantitative record of study was to explore the relationship between performance on Evidence-Based Reading and Writing (EBRW) scores on the SAT and participation in dual credit, advanced placement, or on-level junior English coursework. In addition, the relationship between participation in a collegiate academy magnet program and SAT performance was also of interest as pertaining to enrollment in advanced placement or dual credit courses. A quantitative approach was selected for this study as it involved collecting quantitative data in the form of student SAT EBRW scores and then explaining the quantitative results with an in-depth Analysis of Covariance data analysis and one-sample *t*-test. The SAT EBRW scores were collected to determine whether the independent variable relates to the dependent variable. Preliminary Scholastic Aptitude Test (PSAT) EBRW scores were used as a control for student English Language Arts and Reading (ELAR) performance at the beginning of the junior year.

#### **Participants**

The participants in this study consisted of 474 students who were enrolled in a junior level English course at the research site and were administered the PSAT on October 15, 2015, and the SAT on March 2, 2016. The sample consisted of a diverse group of students enrolled in either an on-level, advanced placement, or dual credit junior level English course. Delimitations included the exclusion of special education

and English language learners because of their identified academic learning support needs. By nature of their identifications, they are more likely to perform lower than students not participating in two academic support programs. Table 3.1 includes a demographic profile of the study participants.

Table 3.1

*Demographics of Study Participants*

English Course	American		African	Hispanic	Asian	Multiple	Total
	White	Indian	American			Races	
On-Level	33	3	64	89	7	3	199
Advanced Placement	27	0	52	52	8	2	141
Dual Credit	32	0	29	46	7	4	118
Total	92	3	143	187	22	9	458

**Setting**

The research site is a college and career magnet high school located in a large suburban city northeast of Dallas, Texas. The site is one of eight high schools in a large district that serves approximately 58,000 students. The research site has a similar ethnic distribution as the district, with an enrollment of 2,317 students including: 41.3%

Hispanic, 30% African-American, 20.3% Caucasian, 5.8% Asian, 2.2% two or more races, 0.4% American Indian, and 0.1% Pacific Islander. In addition, 60.4% of students have been identified as at-risk, 55.7% of students are economically disadvantaged, 7.6% are special education, 3.8% are English language learners, and 6% are gifted and talented (TEA, 2015c). It is important to note that these areas are not mutually exclusive.

Although the predominant student ethnicity/race is that of Hispanic, the racial distribution of campus professionals does not mirror the population of students. The majority of the campus professionals are White (59.4%), followed by African American (22.8%), Hispanic (11.2%), Asian (4.7%), two or more races (1.3%), and American Indian (0.6%) (TEA, 2015c). This discrepancy between staff and student populations can create a challenge for educators to provide a culturally diverse community, as well as culturally relevant differentiated curriculum and instruction.

During the 2015-2016 school year, the research site had a total staff of 158 teachers. Table 3.2 provides a demographic breakdown of teachers. Column one provides a breakdown of the groups including: race/ethnicity, gender, and teachers by highest degree held. Columns two through four include the percentage of teachers meeting the group criterion at the campus, district, and state level. Note that the percentage of teachers having a master's degree is 20.2% higher than that of the state average (23.6%) and 14.5% higher than that of the district (TEA, 2017). This increase is due to the implementation of the college and career magnet program that offers dual credit courses. In order to teach a dual credit course, the teacher must have a master's degree or 18 hours of coursework in their respective content area. The percentage of

teachers having a doctorate degree is 2.6% higher than that of the state (0.6%) and 2.4% higher than that of the district (0.8%) (TEA, 2017). Additionally, the research site’s staff is predominately male (51.4%). The gender distribution is very different from that of the district and state. In fact, teachers in the state are predominately female (76.5%) (TEA, 2017), and as a nation teachers have historically been predominately white females.

Table 3.2

*Demographics of Teachers*

Group	Campus	District	State
<i>Race/Ethnicity</i>			
American Indian	0.6%	0.8%	0.4%
Asian	4.6%	3.1%	1.5%
Black	24.6%	15.2%	10.1%
Hispanic	8.9%	18.5%	26%
Multi-Racial	1.9%	1.6%	1.1%
White	59.4%	60.7%	60.8%
Pacific Islander	0.0%	0.1%	0.2%

Table 3.2 Continued

Group	Campus	District	State
<i>Gender</i>			
Males	51.4%	26.1%	23.5%
Females	48.6%	73.9%	76.5%
<i>Teachers by Highest Degree Held</i>			
No Degree	0.0%	0.4%	1.0%
Bachelors	53.0%	69.5%	74.7%
Masters	43.8%	29.3%	23.6%
Doctorate	3.2%	0.8%	0.6%

## Methods

### Statement Regarding Human Subjects and the Institutional Review Board (IRB)

This quantitative methods study underwent the IRB proposal process to secure compliance with federal guidelines for collecting data from human subjects, and the IRB approval is attached as Appendix A to this proposal. Upon completion of the research

study (including data collection and analysis), a completion report will be submitted to the IRB. The research conducted constituted no risk to any of the subjects involved. All data collected were obtained from the school district research, assessment, and accountability office as a .csv and .xlsx file, with all student identifiable information removed. The data file was obtained using a secure network by logging into the district provided email, which is username and password protected. The data collected included information pertaining to the research site's students enrolled in a junior level English course who took the PSAT on October 15, 2016, as well as the SAT on March 2, 2017. PSAT total scores, EBRW sections scores, Math section scores, Reading test scores, Writing and language, and selection index scores were obtained. SAT total scores, EBRW section scores, math section scores, reading test scores, writing and language test scores, and math test scores were also obtained. In addition, the data provided included the demographic breakdown of students by gender, race/ethnicity, economic disadvantage, LEP, SPED, and indicated whether students were enrolled in the college and career magnet program. District course codes and names were also utilized to ensure accuracy in classifying students' junior level English courses. The campus principal and school district have approved the research. The records of this study will be kept private. No identifiers linking subjects to this study will be included in any sort of report that might be published. No subjects will be vulnerable and all rights will be protected. Research records will be stored securely and only researcher Tiffany Staats and Principal Investigators, Dr. Patrick Slattery and Dr. James Laub, will have access to the records. Information about this study will be stored in a locked file cabinet and computer

files protected with a password over a secure network. In addition, information related to this study will be kept confidential to the extent permitted or required by law.

The purpose of this quantitative record of study was to explore the relationship between taking a dual credit or advanced placement course, and student performance on SAT scores. With the introduction of magnet programs, such as a college and career magnet that includes a collegiate academy, there is potential that students enrolled in these programs would meet and/or exceed SAT criterion when enrolled in an advanced placement or dual credit course. The research examined the 11<sup>th</sup> grade student SAT EBRW scores obtained from the district. The research questions included the following:

1. Taking into account prior English language arts and reading (ELAR) test performance, are there differences in SAT Evidence-based Reading and Writing (EBRW) scores between students, based on type of junior level English course in which they are enrolled?
2. Taking into account prior English language arts and reading (ELAR) test performance, are there differences in SAT Evidence-based Reading and Writing (EBRW) scores between students, based on enrollment in the magnet program?
3. Taking into account prior English language arts and reading (ELAR) test performance, are there differences in SAT Evidence-based Reading and Writing (EBRW) scores between students, based on race/ethnicity?
4. Is there a statistically significant difference in mean SAT Evidence-based Reading and Writing (EBRW) scores between students enrolled in dual credit

and advanced placement junior level English coursework, as well as the magnet program, compared to that of the median Nationally Representative Sample Percentile (NRSP) and SAT User Percentile- National (SUP-N)?

