

The Effect of an SAT Prep Course on SAT Scores at a Low Income Urban School

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## **Abstract**

The purpose of this study is to determine the effect that participation in a school-based SAT preparation course has on the SAT scores of 11<sup>th</sup> grade students compared to the SAT scores of 11<sup>th</sup> graders who do not participate in an SAT preparation course. The study uses a causal comparative design which consisted of an intervention and non-intervention group. 11<sup>th</sup> grade students who had a 2.0 GPA and fewer than ten absences in a semester were in the intervention group, or SAT Prep course. Students in the intervention group received direct instruction in SAT preparation. SAT scores from both groups were compared. There were significant gains in test score means for students in the intervention group; however, further research should be considered.

# CHAPTER I

## INTRODUCTION

### Overview

Today's educational climate encourages higher education for all students as the most likely path to personal success and economic independence. Students are advised of the need for supplemental test preparation skills in order to meet with success on the required college entrance exams such as the Scholastic Aptitude Test (SAT). Since schools, motivated by evolving employment markets and social demands, are advocating for a college plan for more students than ever before, the need for readiness is becoming more quantified. The College Board predicts that during the 2016-2017 school year, over 800,000 students will participate in SAT School Day, asserting this opportunity helps students get on the path to college. As federal and state legislation evolves, requiring student readiness and school accountability to be demonstrated by an assessment, more districts are looking to established tests such as the SAT. The Maryland General Assembly, in passing the College and Career Readiness and College Completion Act, allowed school districts to demonstrate individual readiness through SAT scores.

Because the stakes are so high, schools and stakeholders are examining ways in which the SAT can be less of a barrier to college enrollment. Test preparation continues to be privatized, and for many high school students a private tutor or private course such as Kaplan or Princeton Review remains a desired option (Buchman, Condron, & Roseigno, 2010). However, the publishers of the SAT, perhaps in an effort to distinguish the SAT from the American

College Testing (ACT), another standardized college entrance exam and/or in an effort to encourage diversity and merit, have sought to make test preparation both equitable and accessible. In announcing the College Board's partnership with Khan Academy, then president d Coleman asserted in a College Board statement the College Board's "renewed commitment to delivering opportunity." Test preparation would now be free and available online. In addition, Coleman announced that every income-eligible student who takes the SAT will receive four fee waivers to apply to college (College Board, 2014). These measures taken, by the College Board, are embraced by many public school districts who see this move as an outreach toward equity and support of schools' vision and mission statements.

In an effort to counter the inequities that access to private SAT tutoring poses, public schools are developing their own in-house curriculum that encourages test preparation. Most schools do so seeking to close the achievement gap that persists across the country (Anderson, 2010). Whether the gap is measured by geography, race, socioeconomics, or gender, challenges persist in preparing all students for college readiness. Closing the achievement gap when it comes to SAT scores remains problematic. When in-school preparation is available, extraneous factors such as motivation and peer pressure (Bursztyrn & Jensen, 2015) must be considered. The goal of in-school test preparation is to have equitable resources available to all students. This study seeks to examine the effect of an SAT Prep course on SAT scores in a public school setting.

### **Statement of the Problem**

The purpose of this study is to determine the effect that participation in a school-based SAT preparation course has on the SAT scores of 11<sup>th</sup> grade students compared to the SAT scores of 11<sup>th</sup> graders who do not participate in an SAT preparation course. An evaluation of the study's findings can help to inform policy and school level decisions.

### **Hypothesis**

The null hypothesis states that there will be no difference in the SAT scores of 11<sup>th</sup> grade students participating in an SAT school-based preparation class as compared to 11<sup>th</sup> grade students not participating.

### **Operational Definitions**

The independent variable is the type of intervention: the participation in a school-based SAT preparation class by 11<sup>th</sup> grade students is the *intervention group*. This group participated in a semester SAT class prior to the SAT test. The data for the *non-intervention group* comes from the remaining 11<sup>th</sup> graders who do not take the SAT preparation class. The dependent variable for this study is the SAT scores from the April 5, 2017 school-based test administration.

### ***Other***

For the purposes of this study, the term “other” refers to an ethnic demographic that includes students of Middle Eastern heritage or those who self-identify as more than one race or “other.

### ***PSAT/NMSQT***

The Preliminary Scholastic Aptitude Achievement Test/ National Merit Scholarship



Qualifying Test (PSAT/NMSQT) is administered by the College Board as a predictive measurement that students and schools can use to prepare for the SAT. In addition, students who score in the top percentile can achieve National Merit Scholar status and be eligible for scholarships through the College Board. This test is given only in October. Schools can elect to administer it to 10<sup>th</sup> and 11<sup>th</sup> grade students, but only 11<sup>th</sup> grade students are eligible for National Merit Scholarship.

### ***SAT***

The **SAT I: Reasoning Test** is administered by the College Board to students who register to take it. It is given several times throughout the school calendar year in registered test centers, typically public or private schools. Yet, districts that elect to do so, can administer the SAT on a selected date to the 11<sup>th</sup> grade class. Districts are obligated to pay the cost for the students who do not qualify for the fee waiver (Fensterwald, 2016). Many colleges, including most competitive colleges, require SAT scores as part of the admission process. The newly redesigned SAT (College Board, 2015) has two required sections, Evidence-Based Reading and Writing, Math, and an optional essay section. The test is approximately three hours in length with an additional 50 minutes for the optional essay.

### ***SAT Prep Course***

For the purpose of this study, the term ***SAT Prep Course*** will refer to a public school-based semester-long class. The class will consist of two sections, a Math and a Reading section, each lasting a quarter and taught by a Math and English teacher, respectively. In order to have successfully completed the course, a student must pass with a C or higher and have fewer than 10 absences. For the purpose of this study, only students enrolled in the Fall 2016 semester classes will be part of the intervention group.

### ***SAT Scores***

The newly redesigned SAT will return to a score of 1600, 800 possible points for the Evidence-based Reading and Writing section and 800 points for the Math section (College Board, 2016). The score range for each section is 200-800 points. The essay is scored on a separate rubric and will not be figured into the results of the study

## **Chapter II**

### **REVIEW OF THE LITERATURE**

The following review of the Literature focuses on the presentation of the history of the SAT and its role in today's college admissions process, a discussion of the achievement gap as it pertains to students' test scores, and the role of interventions in SAT readiness. Section one focuses on the evolution of the test as a measurement of college readiness as well as current controversies regarding equity and access. Section two explores the ways in which the makers of the test, the College Board, have responded to these criticisms with various attempts at closing the achievement gap through ancillary programs and test preparation. The third section examines a variety of interventions that private and public schools develop and students participate in. The final section provides a summary.

