ABSTRACT

Title of Dissertation:	A CAUSAL COMPARATIVE INVESTIGATION OF
	TRADITIONAL vs. SPECIALIZED PUBLIC SECONDARY
	PROGRAMS' EFFECTIVENESS IN PREPARING BLACK
	STUDENTS FOR COLLEGE
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This causal comparative study examined the effectiveness of three secondary public-school types in preparing Black (categorized as African American, people of African descent living in America, Caribbean, and/or Hispanic of African descent, and Bi-Racial) students for college. More specifically, this study compared college readiness variables at traditional versus specialized (magnet and career technical education— CTE) public secondary programs' effectiveness in preparing Black students for college. This study described the basic characteristics of the above-mentioned school types, characteristics of effective schools, and key characteristics of college and career readiness (CCR) and used the results of this study to see which schools seemed more effective in preparing Black students for college, and, ultimately, for careers. Historically, Black students have not been equally prepared in grades k-12 for them to have the same post-secondary or workforce options as their non-Black peers. For several decades, traditional public schools have served predominantly the Black urban poor, and their educational attainment has remained stagnant at an all-time low. If traditional public schools educate the largest percentage of Black and minority students in the country, it seems logical to conclude traditional schools are failing a majority of Black and brown students. Thus, the framework used for this research was Dr. David Conley's Four Keys to College and Career Readiness and Dr. Ronald Edmonds' Effective Schools Theory. This was a unique way of looking at Black students' college preparedness based on school types.

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STUDENTS FOR COLLEGE

by

Nicole L. Watford

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DEDICATION

To God be the Glory for the things He has done. I am completely overwhelmed with joy and gratitude for fulfilling the requirements of my doctorate with a full pass at my dissertation defense on May 20, 2019. Heartfelt thanks are extended to my dissertation committee for making the entire process seamless. Completing this degree has been one of my greatest accomplishments to date. And the seed was planted decades ago when a family member told me to be the first in the family to earn a doctorate. At 19, I took hold of that word and never let it go; I professed at that moment that I would be the first, and so it is! Time is of no significance when you have a dream.

To my mother, Alana, I thank you for your continued prayers and support while I was completing this degree. You made this day possible when you did not allow an elementary school teacher to put me in a remedial class or retain me otherwise. Ultimately, your confidence in me made me work harder in school from that day forward, and my hard work has led to this momentous occasion.

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With all my love, Dr. Nicole L. Watford

TABLE OF CONTENTS

Page

CHAPTER ONE: INTRODUCTION	
Background of the Study	2
Statement of the Problem	7
Conceptual and Theoretical Framework	8
Research Questions	14
Hypotheses	15
Variables	16
Significance of the Study	16
Limitations and Delimitations	22
Definition of Terms	23
Summary	25
CHAPTER TWO: REVIEW OF RELEVANT LITERATURE	29
School Types	30
Traditional or Urban School Programs	32
Magnet School Programs	35
Career and Technical Education (CTE) Programs	38
Access to Rigorous Courses	41
Access to High School Guidance Counselors	44
Access to Career and Technical Content	49

Four Keys Framework Defined	52
Effective Schools Theory Framework Defined	58
Correlate: High Expectations	61
Correlate: Strong Instructional Leadership	66
Correlate: Time on Task and Mastery of Skills	67
Correlate: Frequent Monitoring for Progress	69
Summary	74
CHAPTER THREE: METHODOLOGY	76
Introduction	76
Research Questions	76
Hypotheses	77
Research Design	78
Participants	81
Instrumentation	82
Limitations	83
Data Collection	84
Data Analysis	85
CHAPTER FOUR: RESULTS	87
Introduction	87

TABLE OF CONTENTS (continued)

Research Question 1 Findings	
Research Question 2 Findings	90
Research Question 3 Findings	95
Summary	102
CHAPTER FIVE: DISCUSSION	104
Discussion of Findings	105
Conclusions	110
Implications	113
Recommendations for Future Research	114
References	116

LIST OF TABLES

Table 1. Mean and Standard Deviation of GPA of Traditional	
and Specialized Public High School Students	90
Table 2. Mean and Standard Deviation of SAT Scores of	
Traditional and Specialized Public High School Students	91
Table 3. SAT Scores of Traditional and Specialized Public High	
School Students	92
Table 4. Percentage of Students Who Were Conditionally	
Admitted to the Post-secondary Institution in this Study	
by School Type	93
Table 5. Comparison of Students Who Were Admitted as Regular	
Versus Conditional to the Post-secondary Institution in this	
Study by School Type	94
Table 6. Mean and Standard Deviation of SAT Scores of High and	
Mid-high to Low and Mid-low Poverty Levels by Traditional	
and Specialized Public High School Students	97
Table 7. Mean and Standard Deviation of SAT Scores of Mid-high	
to Mid-low Poverty Levels by Traditional and Specialized	
Public High School Students	100