### **Data Analysis**

This record of study utilized a quantitative research design. Quantitative data was collected in the form of PSAT and SAT scores obtained from the district with identifiable information removed for all students. The data file included the following from the October 15, 2016, PSAT administration, and the March 2, 2016, SAT administration: index scores, scale scores for evidence based reading and writing, and separate reading and writing scores. In addition, the data included the following indicators: enrollment in a magnet program, junior level course code, course description, grade level, race, ethnicity, special education, English language learner, and economically disadvantaged. Student SAT EBRW scores were analyzed to determine differences in SAT EBRW scores based on junior English coursework enrollment, magnet enrollment, and race/ethnicity. In addition, the SAW EBRW scores were used to compare students against that of the NRSP and SUP-N standards. Test scores included the 474 11th grade students who took the PSAT administered on October 15, 2015, as well as the SAT administered on March 2, 2016, who were enrolled in a junior level English course. The junior level English course was selected because all students must be enrolled in an English course during their junior year and students are not able to complete a high school level English course during middle school. For example, students are able to complete Algebra I and Spanish I, two high school courses, while enrolled in

the 8<sup>th</sup> grade in order to complete more advanced levels of math and foreign language during their junior and senior years of high school. However, this is not applicable to English courses; thus, making junior level English coursework the best indicator for determining ELAR performance. The independent variables consisted of student enrollment in either on-level, dual credit, or advanced placement junior level English courses, the dependent variable was student performance on the EBRW section of the SAT exam. When analyzing results, all significance was determined at the  $p \leq .05$  level.

The inferential statistical analysis was an analysis of covariance (ANCOVA). ANCOVA provides an overall measure of whether groups differ from one another on the dependent variable, while additionally allowing the ability to equalize initial differences between groups (Field, 2005). Including students' PSAT EBRW scores as a covariate in the analysis provided a statistical control for inherent differences between students near the beginning of the junior year.

An ANCOVA was utilized in this study because, the research questions sought to identify the potential relationship between enrollment in English courses, participation in the magnet program, and race/ethnicity differences on SAT EBRW scores. However, students in each of these various groups likely differ in their initial ELAR achievement, as one might expect higher-performing students to be more likely to enroll in dual credit or advanced placement English coursework than lower-performing students. Thus, any differences in SAT performance may be attributable to achievement differences between students prior to course or program enrollment. PSAT scores are correlated to SAT scores, and thus may be a good variable to consider as a covariate. Inclusion of a

covariate in an ANOVA model serves to have two positive effects on the analysis: reduction of the within-group error variance, and elimination of potential confounding variables (Fields, 2005).

In addition to the ANCOVA, a one-sample *t*-test was performed to find out “if there was a difference in the average scores of one (or more) variable(s) between groups that were independent of one another” (Salkind, 2014, p. 200). The one-sample *t*-test was utilized to compare the means for the dual credit, advanced placement, and magnet program students against the two types of norms established by the College Board for the new SAT. The Nationally Representative Sample Percentile (NRSP) compares performance against expected average performance of juniors and seniors across the nation, regardless of whether or not they would have taken the SAT. The SAT User Percentile- National (SUP-N) compares performance against students likely to take the SAT in the junior or senior year and plan on attending college (College Board, 2016b).

Table 3.3 includes a timeline of data collection methods used to obtain student PSAT EBRW and SAT EBRW scores. Column one includes the date of collection, column two the method utilized, and column 3 the validation.

Table 3.3

*Timeline of Data Collection and Methods*

Date of Collection	Method	Validation
9/19/2016	Obtained approval for the IRB proposal.	Secure compliance with federal guidelines for collecting data from human subjects.
9/28/2016	Submitted school district independent research project application.	After obtaining IRB approval, I completed the school district independent research project application to gain school district approval.
2/13/2017	Obtained approval from the school district for the independent research project application	I received a letter from the school district granting approval for my independent research project application.
2/28/2017	Obtain data file from the district research, assessment, and accountability department	The letter I received stated that I would receive the data file on/before February 28, 2017; however, I did not receive it according to the said timeframe.
3/7/2017	Obtain data file from the district research, assessment, and accountability department	Coordinator for Program Evaluations and Readiness Assessments in the Research, Assessment and Accountability Department emailed to apologize for delay of the data file and expressed that it would be available Friday, 3/8/2017.
3/8/2017	Obtained data file from the district research, assessment, and accountability department	Received email from the Coordinator for Program Evaluations and Readiness Assessments in the Research, Assessment, and Accountability department with the data file attached in both a .csv and .xls file format.

## **Limitations**

I have identified four limitations that I believe are significant for this study:

1. The PSAT was administered on October 15, 2015. By this time students had already been enrolled in a junior level English course for 35 instructional days.
2. The SAT was administered on March 2, 2016. By this time students had been enrolled in a junior level English course for 118 instructional days and had not yet completed the course.
3. The study includes only students enrolled in junior level English courses.
4. The study only includes results from the EBRW section of the SAT and the PSAT.

## **Qualifications of Researcher**

Throughout my fourteen years as an educator, I have had many educational and work related experiences that foster my passion for solving problems within the educational environment. My curriculum knowledge spans a wide variety of categories, in addition to my ability to teach a broad spectrum and diverse population of students. I am able to differentiate lessons in order to meet the needs of all students. Furthermore, I have studied and developed a clear understanding of vertical/horizontal alignment needed to effectively implement curriculum and instruction at all levels. Through countless leadership positions and classroom experiences, I have gained effective communication, collaboration, public relations and interpersonal skills. I have created and implemented professional development at the campus and district level. I am a key stakeholder invested in improving college readiness for student at the college and career

magnet. I previously worked as a dual credit professor at the college and career magnet, teaching the Collegiate Academy students. In addition, I taught PreAP English II to students enrolled at the campus. Currently, I am an English Language Arts and Reading (ELAR) Instructional Design Facilitator within the district in which the research site resides. I directly work with the ELAR teachers at the college and career magnet to support their instructional practices. As an instructional leader, it is my goal to develop educators who use innovative and researched based strategies to develop/deliver rigorous lessons that challenge their students to think outside the box while ensuring that all, regardless of learning style, are given equitable opportunity to learn. As a result of my experience teaching at the college and career magnet, I was able to identify the problem and gain better understanding of why it exists.

## CHAPTER IV

### RESULTS

The purpose of this record of study was to examine the relationship between performance on EBRW scores on the SAT and participation in dual credit, advanced placement, or on-level junior English coursework. In addition, the relationship between participation in a collegiate academy magnet program and SAT performance was also of interest as pertaining to enrollment in advanced placement or dual credit courses. The research questions addressed were as follows:

1. Taking into account prior English language arts and reading (ELAR) test performance, are there differences in SAT Evidence-based Reading and Writing (EBRW) scores between students, based on type of junior level English course in which they are enrolled?
2. Taking into account prior English language arts and reading (ELAR) test performance, are there differences in SAT Evidence-based Reading and Writing (EBRW) scores between students, based on enrollment in the magnet program?
3. Taking into account prior English language arts and reading (ELAR) test performance, are there differences in SAT Evidence-based Reading and Writing (EBRW) scores between students, based on race/ethnicity?
4. Is there a statistically significant difference in mean SAT Evidence-based Reading and Writing (EBRW) scores between students enrolled in dual credit

and advanced placement junior level English coursework, as well as the magnet program, compared to that of the median Nationally Representative Sample Percentile (NRSP) and SAT User Percentile-National (SUP-N)?

This chapter will begin with descriptive statistics of the characteristics of the final sample whose SAT scores will be subjected to further analysis. Then inferential statistical analysis, based upon an ANCOVA model, will provide results related to each of the first three research questions. An additional inferential statistical analysis, based upon a one-sample t-test, will provide results to the fourth research question.

### **Sample**

A total of 474 junior-level students were identified who had been administered both the PSAT test in October of 2015 and the SAT test in March of 2016. Since a key focus of this research involved the participation in dual credit, AP English Language, and on-level junior English coursework, any students not participating in one of these three courses were excluded from further analysis. There were a total of 16 students who were enrolled in either ELL English (10 students), on-level senior English (2 students), Fundamentals of English (1 student), AP Literature (1 student), or not enrolled in any English course (2 students). After delimitations were addressed, 458 students remained in the final sample.