#### **The SAT and the College Admission Process**

The SAT, a standardized assessment of reasoning skills, as a rite of high school passage and as an entry card into the university system is so engrained in American Society that few can recall a time when this test was not significant in the lives of high school students. Every year millions of American students take this exam at least once in an effort to seek admission at a college or university. Whereas European and Asian countries have standardized exit exams from secondary schools, the closest thing the United States may have to a national exam is indeed the SAT. Although there are alternatives to the SAT, such as the ACT, and more colleges are participating in a grass root opt-out movement, the SAT remains a standard bearer for students' post-secondary hopes and dreams. It is precisely the singular importance of this standardized

test that invites critical reflection not only on its relevance today, not only on its potential for bias, but also on the methods by which the test can be prepared for by all students, regardless of socioeconomic status. The SAT can be evaluated as a barrier to equity or as a bridge.

The SAT has been revised many times throughout its history. Buchmann, Condrón, & Roscigno (2010) argued that the test today is not at all what its creators intended. When the test was first created in 1926, fewer students attended college and those who did were wealthier, White, and male. “Proponents maintained that the test would level the playing field and reduce the importance of social origins for access to college” (p. 439). Harvard became the first university to require the SAT in 1935, and others soon followed. In its own historical perspective of the SAT, the creator and proprietor of this test the College Board, acknowledges that the early test, although designed as a reasoning test measuring only a student’s ability to think critically, contained test item biases that were ultimately corrected for and eliminated (Lawrence, Rigol, Van Esson & Jackson, 2003). For example, in an early question type known as a paragraph reading, test-takers were asked to identify the portion of a paragraph that interfered with the paragraph’s intent. Frequently the choice was an errant verb whose meaning contradicted the reading. However by 1945, the College Board acknowledged that a paragraph about William the Conqueror is better understood for meaning by one who has some working knowledge of English History. Another humorous example by today’s more egalitarian standards is the analogy question that asked test-takers to recognize the relationship between an oarsman and his regatta. Today, the College Board argues that earlier emphases on speed, memorization, and prior knowledge have been reduced if not eliminated. According to Lawrence, et al. (2003), “The 1994 redesign of the SAT took seriously the idea that changes in

the test should have a positive influence on education and that a major task of students in college is to read critically” (p. 6). These more recent modifications have emerged as colleges have demanded that the test more closely mirror real world applications of critical thinking. The College Board continues to revise the format and content of the SAT and continues to be met by critics who assert that the test’s origins as an intelligence test define it as a barrier to success for many underrepresented populations.

In addition to revising content and format, the College Board has committed to improving access and equity. The College Board provides fee waivers for low-income students and encourages relationships with public school districts in which students can test at their home school without paying for the test. Test preparation used to be privatized and costly; the College Board sold its own test prep books and delivered its test prep services through an expensive online interactive tutorial. By 2015, as the SAT underwent its latest and perhaps most significant revision, the College Board fully committed to providing test prep services for all students free of charge when it announced its partnership with the Khan Academy (2014) and made its practice tests, videos, and tips available to anyone with internet access.

Despite the availability of test prep materials, performance on the SAT remains uneven. As more students, spurred on by their high schools and the reality of the job market, are taking the SAT and making plans to attend college, scores are declining. In 2012, only 43% of college-bound seniors were college-ready based on these students’ SAT scores. This percentage was consistent with the performance of the class of 2011 (Hispanic outlook in higher education, 2012). Because many researchers agree with the College Board that performance on the SAT is predictive of success in college (meeting the established benchmarks indicate a 65% likelihood

of achieving a B- or higher grade point average during the student's freshman year), educators continue to explore ways in which SAT success can be prepared, coached, drilled, and practiced for.

### **The Role of the PSAT and Advanced Placement Classes in Closing the Achievement Gap**

Many stakeholders in education are concerned that traditionally underserved populations are unprepared for the rigors of the SAT. In addition to the SAT Reasoning Test and the SAT Subject tests, the College Board also provides the PSAT and Advanced Placement exams. The PSAT, the Preliminary Scholastic Aptitude Test, is frequently administered by public high schools in 10<sup>th</sup> and 11<sup>th</sup> grades and is frequently considered a "practice" for the SAT. Both of which the College Board argues are integral to SAT preparation. An earlier report published by the Hispanic Outlook in Higher Education (2010) reveals that students who took the PSAT before taking the SAT had a higher combined score of 146 points. Hispanic students had a similar boost of 143 points by first taking the preliminary test. Minority participation in the SAT has increased: 41.5% of test-takers from the class of 2010 were minorities; from 2000-2010, minority participation in the SAT grew 78.3%. This good news is tempered by disparities in scores between populations of our society. This disparity has come to be known as the achievement gap.

Because the SAT is defined by its creators as an "aptitude" test, it should reflect a student's ability to learn. Any achievement gaps between racial, gender, or socioeconomic groups present troubling implications for the proponents and critics of the test. As minority participation increases, consideration of score gaps increases as well. Because White and Asian

students outperform Black and Hispanic students, and wealthier students outperform students of lower socioeconomic status, the school's role in preparing all of our students for this admission test has become central to society's debate on the necessity of higher education. Anderson (2010) examined the factors that impact the ethnicity gap in SAT scores and identifies four: student characteristics, family characteristics, school-based characteristics and socio-cultural factors. Anderson asserted that the student academic characteristics (grade point average, coursework) have the largest impact on SAT scores. The argument would logically ensue that to improve students' chances of success on the SAT, they need to take more rigorous coursework and get better grades.

In many schools, rigorous coursework has come to be defined by participation in Advanced Placement (AP) classes. Originally a small elite program for only the most successful students, the AP program has expanded its mission to increase diversity and representation (Richardson, Gonzalez, Leal, Castillo & Carman, 2014). It is the structure of the AP program, in addition to its rigor, that most benefits college-readiness. Richardson's, et al study looked at students from two diverse school districts and AP placement based on students' PSAT scores. Again, the presence of ethnicity and socioeconomic status as significant factors in scores is troubling considering the overwhelming conclusion by Anderson and others that rigorous coursework leads to improvement on SAT scores. Parks and Beck (2015) found that students in larger high schools with more AP options were more likely to participate in private SAT prep study. However, Whites were the only group for whom a high percentage of AP participation predicted higher SAT scores. The limitations of these data are multifarious. Students' abilities to succeed in the more rigorous coursework may be impacted by the other factors, particularly

family and socio-cultural factors. In order to counteract the factors that schools have no control over, programs that assist first-generation college students have taken on an increasingly significant role in secondary education.

One such program is the Harlem Educational Activities Fund or HEAF (Stern, 2010). Established in 1989 with the goal of providing educational opportunities to minority students in New York City, HEAF uses a multi-pronged approach to get its participants, high-potential minority students, in colleges and keep them there. The program has an SAT Prep component by which HEAF claims that 100% of its students gain 100-150 points on the 2400 point SAT. Although HEAF touts its success stories- students who score in the 1200s on the SAT- such increases come with additional supports to the SAT Prep classes. Students begin in middle school and are “immersed in academic preparation and leadership programs” (Stern, 2010) in order to strengthen skills and increase rigor. These school characteristics that Anderson (2010) described as having the potential to positively impact students’ SAT scores include the quantity and quality of teacher-student interactions and peer interactions. The urban-based HEAF program is akin to larger national programs such as Achieving Via Individual Determination (AVID), which also aim to increase underserved populations’ representation in college enrollment. In both programs, SAT Prep is integral to both mission and function. Familiarizing students with the test and increasing student coursework rigor, whether through PSAT testing, AP participation, or SAT Prep class, has been identified as essential to meeting the benchmarks of college readiness as established by the College Board.