Of the 458 students included in the analysis, 200 were enrolled in on-level English III, 140 were in AP English Language, and 118 in Dual Credit English coursework (4.1). Of the participants, 41% were Hispanic, 31% Black/African American, 20% White, and 8% other races. The distribution of economically

disadvantaged students differed between the three English courses, as 71% of students in on-level English were considered economically disadvantaged, while only 46% of students in dual credit were similarly classified. Distribution by gender also differed between the three courses, as 71% of dual credit students were female, while only 46% were female in on-level English. Finally, students enrolled in the magnet program were much more likely to be enrolled in advanced placement or dual credit coursework than those enrolled in on-level English (Table 4.1).

Table 4.1

*Demographics of Sample*

Group	On-Level	AP Language	Dual Credit	Total
<i>Race/Ethnicity</i>				
American Indian	3	0	0	3
Asian	7	8	7	22
Black	64	51	29	144
Hispanic	90	52	46	188
Multi-Racial	3	2	4	9
White	33	27	32	92
Total	200	140	118	<b>458</b>

Table 4.1 Continued

Group	On-Level	AP Language	Dual Credit	Total
<i>Economic Disadvantage</i>				
No	58	67	54	179
Yes	142	83	54	279
Total	200	150	108	<b>458</b>
<i>Gender</i>				
Female	92	78	84	254
Male	108	62	34	204
Total	200	140	118	<b>458</b>
<i>Magnet Enrollment</i>				
No	163	53	7	223
Yes	37	87	111	235
Total	200	140	118	<b>458</b>
<i>Limited English Proficient</i>				
No	193	140	118	451
Yes	7	0	0	7
Total	200	140	118	<b>458</b>
<i>Special Education</i>				
No	184	140	118	442
Yes	16	0	0	16
Total	200	140	118	<b>458</b>

Three interesting findings emerged from the data included in Table 4.1. First, the number of White, Asian, and Multi-Racial student populations were evenly distributed amongst the three courses. However, the number of Black and Hispanic student populations were predominately enrolled in the on-level English course. Second, the distribution of economically disadvantaged students differed between the three English courses, as 71% of students in on-level English were considered economically disadvantaged, while only 46% of students in dual credit were similarly classified. Third, the distribution by gender also differed between the three courses. The female student population was relatively evenly distributed between the three courses. However, the male population was predominately enrolled in on-level English coursework. In addition, 71% of dual credit students were female, while only 46% were female in on-level English.

### **Inferential Statistics Tests**

In this section results of statistical analyses used to address each of the research questions will be presented. In the first three cases the analyses performed was a one-way analysis of covariance (ANCOVA), using students' EBRW score from the SAT as the outcome variable, the EBRW score from the PSAT as the covariate, and the categorical variable pertaining to each research question (i.e. English course, magnet program enrollment, and race/ethnicity) as the independent variable. Descriptive statistics for PSAT EBRW and SAT EBRW scores for each of the groups are provided in Table 4.2. The final analysis performed was a one-sample *t*-test using the dual credit, advanced placement, and magnet student EBRW mean scores compared to the NRSP

and SUP-N sample median scores established by College Board. Results from the one-sample *t*-test are provided in Table 4.3.

Table 4.2

*Descriptive Statistics*

Groups	<i>N</i>	PSAT EBRW				SAT EBRW			
		<i>M</i>	<i>SD</i>	Skew	Kurt	<i>M</i>	<i>SD</i>	Skew	Kurt
<i>English Course</i>									
On-Level	200	414.1	81.6	0.48	0.28	440.1	82.2	0.37	0.35
Advanced Placement	140	464.6	84.2	0.25	-0.22	486.2	73.6	0.21	0.23
Dual Credit	118	542.5	77.5	-0.12	-0.24	557.6	64.4	0.18	-0.47
<i>Magnet</i>									
Not Enrolled	223	413.4	80.9	0.54	0.43	439.4	79.4	0.31	0.32
Enrolled	235	509.3	86.0	-0.02	-0.40	527.2	75.2	0.05	-0.16

Table 4.2 Continued

Groups	N	PSAT EBRW				SAT EBRW			
		M	SD	Skew	Kurt	M	SD	Skew	Kurt
<i>Race/Ethnicity</i>									
Black	144	427.1	92.9	0.44	0.14	451.6	84.8	0.07	0.22
Hispanic	188	460.3	83.5	0.15	-0.64	481.4	83.5	0.02	-0.57
White	92	523.3	97.3	-0.27	-0.60	543.2	81.9	-0.04	-0.52
Other	34	461.8	97.4	0.42	-0.11	481.5	76.4	0.38	0.57
Total	458	462.6	96.3	0.21	0.23	484.5	88.9	0.06	-0.25

*Note:* Skew - Skewness; Kurt – Kurtosis

### Research Question 1

Research Question 1 examined differences in SAT EBRW scores between students enrolled in on-level, advanced placement, and dual credit junior-level English courses. A one-way ANCOVA was utilized to identify whether differences in SAT EBRW scores, taking into account prior PSAT EBRW scores.

There are several assumptions that should be met when performing an ANCOVA. The assumption of independence of observations is generally met because students are only included in a single course-based group. However, it is unknown as to

whether or not students may have changed English courses during the school year, which may violate this assumption. A second assumption is that the dependent variable is normally distributed in each of the groups. Inspection of descriptive statistics (Table 4.2) suggests that the SAT scores are normally distributed, as the skewness and kurtosis appear to be within acceptable ranges. Inspection of z-scores for skewness and kurtosis (Field, 2005, p. 72) revealed that only the skewness of SAT scores for the on-level course was significant ( $z = 2.16, p = .015$ ), while all other z-scores were not significant. A Shapiro-Wilk test of normality was performed, which was not significant for AP,  $W(140) = .986, p = .177$ , or for dual credit,  $W(118) = .985, p = .203$ , but was significant for the on-level students,  $W(200) = .985, p = .027$ . Tests of normality, such as the Shapiro-Wilk are sensitive to sample size (Field, 2005), and it was assumed that the distributions of SAT scores were adequate to meet the normality assumption.

The assumption of homogeneity of variables across groups was assessed using Levene's test, which produced a significant result,  $F(2,455) = 9.94, p < .001$ , suggesting that variance in SAT scores is not equivalent across groups. Similar to the Shapiro-Wilk, Levene's test is known to be sensitive to sample size, and Field (2005, p. 98) suggests using a ratio of largest to smallest variance to check results of Levene's test. If the variance ratio is less than 2, then it is safe to assume the variances are equivalent. In this case the variance ratio was 1.63, which supported the assumption of equal variance for this analysis.

The assumption of equivalent regression slopes between the covariate and dependent variable (i.e. PSAT score and SAT score, respectively) was tested by

including an interaction term between the covariate and the grouping variable (English course) in the ANCOVA model. A significant interaction term suggests a violation of the assumption of equivalent slopes (Field, 2005). For this analysis the interaction term was not significant ( $p = .902$ ), thus the assumption of equality of slopes was considered to have been met.

The ANCOVA performed to address Research Question 1 compared SAT EBRW performance based on enrollment in one of three English courses using PSAT EBRW as the covariate. The analysis indicated a significant difference between the groups based on SAT EBRW scores,  $F(2,454) = 9.16, p < .001$ ; however, the effect size was small, partial  $\eta^2 = .039$ . A comparison of estimated marginal means indicated that dual credit students ( $M = 503.2, SE = 5.25$ ) had significantly greater scores than either AP students ( $M = 484.8, SE 4.31$ ) and on-level students ( $M = 473.1, SE 3.88$ ) at the PSAT EBRW mean score of 462.6. There was not a significant difference between scores of AP and on-level students. There was a strong relationship between PSAT and SAT score, partial  $\eta^2 = .542$ .

### **Research Question 2**

Research Question 2 examined the difference in SAT scores between students enrolled in the magnet program and those not enrolled. Inspection of z-scores for skewness and kurtosis of PSAT scores and results of Shapiro-Wilk tests suggested that the groups' scores were normally distributed. The variance ratio between the two groups was 1.13, which suggested that the assumption of homogeneity of variances was met. In

addition, there was not a significant interaction between PSAT scores and magnet program enrollment, which indicates homogeneity of slopes.

Results of the ANCOVA indicated that, taking into account PSAT EBRW scores, there was a significant difference in SAT EBRW scores between students who enrolled in the magnet program (estimated marginal  $M = 494.8$ ,  $SE = 3.60$ ) and those who were not enrolled (estimated marginal  $M = 473.5$ ,  $SE = 3.71$ ),  $F(1,455) = 14.95$ ,  $p < .001$ . The effect size was small, partial  $\eta^2 = .032$ .

### **Research Question 3**

Research Question 3 addressed any differences in SAT EBRW scores between students in four race/ethnicity classifications: Black/African American, Hispanic, White, and Other Races (including American Indian, Asian, Hawaiian/Pacific Islander, and Multiracial). While results of Shapiro-Wilk tests indicated that SAT scores for Black and Hispanic students may not be normally distributed, z-scores for skewness and kurtosis of these distributions were not significant, suggesting that the assumption of normality was likely met. The ratio between the groups with the largest and smallest variances was 1.3, which indicated that the assumption of homogeneity of variances was met. In addition, the assumption of homogeneity of slopes was met, due to the fact that the interaction between race/ethnicity groups and PSAT EBRW scores was not significant.

Taking into account PSAT EBRW scores, there was a significant difference in SAT EBRW scores between at least two of the four race/ethnicity groups,  $F(3,454) = 3.17$ ,  $p = .024$ , partial  $\eta^2 = .021$ . Inspection of estimated marginal means indicated that

there was a significant difference between SAT EBRW scores of White students ( $M = 499.4$ ,  $SE = 5.62$ ) and Black students ( $M = 477.2$ ,  $SE = 4.40$ ), but not between any other pairs of race/ethnicity groups, including Hispanic ( $M = 483.1$ ,  $SE = 3.762$ ) and Other Races ( $M = 482.1$ ,  $SE = 8.84$ ).

#### **Research Question 4**

Research Question 4 addressed comparing the means for the dual credit, advanced placement, and magnet program students against the two types of norms established by the College Board for the new SAT. The Nationally Representative Sample Percentile (NRSP) compares performance against expected average performance of juniors and seniors across the nation, regardless of whether or not they would have taken the SAT. The SAT User Percentile – National (SUP-N) compares performance against students likely to take the SAT in the junior or senior year (College Board, 2016b).

One-sample  $t$ -test was performed comparing the mean SAT EBRW scores for students enrolled in the dual credit English, advanced placement English, and the magnet program against published NRSP and SUP-N national norms closest to the 50<sup>th</sup> percentile. Table 4.3 includes the difference between the group mean and the standard (either 510 or 550, respectively) and the  $p$ -value reported by SPSS for the results of the one-sample  $t$ -test.

Table 4.3

*Results of One-Sample t-test*

Course/Program	N	EBRW Mean	NRSP (510)		SUP-N (550)	
			Mean Diff	p	Mean Diff	p
Dual Credit	118	557.6	47.6	< .001	7.6	.200
AP	140	486.2	-23.8	< .001	-63.8	< .001
Magnet	235	527.2	17.2	0.001	-22.8	< .001

*Note:* NRSP = Nationally Representative Sample Percentile (51st percentile); SUP-N = SAT User Percentile - National (52nd percentile)

The data indicate that students enrolled in dual credit junior level English outperformed the NRSP group at the 51<sup>st</sup> percentile, but there was not a significant difference with the SUP-N standard of 550, which was the 52<sup>nd</sup> percentile. The students enrolled in dual credit junior level English had higher scores on the SAT EBRW than the average junior or senior nationally, but perform at about the 50<sup>th</sup> percentile when compared to college-bound juniors or seniors who have taken the SAT. One would expect that these students, being that they are already enrolled in a college-level course, would exceed that of the performance of college-bound juniors or seniors.

Students scores (527.2) enrolled in the magnet program did exceed the NRSP standard (510), but fell significantly short of the SUP-N standard (550). Due to fact that students enrolled in the magnet program had to meet an entrance criterion of 70 percentile or higher in reading on the most recently administered standardized achievement test, one would expect these students to perform similarly on the SAT.

Furthermore, the mean performance by the students enrolled in advanced placement junior level English was statistically below that of either standard.

### **Summary**

In this chapter the descriptive statistics for the participants were presented as related to English course enrollment, participation in the magnet program, and race/ethnicity classifications and performance on the EBRW portions of the PSAT and the SAT. The results of the ANCOVA inferential statistical tests were presented, which indicated that statistically significant differences existed between SAT scores of students based on English course enrollment, magnet program participation, and race/ethnicity, although effect size were small in all cases. Meeting the assumptions of the analysis supported the results obtained through the ANCOVA. In addition, results of the one-sample *t*-test was presented, which indicated that the students enrolled in dual credit and the magnet program outperformed the NRSP group. However, the magnet program group fell significantly short of the higher SUP-N standard. The students enrolled in advanced placement junior level English performed the lowest and performed statistically significantly below that of either standard.

## CHAPTER V

### SUMMARY AND CONCLUSIONS

This chapter will summarize the record of study, data analysis procedures utilized to explore the research questions, explain the researcher's findings from the data analysis performed, and conclusions. The last section includes implications and recommendations for further study.

#### **Summary**

The purpose of this quantitative record of study was to explore the relationship between performance on EBRW scores on the SAT and participation in dual credit, advanced placement, or on-level junior English coursework. In addition, the relationship between participation in a college and career magnet program and SAT performance was also of interest as pertaining to enrollment in advanced placement or dual credit courses. With the introduction of magnet programs, such as a college and career magnet that includes a collegiate academy, there was potential that students enrolled in these programs would meet and/or exceed SAT criterion, as well as students enrolled in an advanced placement or dual credit course junior level English coursework. This quantitative record of study will help inform the district, campus, teachers, students, and parents about the relationship between enrollment in the magnet program and advanced junior level English coursework and performance on the SAT EBRW section. This could potentially increase enrollment in magnet programs and advanced courses, increasing the likelihood that students could earn college credit and/or admittance.

A quantitative approach was selected for this study as it involved collecting quantitative data in the form of student SAT EBRW scores and then explaining the quantitative results with an in-depth ANCOVA data analysis and one-sample *t*-test. The SAT EBRW scores were collected to determine whether the independent variable relates to the dependent variable. PSAT EBRW scores were used as a control for student ELAR performance at the beginning of the junior year. NRSP and SUP-N mean scores were used for comparison.

The participants in this study consisted of 474 students who were enrolled in a junior level English course at the research site and were administered the PSAT on October 15, 2015, and the SAT on March 2, 2016. Delimitations included the exclusion of special education and English language learners because of their identified academic learning support needs. By nature of their identifications, they are more likely to perform lower than students not participating in two academic support programs. After delimitations were addressed, the final sample consisted of 458 students. The research questions included were as follows:

1. Taking into account prior English language arts and reading (ELAR) test performance, are there differences in SAT Evidence-based Reading and Writing (EBRW) scores between students, based on type of junior level English course in which they are enrolled?
2. Taking into account prior English language arts and reading (ELAR) test performance, are there differences in SAT Evidence-based Reading and

Writing (EBRW) scores between students, based on enrollment in the magnet program?

3. Taking into account prior English language arts and reading (ELAR) test performance, are there differences in SAT Evidence-based Reading and Writing (EBRW) scores between students, based on race/ethnicity?
4. Is there a statistically significant difference in mean SAT Evidence-based Reading and Writing (EBRW) scores between students enrolled in dual credit and advanced placement junior level English coursework, as well as the magnet program, compared to that of the median Nationally Representative Sample Percentile (NRSP) and SAT User Percentile-National (SUP-N)?

The research questions were addressed through an in-depth ANCOVA data analysis and one-sample *t*-test. The ANCOVA inferential statistical tests indicated that statistically significant differences existed between SAT EBRW scores of students based on English course enrollment, magnet program participation, and race/ethnicity, although effect size were small in all cases. The one-sample *t*-test indicated that statistically significant differences existed between SAT EBRW scores of students based on dual credit, advanced placement and magnet program enrollment, compared to the NRSP and SUP-N samples.