Despite current trends towards SAT readiness opportunities for all students, issues with equity persist. Critics who question the “fairness” of such a gate-keeper to college



admission have pointed out that inequity exists not just within racial and ethnic populations but geographic ones as well. Hermann, Huffman, Anderson and Golden (2013) examined a student population of rural high school students from agriculturally intensive and socioeconomically distressed counties in North Carolina and compared their SAT scores to those of another population in the same year, students from North Carolina's urban Research Triangle Park (RTP). The researchers found a strong correlation between the socioeconomic status of rural high school students from agriculturally intensive areas and their SAT scores. The disparities in socioeconomic status are not only applicable to urban communities with a high concentration of minority populations. The data from this study demonstrated that students from rural counties exhibited significant score deficits on their SATs in comparison to urban students from the nearby counties of the RTP. The researchers concluded that this "raises a severe challenge for land grant universities to carry out their original mission to 'teach agriculture, military tactics and the mechanical arts...so that members of the working class could obtain a liberal, practical education'" (p. 48). State schools that receive funding have an imperative to demonstrate that its applicants have equal access to educational equity. The score deficits which prohibit admissions "pose a direct threat to the future development of agriculture across the U.S.A." (p. 49). Programs such as the ACT Supplemental Preparation in Rural Education (A.S.P.I.R.E.), through the Cooperative Extension System of land-grant institutions, seek to bridge the score gap for rural high school students much as HEAF has for a select population of New York City students and AVID has for many suburban students.

### **The Role of Interventions in SAT Readiness**

Traditionally, students who score poorly on the SAT have been relegated to less selective

schools with a less academically distinguished population. While the goal of admitting a wider and more diverse body of college students is admirable, retaining them is crucial. In a study that sought to demonstrate the role of college curricular support for at-risk college freshmen, Marsh, Vandehey, and Diekhoff (2008) conducted a study that demonstrated that participation in one such class was as effective in predicting student performance as SAT scores. Marsh, et al state that the solution to at-risk students disheartened by first-semester grades is to identify these students prior to the end of the semester and implement academic services by midterm. A gateway course, in this case General Psychology, “was predictive of GPA...and the predictive power of General Psychology test scores equaled or surpassed that of SAT/ACT scores” (252). While this intervention is worthy of further study, ideally more students can be readied by intervention that occurs within their high school years and curriculum.

The questions regarding high school interventions include: who benefits from SAT preparation? How does motivation impact the benefits? Are some preparations more successful than others? It is helpful to consider SAT Prep as a type of shadow education, defined by Buchmann, et al (2010) as “educational opportunities, such as tutoring and extra classes, occurring outside of the formal channels of an educational system that are designed to improve a student’s chances of moving through the allocation process” (p. 436). The global prevalence of shadow education and its increasing privatization has led to the United Nations Educational Scientific and Cultural Organization expressing the concern for increasing social stratification (UNESCO, 2010 as cited by Buchmann, et al). The prevalence of opportunity in the form of social capital among the advantaged is only increased by private SAT preparatory programs such as Princeton Review, Kaplan, and other private tutoring. These for-profit companies frequently

advertise SAT score increases of more than 100 points. In fact Princeton Review pledged that its “Ultimate” classroom students averaged a score improvement of 255 points (as cited by Alon, 2010). This cultural capital born of privilege and resource is difficult to translate to public educational opportunities, but by expanding the concept of shadow education to include such free and public offerings, and comparing the various outcomes, Buchmann’s study revealed SAT score benefits primarily for students who participate in traditional shadow education even when controlling for factors such as prior academic achievement and parental involvement. Compared to using no preparation, participation in a high school course raised scores by about 26 points; however, using a private tutor raised scores by an average of 37. These are small gains; however, gains nonetheless, considering that students who engaged in no preparation did not improve their test scores. Buchmann, et al point out that minority students engage in test preparation at a greater rate than do White students and concludes that parental and institutional knowledge of the achievement gap may be the motivating factor. Park and Becks’ (2015) study of the social context of test preparation examined the participation rates of Asian American students who participated in private SAT prep and found significant differences within Asian ethnic groups. Chinese-Americans had a relatively high rate of private SAT preparation (31.8%), yet participation among lower-income Korean Americans in private SAT prep (46.7%) was surprisingly high. What motivates students to avail themselves of services, public or private, is an important consideration.

In response to this study, Alon (2010) pointed out that what Buchmann, et al observed: African-American students engage in test prep more than other Whites or other ethnic groups, but Alon questioned the limitations of the BCR (Buchmann, Condon & Rascigno, 2010)

conclusions. Alon argues that more Black students engage in test preparation due to expectations and aspirations driven by “preferential treatment for under-represented minorities at elite institutions” (p. 468). Alon interprets the BCR data, particularly where parental income yields divergent results, to suggest that minorities are motivated to engage in SAT preparation due to the belief that multiple forms of preparation yield sizable gains in test scores. The finding “that whites and Asians who attend very selective schools used test preparation more than those at less selective institutions (while the opposite is true for blacks and Hispanics” leads to the conclusion that “race-sensitive admissions” cultivate post-secondary aspirations, which in turn boosts motivation for SAT preparation. The role of youth perception regarding opportunity is the subject of additional studies (p.471).

An important discussion in the role of the SAT in the high school/college experience in an increasingly diverse public education system is the superior performance of Asian Americans, an ethnic minority, on the SAT. Anderson (2010) generalized that “African American students have the lowest scores, with Hispanic/Native American students higher, and Asian American students even higher” (p. 3). The director of Harlem’s HEAF program agreed, “If you look at the disparity in achievement between Black and Latino students compared to their White and Asian counterparts, we haven’t done of good job of educating them effectively” (as cited by Stern, 2010, p. 2). Richardson, et al. (2014) described the statistics as a result of this score-gap: as of 2009, the national college completion rate for 25-34 year olds is 41%; 69.1% of Asian Americans have earned an associate’s degree or higher, whereas only 29.4% of African Americans have. The achievement gap becomes a more difficult conversation when the gap exists among ethnic minorities.

In order to discover what helps to engage students in SAT preparation, researchers have investigated everything that influences motivation from culture to peer pressure. Park (2012) examined the role of the community in SAT preparation in the Asian American community, particularly the role of community-based privatized SAT prep centers. Park asserted that these centers are “fixtures of the ethnic economy” (p.627) especially in Chinese and Korean neighborhoods, where they are as common as “restaurants, churches, and karaoke joints” (p 629). They are also not necessarily a function of socioeconomic status: as stated earlier, low-income Korean-American students have higher rates of SAT prep participation than do low-income Chinese-American students. Park examined what factors may lead one sub-ethnic group to higher rates of preparation than another. The demographic traits that are associated with lower-income Korean-American students seeking out SAT prep more actively than lower-income Chinese Americans have to do with the homogeneity of Korean-American culture and the prevalence of the church in the community. One explanation may lie in the traditional role of immigrant churches which act as a conduit for the delivery of information necessary for achieving American success through education. The churches reinforce the values that brought immigrants to these communities. The actualization of these values can be found in “the broader ethnic economy in which SAT prep centers exist (Park, p. 634). Park cites a study by Teranishi, et al (2004) that found that the percentage of low-income Korean American students taking an SAT prep class exceeded the rate for other Asian American subgroups of all income levels “with the exception of high-income Chinese Americans” (p. 631). Overall findings in this study emphasize the role affluence plays in Chinese Americans’ decisions to access community-based

SAT prep compared to religious involvement for Korean Americans. These findings can assist educational reform in determining how to best reach out to other demographics' inherent motivations and values.