## **Conclusions**

This record of study has revealed that students enrolled in a dual credit junior level English course had significantly greater SAT EBRW scores than those students enrolled in advanced placement and on-level English courses. However, the data indicate that students enrolled in dual credit had much greater PSAT scores than those enrolled in other English courses. So while there was a significantly greater mean score for the dual credit group of students, there is also another explanation, students enrolled in dual credit courses had higher scores overall going into the course. By using the PSAT as a covariate, the researcher was able to establish that there was a fairly strong correlation between PSAT and SAT scores and take into account pre-existing differences between students in terms of their ELAR performance. However, both the PSAT and SAT were administered within five months of each other; thus, a change in scores based upon enrollment in a particular course may be limited.

Likewise, students enrolled in the college and career magnet program had significantly greater SAT EBRW scores than students not enrolled in the magnet program. However, the students enrolled in the magnet program were already performing at higher levels indicating that magnet program enrollment had little effect on SAT EBRW scores.

The data suggest that the highest performing students are enrolling in dual credit, the next highest performing are students enrolling in advanced placement, and the lowest performing students are in the on-level coursework. While it is evident that the students enrolled in dual credit junior level English coursework outperform those in other junior

level coursework, their scores do not exceed the average performance of college-bound students as evidenced by the results of the one-sample *t*-test. The students enrolled in the magnet program did exceed the NRSP standard (510), but fell significantly short of the higher SUP-N standard (550). The mean performance by the students enrolled in advanced placement was statistically significantly below that of either standard.

One would assume that students enrolled in advanced coursework would outperform the national averages due to the nature of the course; however, the data suggest that the dual credit and advanced placement courses, as well as the college and career magnet program may not be addressing the level of rigor and skills needed to be successful on the SAT EBRW section.

Furthermore, the data indicate that there are still achievement gaps on the SAT EBRW section between White and Black/African-American students. Inspection of estimated marginal means indicated that there was a significant difference between SAT scores of White students ( $M = 499.4$ ,  $SE = 5.62$ ) and Black students ( $M = 477.2$ ,  $SE = 4.40$ ), but not between any other pairs of race/ethnicity groups, including Hispanic ( $M = 483.1$ ,  $SE = 3.762$ ) and other races ( $M = 482.1$ ,  $SE = 8.84$ ). The data suggest that the research site is meeting the needs of the White, Hispanic, and other races populations; however, the site is failing to address the needs of the Black/African-American students.

In conclusion, the district, campus, and key stakeholders could learn from Bourdieu, Anyon, and Kozol in order to address the cultural, economical, and gender disparities presented in this study. The research site needs to reflect upon their current policies and practices in order to “challenge federal and regional economic policies and

practices as one part of an overall plan to improve local educational opportunity” (Anyon, 2014 p. 170). In addition, the research site needs to create a supportive and trusting environment that provides students with “identity security” in order to challenge the stereotypical myths (Anyon, 2014). Furthermore, teachers at the research site need to receive training in order to effectively teach diverse populations, in hopes to utilize their classrooms to conduct critical, thought-provoking discussions about the issues their students face. As Anyon (2014) stated, “those of us in education who have social justice as a goal can play a crucial role in movement building for both educational and economic rights” (p. 171). The poor and non-white students at the research site need to understand the “codes of dominant cultural capital and be able to parse them” (Anyon, 2014, p. 173; Bourdieu, 1986). Administrators, teachers, parents, students, and community members need to explicitly recognize and acknowledge the fact that social change is necessary in order to reform current educational policies and practices.

### **Implications**

The implications of this record of study show that the school district may need to place emphasis on closing the achievement gap between White and Black/African American students on the SAT EBRW section. The numbers of White students are evenly distributed among the three course types, while Black/African-American students have a higher percentage in on-level and the lowest percentage in dual credit. It is recommended that the local administrators and key stakeholders explore ways to ensure culturally relevant curriculum and instruction, especially in junior level English courses. It is especially critical to address the achievement gap during the junior year due to the

fact that the school district pays for and administers the SAT exam on a regular school day during the spring semester of a student's junior year. Furthermore, local administrators and key stakeholders may want to assess the cultural and social context of the campus. By examining the culture and climate of the campus, administrators could gather information to better understand why Black/African American students are not enrolling in advanced courses and are not performing as well as other races/ethnicities at the research site.

In addition to the discrepancy between White and Black/African-American students, the data also suggest a gender gap. Approximately 71% of students enrolled in dual credit are female and approximately 56% of students enrolled in advanced placement are female. The data suggest the research site needs to explore why male students are not enrolling in advanced junior level English coursework.

Furthermore, the data imply that the needs of economically disadvantaged students are not being met. Students who are not indicated as being economically disadvantaged are relatively evenly distributed among the three course types. However, students who have been identified as economically disadvantaged have a higher percentage in on-level (71%) and the lowest percentage in dual credit (19%). The research site has been identified as a Title I campus, so the assumption is that these federal funds would be used to address the needs of these economically disadvantaged students; however, the data indicate otherwise.

### **Recommendations for Further Study**

The literature suggests that high schools change the climate to create a stronger college-attending culture and strengthen graduation requirements. This record of study supports this idea, but there is much to be done to improve dual enrollment and magnet programs. Recommendations for further study related to this topic are as follows:

1. Additional research is needed to explore the relationship between performance on the SAT Math section and participation in dual credit, advanced placement, or on-level math coursework.
2. Research is needed to study a larger sample size across multiple early college high schools and/or college and career magnet programs. While this record of study has a diverse population, including other programs would increase the generalizability of the results to a wider population.
3. According to this record of study, dual credit courses were predominately female. Further study of course enrollment, SAT scores, and gender bias is recommended.
4. According to this record of study, there was a significant difference in SAT EBRW scores between White and Black/African-American students. Further study of culturally relevant curriculum and instruction is needed to help better understand this gap.
5. A longitudinal approach to measure if the dual credit and AP students were able to attend four-year universities and graduate, without needing remedial coursework.

In retrospect, this quantitative record of study would have benefited from doing the following things differently:

1. Include a fifth research question to address differences in gender performance on the SAT EBRW section.
2. Add a qualitative design by including student perceptions and observations of the various junior level English courses, as well as collection of lesson plans to gain a better understanding of the curricular and instructional differences between the courses.
3. Go back to a time prior to potential enrollment in the various programs and select two matched groups based on race/ethnicity and performance on a related standardized assessment, such as the PSAT 8/9. Then the researcher could track these students over their early college high school careers to see if those who challenged themselves with higher level coursework (AP or DC) ultimately outperformed the students who opted for the on-level track. This would allow for a control of the starting point upon entry into the various programs, and if students are similar at the onset but different by the end of the junior year. By doing this, the researcher could establish some sort of causation argument.

## LITERATURE CITED

- ACT, I. (2005). What kind of test preparation is best? Issues in College Readiness. *ACT, Inc.*
- Adams, C. J. (2015). 2015 SAT, ACT scores suggest many students aren't college-ready. *Education Week*. Retrieved from <http://www.edweek.org/ew/articles/2015/09/09/2015-sat-act-scores-suggest-many-students.html?tkn=ORZF19blzScGPwN6tQV6Kov0nKNeRKw14zgH&print=1>
- Alert, P. (2005). Income of US workforce projected to decline if education doesn't improve. *National Center for Public Policy and Education*. Retrieved from [http://www.highereducation.org/reports/pa\\_decline/index.shtml](http://www.highereducation.org/reports/pa_decline/index.shtml).
- Amey, J., & Long, P. (1998). Developmental coursework and early placement: Success strategies for underprepared community college students. *Community College Journal*, 22(3), 3-10.
- Andrews, H. A., & Marshall, R. P. (1991). Challenging high school honor students with community college courses. *Community College Review*, 19(1), 47-51.
- Anyon, J. (1980). Social class and the hidden curriculum of work. *Journal of Education*, 162(1), 1-11.
- Anyon, J. (2014). *Radical possibilities: Public policy, urban education, and a new social movement*. New York, NY: Routledge.
- Atkinson, R. C., & Geiser, S. (2009). Reflections on a century of college admissions tests. *Educational Researcher*, 38(9), 665-676.

- Bailey, R., Hughes, K. L., & Karp, M. M. (2002). What role can dual enrollment programs play in easing the transition between high school and postsecondary education? Washington DC. In *Office of Vocational and Adult Education, US Department of Education. (US Department of Education Publication No. ED-99-CO0160.*
- Barker, C. (2004). *The Sage dictionary of cultural studies*. Thousand Oaks, CA: Sage.
- Barnes, W., Slate, J.R., & Rojas-LeBouef, A. (2010). College-readiness and academic preparedness: The same concepts? *Current Issues in Education, 13*(4). Retrieved from <http://cie.asu.edu/ojs/index.php/cieatasu/article/view/678/56>
- Betts, J., Kitmitto, S., Levin, J., Bos, J., & Eaton, M. (2015). What happens when schools become magnet schools? A longitudinal study of diversity and achievement. *American Institutes for Research*. Retrieved from <http://files.eric.ed.gov/fulltext/ED556800.pdf>
- Bojczyk, K., Rogers-Haverback, H., Pae, H., Davis, A., & Mason, R. (2015). Cultural capital theory: A study of children enrolled in rural and urban Head Start programmes, *Early Child Development and Care, 185*(9), 1390-1408.
- Boswell, K. (2001). State policy and postsecondary enrollment options: Creating seamless systems. *New Directions for Community Colleges, 2001*(113), 7-14.
- Bourdieu, P. (1986). The forms of capital. In J.G. Richardson (Ed.), *Handbook of theory and research in the sociology of education* (pp. 241-258). New York, NY: Greenwood Press. doi: 10.1002/9780470755679

- Bourdieu, P., & Passeron, J. C. (1979). *The Inheritors: French students and their relation to culture*. Chicago, IL: University of Chicago Press.
- Burns, H., & Lewis, B. (2000). Dual-enrolled students' perception of the effect of classroom environment on educational experience. *The Qualitative Report*, 4(1), 1-10.
- Callan, P.M., Finney, J. E., Krist, M. W., Usdan, M. D., & Venezia, A. (2006). *Claiming common ground: State policymaking for improving college readiness and success* (Report Number 06-1). San Jose, CA: The National Center for Public Policy and Higher Education.
- Campus (2016). Campus collegiate academy. Retrieved from <http://www.garlandidschools.net/page.cfm?p=2500>
- Carnevale, A., Rose, S., & Cheah, B. (2011). The college pay off: Education, occupations, lifetime-earnings. The Georgetown University Center on Education and the Workforce. Retrieved from <http://cew.georgetown.edu/collegepayoff>.
- Catron, R. K. (1998). The Virginia Plan for Dual Enrollment: A Historical Perspective. *Inquiry*, 2(1), 13-21.
- City-Data.com. (2015). Garland, Texas. Retrieved from <http://www.city-data.com/city/Garland-Texas.html>
- City-Data.com. (2015). Rowlett, Texas. Retrieved from <http://www.city-data.com/city/Rowlett-Texas.html>
- City-Data.com. (2015). Sachse, Texas. Retrieved from <http://www.city-data.com/city/Sachse-Texas.html>

- Cline, Z., Bissell, J., Hafner, A., & Katz, M. L. (2007). Closing the college readiness gap. *Leadership*, 37, 30-33.
- College Board. (2009). *College Board standards for college success*. Retrieved from <http://professionals.collegeboard.com/k-12/standards>. New York: College Board.
- College Board. (2016a). *AP course audit*. Retrieved from <http://www.collegeboard.com/html/apcourseaudit/faq.html>
- College Board. (2016b). *SAT understanding scores 2016*. Retrieved from <https://collegereadiness.collegeboard.org/pdf/understanding-sat-scores-2016.pdf>
- College Board. (2017). *AP English language*. Retrieved from <https://secure-media.collegeboard.org/digitalServices/pdf/ap/ap-course-overviews/ap-english-language-course-overview.pdf>
- Conley, D. T. (2005). *College knowledge: What it really takes for students to succeed and what we can do to get them ready*. San Francisco, CA: Jossey-Bass.
- Conley, D. T. (2007a). *Redefining college readiness*, Volume 3. Eugene, OR: Educational Policy Improvement Center. Retrieved from <http://www.epiconline.org/files/pdf/RedfiningCollegeReadiness.pdf>
- Conley, D. T. (2007b). The challenge of college readiness. *Educational Leadership*, 64(7), 23-39.
- Conley, D. T. (2008). Rethinking college readiness. *New England Journal of Higher Education*, 22(5), 24-26.

- Conley, D. T. (2012). A Complete Definition of College and Career Readiness. *Educational Policy Improvement Center (NJ1)*. Retrieved from <http://files.eric.ed.gov/fulltext/ED537876.pdf>
- Conley, D. T., Aspengren, K., Stout, O., & Veach, D. (2006). College Board Advanced Placement best practices course study report.
- Conway, A.R.A., Cowan, N., Bunting, M.F., Therriault, D.J., & Minkoff, S.R.B. (2002). A latent variable analysis of working memory capacity, short-term memory capacity, processing speed, and general fluid intelligence. *Intelligence, 30*, 163-183.
- Conway, A.R., Kane, M.J., & Engle, R.W. (2003). Working memory capacity and its relation to general intelligence. *Trends in Cognitive Sciences, 7*, 547-552.
- Daneman, M., & Hannon, B. (2001). Using working memory theory to investigate the construct validity of multiple-choice reading comprehension tests such as the SAT. *Journal of Experimental Psychology: General, 130*(2), 208.
- Davis, R. G. (1985). Organization for economic co-operation and development (OECD), *Educational Planning: A reappraisal*: Paris: OECD. 146-148.
- Dehn, M.J. (2015). *Essentials of working memory assessment and intervention*. Hoboken, NJ: Wiley.
- Delaino, T. (1990). Santa Fe Community College factbook, 1990-1991. Gainesville, FL: Statistical data. (ERIC Documentation Reproduction Service No. ED 325 195)

- DiMaggio, P. (1982). Cultural capital and success in school: The impact of status culture participation on grades of U.S. high school students. *American Sociological Review*, 47(2), 189-201. doi: 10.2307/2094962
- District ISD (2016). *District ISD Homepage*. <http://www.garlandisd.net/content/district-profile>
- Dumais, S. (2002). Cultural capital, gender, and school success: The role of habitus. *Sociology of Education*, 75(1), 44-68. doi: 10.2307/3090253
- Emmison, M., & Frow, J. (1998). Information technology as cultural capital. *Australian Universities Review*, 1, 41-45.
- Engle, R.W., Kane, M. J., & Thuholski, S.W. (1999). Individual differences in working memory capacity and what they tell us about controlled attention, general fluid intelligence, and functions of the prefrontal cortex. In A. Miyake, & P. Shah (Eds.), *Models of working memory: Mechanisms of active maintenance and executive control* (pp. 102-134). New York: Cambridge University Press.
- Fields, A. (2005). *Discovering statistics using SPSS*. London: Sage.
- Frey, M. C., & Detterman, D. K. (2004). Scholastic assessment or g? The relationship between the scholastic assessment test and general cognitive ability. *Psychological Science*, 15(6), 373-378.
- Frontline. (2014). A brief history of the SAT. Retrieved from <http://www.pbs.org/wgbh/pages/frontline/shows/sats/where/history.html>
- Galloway, J. (1994). Dual enrollment gets students where they want to go-only faster. *Vocational Educational Journal* 68, 13.