In some ways, Latino culture and Korean American culture are similar: both value the role of the church in community cohesiveness and both adhere to traditional family values. Hispanics are a growing population of college-bound students. In 2010, the College Board reported that Hispanic students comprised 14.4% of the total number of SAT test-takers, a steady increase from the previous year's cohort (Hispanic outlook in higher education). In a study conducted by Bursztyn and Jensen (2015), low-performing, lower income Los Angeles high school students were offered complimentary access to a commercial, online SAT prep course from a reputable company. Researchers examined whether or not peer pressure impacts students' sign-up rates. The courses were valued at \$260 and made available in both Honors and non-Honors classes of predominately (96%) Hispanic students. Course sign-up was conducted in both settings with one of the following two options:

“Your decision to sign up for the course will be kept completely private from everyone, except the other students in the room.”

referred to as the public sign-up, or:

“Your decision to sign up for the course will be kept completely private from everyone, including the other students in the room.”

referred to as the private sign-up (Bursztyn & Jensen, p. 9).

In these socioeconomic and ethnic homogeneous settings, the role of peer pressure on choosing to participate in SAT prep was dependent on the privacy assurance for certain students. Honors classes showed a small difference between public (93%) and private (92%) sign-up; whereas non-Honors classes had a higher private sign-up rate (72%) than public (61%).

Much like Park's 2012 study of low-income Korean Americans, which demonstrated the motivating force of community forces, Bursztyn & Jensen's (2015) study highlighted the relationship between conformity and the locally prevailing norms. Classroom culture drives student choice about their future and peer pressure can either work positively or negatively. This supports Anderson's (2010) assertion that student academic factors support student success. Bursztyn and Jensen consider the possibility that the low sign-up rate for some students might be influenced by their perception that this was a "low-stakes decision (p. 19). The fact that the course was free seems to reinforce Grodsky's (2010) response to the research of BCR (2010) in which he argues that the only true shadow education exists outside the provenance of schools. Anything else, he asserts, is "no more a part of shadow education than AP Calculus" (p. 466). Grodsky argues that the barriers that exclusionary shadow education poses are what make it so valuable and what leads to the more significant SAT score gains. The role of family income, parental education, community support all contribute to participation in shadow education.

### **Summary**

SAT Prep as a means to influence students' SAT scores has mixed interpretation and results. Public education in this country has a moral imperative to reduce and remove barriers inherent in socioeconomic status, geographical locale, and ethnicity which compromise students'

college readiness. The College Board has a moral imperative to provide access to study guides, tutorials and practices that take away any suggestion of classism and elitism for a gatekeeper exam. The difficulty inherent in these imperatives comes in translating these efforts into the public arena in ways that are validated by the public stakeholders, students most at risk. If private shadow education is more prized than publically available options, if opportunity is influenced by social sanctions, then the status quo of the college admissions process will continue. Indeed, there is a lack of quantitative studies as to the effectiveness of public school-based SAT preparation courses. Researchers need to determine what factors make SAT prep classes effective and how to adapt that effectiveness into public school system policy.



## **CHAPTER III**

### **METHODS**

#### **Overview**

The study was determines the impact of participation in a school-based SAT Prep course on students' SAT scores. The hypothesis was that there would be no measurable difference in the SAT scores of students participating in the school-based SAT Prep course as compared to students not participating in this course.

#### **Design**

The study uses a causal comparative design. The intervention group consisted of randomly selected students who had been scheduled to take the school's SAT Prep course. The non-intervention group consisted of all other 11<sup>th</sup> graders who took the SAT but did not participate in the Fall 2016 course. The school's Guidance Department registered students for this course if they had a minimum of a 2.0 cumulative grade point average in their 10<sup>th</sup> grade year. Students did not need to meet any other criteria. In addition, a student could be enrolled in the class without the minimum grade point average if the student requested the course or if the student's schedule required an elective fulfillment. The students' participation in the Fall semester of SAT Prep, one quarter of Verbal instruction and one quarter of Math instruction, began in late August 2016 and ended in early January 2017. The intervention spanned the eighteen week semester. Students' attendance and quarter grades were monitored throughout. The SAT was administered to all participants in the intervention group and non-intervention group on April 5, 2017. A t-test was conducted to determine if there was evidence of statistically significant differences between the intervention and non-intervention groups' test scores.

## Participants

The participants in this study are 11th grade students who attend a comprehensive public high school in a Maryland suburb. At the time of this study, enrollment at the school was 1,496 which is approximately 50 students over capacity. According to the US Census (2015), the median household income of the suburb was \$85,713 compared to the median household income of this area which was \$48,390. According to the 2016 Maryland Report Card, the school has a 70% participation in Free and Reduced Meals Service (FARMS).

The students were randomly selected for this study based on their placement in the SAT Prep course. Placement in this course is primarily a function of student scheduling and is not influenced by test scores. The only criteria for placing students in the class was that the student had a 2.0 cumulative grade point average at the time of their placement. The student's 10<sup>th</sup> grade PSAT scores were not factored into their placement. There were a total of six fall semester classes. Class size ranged from 6 students to 21 students per class. Students who participated in the Math section during the first quarter, participated in the Verbal section for the second quarter. Students who participated in the Verbal section during the first quarter, then rotated to the Math section for the second quarter. Although some participants in the class were sophomores, they were not eligible to take the SAT on April 5<sup>th</sup>, therefore 10<sup>th</sup> graders who took the class were not counted as participants. In addition, to be counted within the intervention group, students needed to complete each quarter with a C grade point average (GPA) or higher and have 10 or fewer semester absences. This attendance standard supports the district's policy that states "students should not exceed an absence rate of 10% a quarter" (Policy 5120). Because this course meets

every other day on an A-Day, B-Day schedule, for a 90 minute period, the 10 absences or fewer supports this attendance standard. Finally, students needed to be present on April 5, 2017 in order to take the SAT.

As a result, the intervention group consisted of 63 students. The six SAT Prep fall semester classes served a total of 106 students. From that population, 15 were not included due to a D/E semester class average; 15 students were not included due to absences of 10 or more classes; 8 students were not included because they were either 10<sup>th</sup> or 12<sup>th</sup> graders; and finally, 5 students were not included in the intervention group because they entered late or withdrew early. Of the 63 students in the participation group, 18 are male and 45 are female. The following table illustrates the comparative PSAT scores for the intervention group. Possibly the 2.0 GPA accounts for the higher mean PSAT score of the intervention group compared to the total 11<sup>th</sup> grade school population. Section Score range from 160-760.