- Greenberg, A. R. (1988). High school students in college courses: Three programs. *New Directions for Community Colleges, 1988(63)*, 69-84.
- Greene, J. P., & Forster, G. (2003). Public High School Graduation and College Readiness Rates in the United States. *Education Working Paper No. 3*. Center for Civic Innovation.
- Haberman, M. (1991). Pedagogy of poverty versus good teaching. *Phi Delta Kappan, 73*, 290-294.
- Haberman, M., & Post, L. (1998). Teachers for multicultural schools: The power of selection. *Theory into Practice, 37(2)*, 96-104.
- Harvey, D. W., Slate, J. R., Moore, G. W., Barnes, W., & Martinez-Garcia, C. (2013). College readiness gaps: A review of the literature. *Journal of Education Research, 7(3)*.
- Hertberg-Davis, H., Callahan, C. M., & Kyburg, R. M. (2006). Advanced Placement and International Baccalaureate Programs: A. *National Research Center on the Gifted and Talented*. Retrieved from <http://files.eric.ed.gov/fulltext/ED505379.pdf>
- Hidden curriculum (2014, August 26). In S. Abbott (Ed.), *The glossary of education reform*. Retrieved from <http://edglossary.org/hidden-curriculum>
- IQ. (n.d.). In Merriam-Webster online. Retrieved from <https://www.merriam-webster.com/dictionary/iq>

- Jobs for the Future (2011, March). *College and career readiness for all Texas high school graduates*. An Issue Brief Submitted to the Communities Foundation of Texas. Boston, MA: Author.
- Kane, M.J., Hambrick, D.Z., & Conway, A.R. (2005). Working memory capacity and fluid intelligence are strongly related constructs: Comment on Ackerman, Beier, and Boyle (2005). *Psychological Bulletin*, *131*, 66-71.
- Kelly, P. J. (2005). As America becomes more diverse: The impact of state higher education inequality. *National Center for Higher Education Management Systems (NJI)*.
- King, B., Rasool, J., & Judge, J. (1994). The relationship between college performance and basic skills assessment using SAT scores, the Nelson Denny Reading test and Degrees of Reading Power. *Research and Teaching in Developmental Education*, *11*(1), 5-13.
- Kirst, M., & Venezia, A. (2001). Bridging the great divide between secondary schools and postsecondary education. *Phi Delta Kappan*, *83*(1), 92-97.
- Kozol, J. (1991). *Savage inequalities*. New York, NY: Random House, Inc.
- Kyburg, R. M., Hertberg-Davis, H., & Callahan, C. M. (2007). Advanced Placement and International Baccalaureate programs: Optimal learning environments for talented minorities? *Journal of Advanced Academics*, *18*(2), 172-215.
- Lammers, W., Onwuegbuzie, A. J., & Slate, J. R. (2001). Academic success as a function of the sex, class, age, study habits, and employment of college students. *Research in the Schools*, *8*(2), 71-81.

- Lamont, M., & Lareau, A. (1988). Cultural capital: Allusions, gaps and glissandos in recent theoretical developments. *Sociological Theory*, 6(2), 153-168.
- Lareau, A., & Horvat, E. A. (1999). Moments of social inclusion and exclusion race, class, and culture capital in family-school relationships. *Sociology of Education*, 72, 37-53. doi: 10.2307/2673185
- Lords, E. (2000). New efforts at community colleges focus on underachieving teens. *Chronicle of Higher Education*, 46(43).
- Magnet Schools of America (2013). What are Magnet Schools? Retrieved from <http://www.magnet.edu/about/what-are-magnet-schools>
- McKinsey & Company. (2009, April). *The economic impact of the achievement gap in America's schools*. Retrieved from [http://www.mckinsey.com/app\\_media/images/page\\_images/offices/socialsector/pdf/achievement\\_gap\\_report.pdf](http://www.mckinsey.com/app_media/images/page_images/offices/socialsector/pdf/achievement_gap_report.pdf)
- Moore, G., Slate, J. R., Edmonson, S., Bustamante, R., & Onwuegbuzie, A. J. (2010). High school students and their lack of preparedness for college: A statewide study. *Education and Urban Society*, 42(7), 817-838.
- Morath, M. (n.d.). *Career and college readiness: A state perspective*. Retrieved from <http://tea.texas.gov/WorkArea/DownloadAsset.aspx?id=25769825388>
- National Academy of Sciences, National Academy of Engineers, and Institute of Medicine of the National Academics. (2010). *Rising above the gathering storm, revisited: Rapidly approaching category 5*. Washington, DC: The National Academies Press.

- National Center on Education Statistics. (2011). Condition of Education 2011. Washington, DC: Institute of Education Sciences, U.S. Department of Education.
- National Center on Education and the Economy. (2008). *Tough choices or tough times: The report on the new commission on the skills of the American workforce revised and expanded edition*. San Francisco, CA: Jossey-Bass.
- National Commission on Excellence in Education (1983). *A nation at risk: The imperative for educational reform*. Washington, DC: U.S. Department of Education.
- National Math + Science Initiative (2017). *About NMSI*. Retrieved from <https://www.nms.org/AboutNMSI.aspx>
- Ndura, E., Robinson, M., & Ochs, G. (2003). Minority students in high school advanced placement courses: Opportunity and equity denied. *American Secondary Education*, 21-38.
- Newmann, F. M., & Associates. (1996). *Authentic achievement: Restructuring schools for intellectual quality*. San Francisco: Jossey-Bass.
- No Child Left Behind Act of 2001., Pub. L. No. 107-111, 115 Stat. 1425 (2002).
- Oakes, J. (2005). *Keeping track: How schools structure inequality* (2<sup>nd</sup> ed.). New Haven, CT: Yale University Press.

- Obama, B. (2009). Remarks of President Barack Obama – as prepared for delivery address to joint session of congress Tuesday, February 24th, 2009. Washington, DC: February 24, 2009. Retrieved from [http://articles.cnn.com/2009-02-24/politics/sotn.obama.transcript\\_1\\_global-economy-joint-session-president-obama?\\_s=PM:POLITICS](http://articles.cnn.com/2009-02-24/politics/sotn.obama.transcript_1_global-economy-joint-session-president-obama?_s=PM:POLITICS)
- OECD. (2010). PISA 2009 Results: What students know and can do: student performance in reading, mathematics and science. Retrieved from <http://www.oecd.org/dataoecd/54/12/46643496.pdf>
- Raines, J. (2006). College and social class: The broken promise of America. *Crosscurrents*, 56(1), 46-57.
- Roderick, M., Nagaoka, J., & Coca, V. (2009). College readiness: The challenge for urban high schools. *The Future of Children*, 19(1), 185-210.
- Rogers, K. B., & Kimpston, R. D. (1992). Acceleration: What We Do vs. What We Know. *Educational Leadership*, 50(2), 58-61.
- Salkind, N. (2014). *Statistics for people who think they hate statistics* (5<sup>th</sup> ed.). Thousand Oaks, CA: Sage.
- Schleicher, A., & Davidson, M. (2013). PISA 2012 Results: Country Note: United States. Retrieved from <http://www.oecd.org/pisa/keyfindings/PISA-2012-results-US.pdf>
- Silva, A. (2001). Cultural capital and educational attainment. *Sociology*, 35, 893-912.

- Slate, J. R., Jones, C. H., & Dawson, P. (1993). Academic skills of high school students as a function of grade, gender, and academic track. *The High School Journal*, 76(4), 245-251.
- Slate, J. R., Jones, C. H., & Harlan, E. J. (1998). Study skills of students at a post-secondary vocational-technical institute. *Journal of Industrial Teacher Education*, 35(2), 57-70.
- Slate, J. R., Jones, C. H., & Rodgers, B. (1997/98). Development, implementation, and evaluation of a study skills program. *Louisiana Education Research Journal*, 23(2), 51-68.
- Smith, D. (2007). Why expand dual-credit programs? *Community College Journal of Research and Practice*, 31(5), 371-387.
- Snider, J., & Willen, L. (2011, October 14). In global education race, U.S. is falling behind. *Higher Education*. Retrieved from <http://hechingerreport.org/in-global-education-race-u-s-is-falling-behind/>
- Standards for Success. (2003). *An introduction to work samples and their uses*. Eugene, OR: Center for Educational Policy Research, University of Oregon.
- Stanovich, K. E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly*, 360-407.
- Stanton-Salazar, R., & Dornbusch, S. (1995). Social capital and the reproduction of inequality: Information networks among Mexican-origin high school students. *Sociology of Education*, 68(2), 116-135. doi: 10.2307/2112778

- Texas Education Agency. (2009). *Texas college and career readiness standards: Standards for ensuring student success from kindergarten to college and career*. Austin, TX: Education Policy Improvement Center. Retrieved from [http://www.neisd.net/curriculum/SchImpro/ela/documents/ela\\_ccrs\\_out.pdf](http://www.neisd.net/curriculum/SchImpro/ela/documents/ela_ccrs_out.pdf)
- Texas Education Agency Division of Performance Reporting. (2017). Texas Academic Performance Report: 2015-2016 Campus. Retrieved from [http://www.garlandisd.net/sites/default/files/about/performance/documents/TAPR/TAPR\\_005\\_LCHS.pdf](http://www.garlandisd.net/sites/default/files/about/performance/documents/TAPR/TAPR_005_LCHS.pdf)
- Texas Higher Education Coordinating Board (2008a). *Dual credit*. Retrieved from <http://www.thecb.state.tx.us/reports/PDF/1514.PDF>
- Texas Higher Education Coordinating Board. (2008b). *Texas College and Career Readiness Standards*. Retrieved from <http://www.thecb.state.tx.us/download.cfm?downloadfile=71CF74E8-DF42-690A-5BAB2AFBD2B800E8&typename=dmFile&fieldname=filename>
- U.S. Department of Education. (2010, December). Secretary Arne Duncan's remarks at OECD's release of the program for international student assessment (PISA) 2009 results. Retrieved from: <http://www.ed.gov/news/speeches/secretary-arne-duncans-remarksoecds-release-program-international-student-assessment>
- U.S. Census Bureau (2015). Search Results. Retrieved from <http://www.census.gov/search-results.html?q=garland, tx>

- Varcoe, K., Peterson, S., Garrett, C., Martin, A., Rene, P., & Costello, C. (2001).  
Preparing teens to make financial decisions now and as adults. *Journal of Family  
and Consumer Sciences*, 93(2), 30-34.
- Varcoe, K., & Slate, J. R. (2009). A college money management center: What do  
students think? *International Journal of Educational Leadership Preparation*,  
4(1). Retrieved from <http://cnx.org/content/m20960/1.1/>
- Webb, J., Schirator, T., & Danaher, G. (2002). *Understanding Bourdieu*. London,  
England: Sage.
- Waldrip, D. (2013). A brief history of magnet schools. *Magnet Schools of America*.  
Retrieved from <http://www.magnet.edu/resources/msa-history>
- Wechsler, D. (1997). *Wechsler Adult Intelligence Scale—Third Edition*. San Antonio,  
TX: Psychological Corporation.
- Wiley, A., Wyatt, J., & Camara, W. J. (2010). *The development of a multidimensional  
college readiness index*. New York, NY: College Board. Retrieved July, 1, 2014.
- Yuan, K., Steedle, J., Shavelson, R., Alonzo, A., & Oppezzo, M. (2006). Working  
memory, fluid intelligence, and science learning. *Educational Research  
Review*, 1(2), 83-98.
- Zhao, Y. (2006). Are we fixing the wrong thing? *Educational Leadership*, 63(8), 28-31.
- Zhao, Y. (2009). *Preparing global citizens: Globalisation and education*. London,  
England: Specialist Schools and Academies Trust.

## APPENDIX A

DIVISION OF RESEARCH



**DATE:** September 19, 2016

**MEMORANDUM**

**TO:** James Laub  
TAMU - Texas A&M University - Not Specified

**FROM:** Dr. David Martin  
Chair, TAMU IRB

**SUBJECT:** Expedited Approval – Reference # 042761

---

**Study Number:** IRB2016-0636D

**Title:** Exploring the relationship between college readiness preparation and SAT scores in a college and career magnet high school in North Texas

**Date of Determination:**

**Approval Date:** 09/19/2016

**Continuing Review Due:** 08/15/2017

**Expiration Date:** 09/15/2017

**Documents Reviewed and Approved:** Only IRB-stamped approved versions of study materials (e.g., consent forms, recruitment materials, and questionnaires) can be distributed to human participants. Please log into iRIS to download the stamped, approved version of all study materials. If you are unable to locate the stamped version in iRIS, please contact the iRIS Support Team at 979.845.4969 or the IRB liaison assigned to your area.

**Document of Consent:**

**Waiver of Consent:** Waiver/alteration approved 46.116(c) or (d)

---

**Comments:**

- This IRB study application has been reviewed and approved by the IRB. Research may begin on the approval date stated above.
- Research is to be conducted according to the study application approved by the IRB prior to implementation.
- Any future correspondence should include the IRB study number and the study title.

---

Investigators assume the following responsibilities:

1. **Continuing Review:** The study must be renewed by the expiration date in order to continue with the research. A Continuing Review application along with required documents must be submitted by the continuing review deadline. Failure to do so may result in processing delays, study expiration, and/or loss of funding.

750 Agronomy Road, Suite 2701  
1186 TAMU  
College Station, TX 77843-1186  
Tel. 979.458.1467 Fax. 979.862.3176  
<http://rcb.tamu.edu>

2. **Completion Report:** Upon completion of the research study (including data collection and analysis), a Completion Report must be submitted to the IRB.
3. **Unanticipated Problems and Adverse Events:** Unanticipated problems and adverse events must be reported to the IRB immediately.
4. **Reports of Potential Non-compliance:** Potential non-compliance, including deviations from protocol and violations, must be reported to the IRB office immediately.
5. **Amendments:** Changes to the protocol and/or study documents must be requested by submitting an Amendment to the IRB for review. The Amendment must be approved by the IRB before being implemented.
6. **Consent Forms:** When using a consent form or information sheet, the IRB stamped approved version must be used. Please log into iRIS to download the stamped approved version of the consenting instruments. If you are unable to locate the stamped version in iRIS, please contact the iRIS Support Team at 979.845.4969 or the IRB liaison assigned to your area. Human participants are to receive a copy of the consent document, if appropriate.
7. **Post Approval Monitoring:** Expedited and full board studies may be subject to post approval monitoring. During the life of the study, please review and document study progress using the PI self-assessment found on the RCB website as a method of preparation for the potential review. Investigators are responsible for maintaining complete and accurate study records and making them available for post approval monitoring. Investigators are encouraged to request a pre-initiation site visit with the Post Approval Monitor. These visits are designed to help ensure that all necessary documents are approved and in order prior to initiating the study and to help investigators maintain compliance.
8. **Recruitment:** All approved recruitment materials will be stamped electronically by the HRPP staff and available for download from iRIS. These IRB-stamped approved documents from iRIS must be used for recruitment. For materials that are distributed to potential participants electronically and for which you can only feasibly use the approved text rather than the stamped document, the study's IRB Study Number, approval date, and expiration dates must be included in the following format: TAMU IRB#20XX-XXXX Approved: XX/XX/XXXX Expiration Date: XX/XX/XXXX.
9. **FERPA and PPRA:** Investigators conducting research with students must have appropriate approvals from the FERPA administrator at the institution where the research will be conducted in accordance with the Family Education Rights and Privacy Act (FERPA). The Protection of Pupil Rights Amendment (PPRA) protects the rights of parents in students ensuring that written parental consent is required for participation in surveys, analysis, or evaluation that ask questions falling into categories of protected information.
10. **Food:** Any use of food in the conduct of human research must follow Texas A&M University Standard Administrative Procedure 24.01.01.M4.02.
11. **Payments:** Any use of payments to human research participants must follow Texas A&M University Standard Administrative Procedure 21.01.99.M0.03.
12. **Records Retention:** Federal Regulations require records be retained for at least 3 years. Records of a study that collects protected health information are required to be retained for at least 6 years. Some sponsors require extended records retention. Texas A&M University rule 15.99.03.M1.03 Responsible Stewardship of Research Data requires that research records be retained on Texas A&M property.

This electronic document provides notification of the review results by the Institutional Review Board.