Table 1 illustrates the comparative mean SAT scores for the State, the District, the school, and the intervention group.

Table 1

*2016 PSAT/NMSQT Total Scores for 11<sup>th</sup> Grade (Evidenced Based Reading and Writing/Math)*

State Mean Score	1015
District Mean Score	948
School Mean Score	838
Intervention Group Mean Score	895

Table 2 illustrates the gender demographics of the intervention group.

Table 2

*Intervention Group Demographics, Gender*

<b>Gender</b>	<b>Number</b>	<b>Percentage</b>
Females	45	71.4%
Males	18	28.6%
Total	63	100%

Table 3 illustrates the ethnic demographics of the intervention group.

Table 3:

*Intervention Group Demographics, Ethnicity*

<b>Ethnicity</b>	<b>Number</b>	<b>Percentage</b>
African-American	20	32%
Hispanic	9	14%
White Non-Hispanic	29	46%
Other	5	8%
Total	63	100%

Table 4 illustrates the gender demographics of the non-intervention group.

Table 4

*Non-intervention Group Demographics, Gender*

<b>Gender</b>	<b>Number</b>	<b>Percentage</b>
Females	89	41.0%
Males	128	59.0%
Total	217	100%

Table 5 illustrates the ethnic demographics of the non-intervention group.

Table 5:

*Non-Intervention Group Demographics, Ethnicity*

<b>Ethnicity</b>	<b>Number</b>	<b>Percentage</b>
African-American	63	29.1%
Hispanic	32	14.7%
White Non-Hispanic	97	44.7%
Other	25	11.5%
Total	217	100%

**Instrument**

The SAT I: Reasoning Test is administered by the College Board to students who register to take it. It is given several times throughout the school calendar year in registered test centers,

typically public or private schools. Many colleges, including most competitive colleges, require SAT scores as part of the admission process. The newly redesigned SAT (College Board, 2016) has two required sections, Evidence-Based Reading, Writing, and Math, and an optional essay section. The test is approximately three hours in length with an additional 50 minutes for the optional essay.

The SAT Reasoning Test from the College Board had been evaluated for its reliability and validity (9th Mental Measurements Yearbook, 1985) until the newly redesigned test of March 2016. “The 2016 SAT has not been reviewed in the Mental Measurements Yearbook; reviews will be completed if publisher provides technical documentation” (Buros 2016).

The Verbal course reviewed the Reading Test (Section 1) and the Writing and Language Test (Section 2). The Reading Test consists of five passages; all questions are passage-embedded. The questions require students to interpret the passages and informational graphics. The College Board summarizes the content of the Reading Test as including: one passage from a classic or contemporary work of U.S. or world literature; one passage or a pair of passages from a primary source historical document; a selection about economics, psychology, sociology, or some other social science; and two science passages (or one passage and one passage pair) that examine foundational concepts and developments in Earth science, biology, chemistry, or physics” (2017). The intervention group was given multiple practices with this various content. The teacher facilitated the practicing of textual annotation, summarizing and paraphrasing ideas within the text, inferring meaning and vocabulary development.

The Reading Test measures a range of reading skills including the ability to interpret and analyze information and ideas, identify how authors use evidence to support their claims,

determine relationships between informational graphics and the passage it's paired with, identify word meaning through context clues, and determine how an author's word choice shapes meaning, style, and tone. Students in the intervention group were given opportunities to practice question types that require them to analyze, synthesize, and infer meaning through extended prose passages.

The SAT Reading Test is 65 minutes long and contains 52 questions. Students were given both timed and non-timed practices.

The Writing and Language Test also consists of non-discrete test questions that rely on passage context. The College Board states that Section 2 of the SAT asks students to revise and edit text for expression of ideas and for conformity to the conventions of Standard Written English grammar, usage, and punctuation (2015). The Writing and Language passages are written so that students can identify and correct both mechanical and rhetorical errors. The Writing and Language test also features informational graphics that students interpret alongside the corresponding text. The Writing and Language Test is 35 minutes long and consists of 44 questions. Students were given both timed and non-timed practices.

The Math SAT Prep course focused strongly on Algebra. The SAT Math test consists of a no-calculator section (Section 3) and a calculator section (Section 4). SAT Math Prep class reviewed the following areas of mathematics: Heart of Algebra, Problem Solving and Data Analysis, and Passport to Advanced Math. The College Board states that the Math test emphasizes real world applications in geometry and trigonometry most relevant to college and career readiness (2017). Students are asked to demonstrate a mastery of linear systems and equations, quantitative literacy, and problem solving through reasoning.

The SAT Math sections are sections 3 and 4 of the SAT. Section 3 is the no-calculator section and is 25 minutes and 20 questions. Section 4 is the calculator permitted section and is 55 minutes and 38 questions. Students were given both timed and non-timed practices.

### **Procedure**

The decision to run multiple sections of an SAT Prep course that was open to a diverse population of students was made by the administration and leadership team in the previous year. As a result of the district opting to test all of its 11<sup>th</sup> grade students on SAT School Day in order to fulfill the Assessment and Transition Course Options as outlined by the Maryland State Department of Education (2016) in accordance with the CCR-CC Act of 2013, students college and career readiness can be demonstrated by their 11<sup>th</sup> grade SAT scores (p.4). Scores of 500 on both the Evidence-based Reading and Writing section and the Mathematics section from a 200-800 score range were set as scores of readiness.

The administration and leadership team also identified Evidence-based Reading, Writing and Math SAT scores as two of the three School Progress Plan (SPP) goals. The school's SPP goals included raising the Math percentage level of College and Career Readiness from 32% to 34% based on students' performance on the 2017 SAT. The second goal stated that the Reading readiness level percentage increase from 40% to 42%.

The intervention group consisted of six separate classes. Each class met for a quarter (nine weeks) with the same instructor for a Verbal section and a different instructor for a Math section. The students were sectioned into the SAT course classes based on their 2.0 grade point average and schedule availability.

All 11<sup>th</sup> grade students, both the intervention and non-intervention groups, participated in the October 2016 administration of the PSAT. Scores from both groups were analyzed. Total



mean scores from the intervention group were 57 points higher than the non-intervention group.

In addition to analyzing the participants' PSAT scores, students were monitored through their grades based upon mastery of course standards. Interims were completed for both quarters by the math and reading teachers. Students also had access to grade reporting through the online grading system. In order to continue to be a participant in the intervention group, a C or better needed to be maintained for each quarter.

Students in the intervention group in the reading class were directly instructed in textual analysis through annotation markers and metacognitive strategies such as paraphrasing and summarizing. These students were specifically instructed in passage content and question type recognition and decoding. Students were instructed in testing strategies such as non-penalty guessing and distractors. Students were instructed in vocabulary analysis of Tier II words and how context clues shape meaning. Students were instructed on how to read command of evidence questions and their relationship to the previous text dependent question.

The intervention group was instructed specifically on Standard English Conventions which include within sentence punctuation, end of sentence punctuation, subordination and coordination, parallel structure, modifier placement, verb shifts in mood and tense, pronoun clarity and agreement, subject-verb agreement, noun agreement, possessive pronouns, items in a series, and parenthetical expressions. Students were also instructed on how to interpret precision and concision of language within a passage. Students were instructed on how to revise a paragraph for cohesion and unity. Students practiced revising passages by deleting or adding information in order to add meaning or eliminate ambiguity.

In the Math class, the intervention group received direct instruction in algebraic skills

such as defining and interpreting variables and creating a function that describes the context, and interpreting relationships between equations and their graphs. Students in the intervention group received direct instruction in applying the different properties of math, converting units, creating equations from word problems, computing and interpreting probability, evaluating statistical claims, choosing appropriate graphical representations, and using percentages. Students in the intervention group received direct instruction in geometry, including congruence, similarity, right triangles, and the Pythagorean theorem as well as questions about complex numbers and trigonometric functions. Finally, students received direct instruction in more advanced mathematical concepts such as quadratic and higher-order functions.

In order to prepare the intervention group for the demands of the Math SAT sections, the instructor emphasized the reasoning behind the calculator and no-calculator sections. The College Board asserted in its 2015 Test Specifications that the no-calculator portion “allows the redesigned SAT to assess fluencies valued by postsecondary instructors and includes conceptual questions for which a calculator is not needed. Meanwhile, the calculator portion gives insight into students’ capacity for strategic use of the tool to address problems efficiently” (p.7). Students are given strategies for identifying and solving these different question types. In addition, students are given direct instruction with the grid-in questions, the only question type that is not multiple choice, but rather student generated answers. Finally, the Math SAT is very much a reading assessment. Students are asked to read real world scenarios that involve multiple steps of problem solving necessary for progressing through college and career readiness. The intervention group received direct instruction in analyzing the wording of a math question.

At the conclusion of each quarter class, students were given a final exam. The final exam

was Practice Test 4 from the College Board and was scored using the provided answer key. Students received a half credit for successful completion of both quarters. Even if a student received a D for the course, thereby eliminating him from the intervention group, that student would still get credit for passing the course.

All 11<sup>th</sup> graders were registered as a bulk registration for the April 5, 2017 SAT school administration. Registration for all students was free and completed on site. In preparation for testing, most students were grouped according to their English class. All proctors for the assessment received College Board training and certification prior to testing.

At the conclusion of the semester, the original population of 106 students was reviewed for the stated criteria of absenteeism, grade, and status as an 11<sup>th</sup> grader. The final student count of 63 students constituted the intervention group.

The initial release of SAT data from the College Board began on May 1, 2017 and continued through May 9, 2017. At this point, the total population of test-takers was 279 students. Of that population, 62 of the 63 students in the intervention group were identified. The SAT scores of the intervention and non-intervention groups will be analyzed and reviewed in the following section.

## CHAPTER IV

### RESULTS

The purpose of this study was to determine the impact that participation in a school-based SAT Prep Course would have on students' SAT scores. Thus, an independent samples t-test was conducted. The independent samples t-test analyzed differences in student performance based on overall SAT mean scores. This analysis was conducted with the goal of determining if there was evidence of statistical significance between the two groups. The significance level for this analysis was set at  $p < .05$ .

Table 6 illustrates the comparative mean SAT scores for the intervention group and non-intervention groups for EBRW, Math, and combined scores.

Table 6:

*SAT Mean Scores: Intervention and Non-intervention Groups*

Group Name	Group Size (N)	EBRW Score	Math Score	Combined Score
Intervention/SAT Prep Course	62	512	482	994
Non-Intervention/No SAT Prep Course	217	448	429	877

As shown in Table 6, group sizes for the intervention and non-intervention groups were 62 and 217, respectively. The intervention group ( $M = 482$ ) outperformed the non-intervention group ( $M = 429$ ) in the SAT Math sections. The intervention group ( $M = 512$ ) also outperformed

the non-intervention group (M =448) in the SAT Evidence-based Reading and Writing sections.

As such, combined performance on the SAT revealed that the intervention group (M=994) scored higher than did the non-intervention group (M= 877).

Table 7 illustrates the results of the independent samples test comparing the mean SAT scores of the intervention and non-intervention groups.

Table 7:

*Independent Samples Test Analysis of Combined SAT Mean Scores: Intervention vs. Non-Intervention Groups*

Group Name	N	Combined Score	SD	t	df	p
Intervention/SAT Prep Course	62	994	156	5.809	277	0.0001
Non-Intervention/ No SAT Prep Course	217	877	135			

As shown in Table 7, an independent t-test was conducted to compare the differences between the intervention and non-intervention groups. The analysis revealed significant differences between the intervention group (M= 994, SD= 156);  $t(277) = 5.809$ ,  $p < .0001$ , two-tailed and the non-intervention group (M= 877, SD= 135). These results suggest that students enrolling in the SAT Prep course scored statistically significantly higher than the students who were not enrolled in the SAT Prep course. As such, the null hypothesis is rejected. The results and their implications are discussed in Chapter V.

## **CHAPTER V**

### **DISCUSSION**

The purpose of this study was to determine if a school-based SAT Prep course had an impact on students' SAT scores. The study utilized a causal comparative design which compared the SAT scores of an intervention group to those of a non-intervention group. The intervention consisted of a semester of SAT Prep direct instruction in both the Evidence-based Reading and Writing sections and the Math sections. The null hypothesis that there would be no difference between the scores of students participating in the SAT Prep course versus those not in the course was rejected.

#### **Implications of Results**

Students' SAT scores are influenced by a variety of factors during their 11<sup>th</sup> grade year. The school district emphasizes the importance of the test to the extent that it pays for and offers a School Day SAT test for every 11<sup>th</sup> grade student. In addition, students in grades 10 and 11 take the PSAT and receive their scores in the form of a score report prepared by the College Board and delivered to the students electronically and by hard copy which identifies areas of strength and weakness. Also, students are encouraged by the district through direct communication in the form of emails and bulletins to sign up for the free resources that the College Board makes available on Khan Academy. And finally, English and Math teachers are advised to incorporate SAT-style readings and question types into their curriculum and direct instruction. To a degree, all students received various forms of SAT preparation in the school in which this study was conducted. This suggests not only the importance of the SAT as a measurement of student achievement but a measurement of school achievement as well.

The results of this study suggest that participation in an SAT Prep course has an impact on a student's SAT scores. The SAT scores are from the April 2017 School Day administration. The total mean score for students enrolled in the SAT course was 994. The total mean score for students not enrolled in the SAT course was 877. The students enrolled in the SAT Prep course scored 117 points higher than did students in the non-intervention group. The students in the intervention group scored a mean of 512 on the EBRW test; the students in the non-intervention group scored a mean of 448. This is a difference of 64 points. The students in the intervention group scored a mean of 482 on the Math test; the students in the non-intervention group scored a mean of 429. This is a difference of 53 points.

When noting these differences, it may be significant to consider the PSAT scores from October 2016. The intervention group had a mean PSAT score of 895; the aggregate mean of the 11th grade class was 838. This mean includes the scores of the intervention group. The difference between the two groups is 57 points; this is significantly less than the total of 117 points from the SAT scores. This comparison may emphasize the impact that participation in a school-based SAT Prep course has on student scores or it may indicate academic growth from October to April.

Gender differences were observed in the study. The intervention group initially consisted of 106 students. Students who did not meet the stated criteria of attendance and grades were extracted. This left an intervention group of 63 students. Of this group, 71.4% were females; 28.6% were males. Of the 43 students who did not meet the criteria for inclusion in the intervention group, 13 were excluded because they were either sophomores or seniors and would not take the April SAT, or because they enrolled in the course late or withdrew early. Of the 30

students who were excluded due to grades or attendance, 16 or 53%, were males. The fact that substantially more female students than male students were eligible for and successfully completed the course is a factor to be considered. Educators must consider what factors are solidifying gender differences in preparation for college readiness, and to what degree schools can impact these differences.

In addition to gender, ethnic differences within the intervention group were noted. Of the 63 students who constituted the intervention group, 46% were White, and 54% were identified as African-American, Hispanic or Other. Of the 30 students who were excluded from the intervention group for grades or attendance, 15 or 50% were identified as African-American, Hispanic or Other. This factor supports research that suggests minority students participate in SAT Prep courses at higher rates than their White counterparts (Alon, 2010). This has implications for public schools and their commitment to diversity and access. Educators must continue to monitor participation in SAT prep courses, college application and enrollment across demographic groups.

### **Threats to Validity**

Many factors outside of the scope of the school-based SAT Prep course may have influenced the statistically significant score difference of the intervention and non-intervention groups. Students who did not have a GPA of 2.0 were typically not considered for placement in the course; however, all students regardless of GPA took the SAT. Although a student's GPA does not necessarily correlate with SAT scores, it can reflect both motivation and academic readiness. The factors of motivation and academic readiness is further underscored by the removal of 30 students from the original population of 106 due to grades and attendance. The



intervention group of 63 students was defined by increased motivation to succeed and potentially increased academic readiness. Their ability to outscore their classmates on the SAT may have been influenced by internal factors rather than external ones. Other studies have demonstrated a link between student motivation and participation in SAT preparation (Bursztyn & Jensen, 2015). The students' motivation to do well on the SAT is a factor to consider in this study.

There are possible external threats to validity. The content and delivery of any school-based SAT Prep course is dependent upon both the district's curriculum and the instructor. The most reliable source of content for preparation is the College Board's partnership with Khan Academy. However, using this online program requires computer resources to which few schools have access. Whereas any instructor and student has access to released tests that can be used as practice, the instructional component may vary from class to class. Developing a consistent and reliable SAT Prep course that instructs students on strategy and content is a challenge for many schools. Because SAT Prep is considered an elective in most public schools, the human resources used to staff the teaching position may be an after-thought of scheduling. The score gain of 117 points is consistent with the College Board's most recent announcement regarding preparation for the SAT using its resources on Khan Academy. The College Board announced in a 2017 press release that twenty hours of study of Khan Academy is associated with an average score gain of 115 points (Strauss, 2017). The gains of the intervention group and the College Board study are nearly identical, despite the fact that the school-based course was not exclusively a Khan Academy course. This discrepancy in preparation yet similarity in score gains is a factor of validity that must be considered.

## **Relationship to Literature**

The devotion of resources by a public school district to provide SAT preparation through direct instruction is discussed at length by many researchers. It is noted by many researchers that the SAT is as much of a barrier to college admissions as it is a measurement of readiness (Reeves & Halikias, 2017). Discussions related to bias and equity are taken into serious consideration by educational leaders who seek to mitigate these obstacles. Agreement is uniform that college and career readiness is essential for all students; however, less agreement exists as to the measurement of this readiness. Ultimately, states and districts are left to determine whether or not the SAT is an appropriate yardstick for this goal. Providing access to testing registration and testing sites is helpful, but does not speak to readiness. Unfortunately, little literature exists that demonstrates the efficacy of SAT Prep instruction in a public school setting. Much of the existing literature features research conducted through private partnerships such as A.S.P.I.R.E. in rural North Carolina (Hermann, Huffman, Anderson, & Golden, 2013) or research examining student participation in privatized community based SAT Prep courses (Park, 2012). Even the research that has been conducted in a public setting such as Bursztyn & Jensen's study regarding the role of peer pressure in committing to an SAT Prep course (2015), examines factors other than the effectiveness of a public school based SAT Prep course.

It is difficult to assess effectiveness of an SAT Prep course within a public school setting because the course itself is subject to the vicissitudes of resources, content, and skill of instruction. The only resource suggested as a preparation by the College Board is the Khan Academy coursework. Critics such as the nonprofit group FairTest point out that the College Board had previously argued against private coaching as a way to increase SAT scores. Now

that the makers of the test are in charge of the preparation resources, they offer evidence to the contrary. Strauss cites Bob Schaeffer of FairTest who states that “after six decades of aggressively claiming that SAT prep courses do not have a major impact, the College Board has suddenly reversed its position” (2017). If participation in Khan Academy online course work does indeed raise test scores by an average of 115 points as the College Board now claims (Strauss), this is commensurate with this study’s findings. If public schools truly wish to provide all students with equity and access to college admissions, further studies will need to be conducted that quantitatively measure the effectiveness of SAT Prep courses within the school setting.

### **Implications for Future Research**

The SAT has a firm hold on the American educational landscape. As college demographics shift to be more inclusive, the debate on the SAT broadens as well. The SAT has gone from a test of elites to a measurement of public school progress. The research has not kept up with this expansion. Public education has evolved from equipping its citizenry with rudimentary literacy skills to embodying a democratic ideal of higher education for all. There needs to be a careful consideration of the following concerns: the validity and reliability of the SAT, its use as a measurement of school progress, and its use as a measurement of student progress.

Close consideration needs to be paid to the SAT test itself. The changes to the test in recent years (from the 2005 addition of a Writing section to the newly redesigned SAT of 2016) have not been validated through established criteria. The College Board needs to provide appropriate technical documentation in order to eliminate lingering allegations of bias. The

College Board needs to provide sufficient explanation regarding the test's development.

Public school districts must examine the decision to include the SAT within their own set of progress goals. The reality is that school districts are evaluated by SAT scores. The scores are provided in neighborhood real estate searches and community web sites. If the results are favorable, they will be advertised. The implications of using this data set to evaluate a school's academic progress needs to be monitored. If these data is merely reinforcing existing stereotypes, schools need to be provided with additional resources to overcome established obstacles. A study could be done on whether or not an at-risk school, when provided with consistent additional resources and personnel to support SAT preparation, can significantly increase SAT means. To ask an at-risk school with traditionally low SAT scores to raise them without sufficient support networks is predicting failure. Research needs to document such efforts in order to sustain progressive change.

Finally, the implications of providing in school SAT preparation impact the individual student most specifically. Research needs to continue to examine who benefits most from this preparation and under what conditions. Resources need to target those students for whom such intervention may be critical. Do all public school students in a district benefit equally? Are gender and ethnic demographics addressed? Are socioeconomic concerns secondary to racial equity? These questions regarding the impact of in school SAT preparation can only be answered through careful and methodical research yet to be conducted.

### **Conclusion**

The results of this study indicate that SAT scores increase when there is an in-school SAT prep course for students at an at-risk high school. Students participating in this course had

SAT scores an average of 117 points greater than students who did not participate in the course. If high schools and universities continue to emphasize the importance of college entrance exams as a measurement of academic readiness, public education will need to ensure that the exam is not a barrier to achievement. Investing in a quality in-school SAT prep course will benefit the community, the school, and the student.

## REFERENCES

About SAT school day. (2017, January 19). Retrieved from

<https://collegereadiness.collegeboard.org/sat/k12-educators/sat-school-day/about>

Alon, S. "Racial differences in test preparation strategies: A Commentary on shadow education,

American style: Test preparation, the SAT and college enrollment." *Social Forces* 89.2

(2010): 463-74. *ProQuest*. Web. 28 Nov. 2016.A

Anderson, D., & Education Partnerships. (2010). Closing the achievement gap on ACT &

SAT. *Education Partnerships, Inc.* Retrieved from

<http://files.eric.ed.gov/fulltext/ED538190.pdf>

Baltimore County Public Schools. (2015). Students: enrollment and attendance. Retrieved from

[https://www.bcps.org/system/policies\\_rules/rules/5000Series/RULE5120.pdf](https://www.bcps.org/system/policies_rules/rules/5000Series/RULE5120.pdf)

Buchmann, C., Condron, D., Roscigno, V. (2010). Shadow education, american style: Test

preparation, the SAT and college enrollment. *Social Forces*, 89(2), 435-461.

Buros Center for Testing. (2016). Test Reviews. Retrieved from

<https://marketplace.unl.edu/buros/college-board-sat-test.html>

Burstyn, L., Jensen, R. (2015) How does peer pressure affect educational investments? *The*

*Quarterly Journal of Economics*, doi:10.1093/qje/qjv021

The College Board announces bold plans to expand access to opportunity: Redesign of the SAT.

(2015, June 22). Retrieved from

<https://www.collegeboard.org/releases2014/expand-opportunity-redesign-sat>

Department of Legislative Services Maryland General Assembly (2013). College and career

readiness and college completion act of 2013, Senate Bill 740. Retrieved from

[http://mgaleg.maryland.gov/2013RS/fnotes/bil\\_0000/sb0740.pdf](http://mgaleg.maryland.gov/2013RS/fnotes/bil_0000/sb0740.pdf)

Fensterwald, J. (2016). Dozen districts offer free SAT to all juniors. Retrieved from

<https://edsource.org/2016/dozen-districts-offer-free-sat-to-all-juniors-smarter-balanced-california/561505>

Grodsky, E. (2010). Learning in the shadows and in the light of day: A commentary on shadow

education, american style: Test preparation, the SAT and college enrollment. *Social*

*Forces*, 89(2), 475-481. Retrieved from

<http://www.jstor.org/goucher.idm.oclc.org/stable/40984542>

Herman, M., Huffman, R., Anderson, K., & Golden, J., (2013). College entrance examination

score deficits in ag-intensive, rural, socioeconomically distressed north carolina counties:

An inherent risk to the post-secondary degree attainment for rural high school

students. *NACTA Journal*, 57(4), 45-50.

Lawrence, I., Rigol, G., Van Essen, T., Jackson, C., (2003) A historical perspective on the

content of the SAT. The College Board Research Report No. 2003-3. Retrieved from

<http://files.eric.ed.gov/fulltext/ED562571.pdf>

Marsh, C., Vandehey, M., Diekhoff, G., (2008). A comparison of an introductory course to SAT/ACT scores in predicting student performance. *Journal of General Education*, 57(4), 244-255.

Maryland State Department of Education. (2016). Tool kit to determine students college and career ready under the college and career readiness and college completion act of 2013.

Retrieved from

<http://www.marylandpublicschools.org/programs/Documents/CCRS/CCRToolKit2016.pdf>

Park, J., (2012). It takes a village (or an ethnic economy): The varying roles of socioeconomic status, religion, and social capital in SAT preparation for chinese and korean American students. *American Educational Research Journal*, 49(4), 624-650. Retrieved from

<http://www.jstor.org/goucher.idm.oclc.org/stable/23249215>

Park, J., Becks, A., (2015). Who benefits from SAT prep?: An examination of high school context and race/ethnicity. *The Review of Higher Education* 39(1), 1-23, doi:

10.1353/rhe.2015.0038



Reeves, R., Halikias, D., (2017, February 02) Race gaps in SAT scores highlight inequality and hinder upward mobility. *Brookings Institution*. Retrieved from

<https://www.brookings.edu/research/race-gaps-in-sat-scores-highlight-inequality-and-hinder-upward-mobility/>

Richardson, C., Gonzalez, A., Leal, L., Castillo, M., Carman, C. (2014). PSAT component scores as a predictor of success on AP exam performance for diverse students. *Education and Urban Society*, 48(4), 384. doi:10.1177/0013124514533796

SAT report: Only 43 percent of 2012 college-bound seniors are college-ready. (2012). *The Hispanic Outlook in Higher Education*, 23, 26. Retrieved from

<https://goucher.idm.oclc.org/login?url=http://search.proquest.com/goucher.idm.oclc.org/docview/1326333740?accountid=11164>

Stern, G. (2010). 21 years later, college-prep fund still delivers throughout new york city. *The Hispanic Outlook in Higher Education*, 21, 13-15. Retrieved from

<https://goucher.idm.oclc.org/login?url=http://search.proquest.com/goucher.idm.oclc.org/docview/816855385?accountid=11164>

Strauss, V. (2017, May 09). Can coaching truly boost SAT scores? For years, the college board

said no. now it says yes. *The Washington Post*. Retrieved from

[https://www.washingtonpost.com/news/answer-sheet/wp/2017/05/09/can-coaching-truly-boost-sat-scores-for-years-the-college-board-said-no-now-it-says-yes/?utm\\_term=.03ce1b3c29db](https://www.washingtonpost.com/news/answer-sheet/wp/2017/05/09/can-coaching-truly-boost-sat-scores-for-years-the-college-board-said-no-now-it-says-yes/?utm_term=.03ce1b3c29db)

2010 college-bound seniors results underscore importance of academic rigor. (2010). *The*

*Hispanic Outlook in Higher Education*, 21, 36-37. Retrieved from

<https://goucher.idm.oclc.org/login?url=http://search.proquest.com/goucher.idm.oclc.org/docview/759660170?accountid=11164>

The College Board. Test specifications for the redesigned SAT. (2015). Retrieved from

<https://collegereadiness.collegeboard.org/pdf/test-specifications-redesigned-sat-1.pdf>

The College Board. SAT suite of assessments. (2017). Retrieved from

<https://collegereadiness.collegeboard.org/sat/inside-the-test/math>