LIST OF FIGURES

P	age
Figure 1.	
Relationship between the Independent and Dependent Variables	16
Figure 2.	
School Year 2015-2016 (Statewide Summary) Official Number of Studer	nts
Approved for Free and Reduced-Price Lunch and Percent of Enrollmer	nt
by Agency as of October 31, 2015	95

CHAPTER I:

INTRODUCTON

This study investigated the effectiveness of three school programs in preparing Black students for college using college and career readiness (CCR) indicators as a measure. The acronym CCR was used throughout this study to refer to college readiness as the purpose of college readiness is career readiness; the two go hand-in-hand. The participants are Black students who graduated high school and matriculated in 2016. These participants are first-time college students attending a 4-year research institution located in the Northeast region of the United States. The independent variables were school types: traditional, magnet, and career and technical education (CTE). Moving forward, magnet and CTE schools will also be referred to as specialized high schools or specialized high school programs.

Chapter one will introduce the problem, the purpose of the study, and indicate its significance. The framework will also be outlined. The research questions will indicate the relationship among the variables. The limitations and delimitations of the study and definition of terms will follow these questions and their related hypotheses.

Background of the Study

The historical era of the 1950s and 1960s created a great need for educational reforms for students of color. Brown vs. Board of Education, the landmark Supreme Court decision that acknowledged racially segregated public schools were unconstitutional, required public schools to educate all children, regardless of race (Supreme Court of the United States, 1954). The Elementary and Secondary Education Act (ESEA), a civil rights law signed in 1965 by President Lyndon Johnson as the country's first national goal, was for full educational opportunity. It was part of his War on Poverty and provided guidance and federal funds, known as Title I, for poor children in America's public schools (Department of Education, 2015). The need for education equality then was as great as it remains today. Initially, many reforms occurred as a result of desegregation (Education Next, 2010).

Today, educational reforms in this country are still established to reduce the educational and socio-economic divide between Blacks and Whites. Few reforms have been able to make good on their attempts as Black students continue to linger behind their White counterparts both academically and socio-economically (Education Next, 2010). To prepare high school students nationwide for college and a career, higher standards have been mandated at the national, state and local levels of government, for every student in the United States upon high school graduation. In December 2015, then President Barack Obama reauthorized the Elementary and Secondary Education Act (ESEA) that had been this country's national education law of commitment to equal opportunity for all students for fifty years to an enhanced version of the law called Every Student Succeeds Act (ESSA).

In this new law, there are many highlights, but three stand out in particular and show why this study on college and career readiness (CCR) among Black students is relevant. ESSA explicitly states that it:

- Advances equity by upholding critical protections for America's disadvantaged and high-need students.
- Requires—for the first time—that all students in America be taught to high academic standards that will prepare them to succeed in college and careers.
- Maintains an expectation that there will be accountability and action to effect positive change in our lowest-performing schools, where groups of students are not making progress, and where graduation rates are low over extended periods of time

(U.S. Department of Education, 2015).

Given the charge of this new law, ongoing research focuses on the college and career readiness of America's students. The outcome for

Black and disadvantaged students often centers around themes on lack: lack of fundamental academic achievement compared with their peers of other races in the same grade who take the same classes attending different schools; lack of information, resources and/or opportunities provided to students regarding college and career goals early enough to make a difference in college-ready outcomes; lack of access to career/technical content knowledge and programs.

These students lag behind other races despite laws and reforms created to afford them an equitable, quality education. Students of color, with Black students in last place, lag behind their peers academically and are not meeting college and career readiness standards at the rate of their peers (Inside Higher Education, 2015). The expectation of a quality education is to prepare all students for success after high school graduation. Regardless of the school type students attend, they are expected to acquire content knowledge and skills beginning from pre-k through grade 12 to prepare them for college or work.

In this country, 87% of schools are traditional public schools, four percent are magnet schools or special interest programs, and two percent are CTE schools (occupational training programs) (Taie & Goldring, 2017); the school types with fewer programs have more success preparing students for college and careers. College and career readiness (CCR) has become a major focus for elementary, secondary, and postsecondary education communities (Carnevale, Smith, & Strohl, 2010). A national debate has emerged because of the competitive global economy, the changing workplace, and the need for more students to enter the new careers that are emerging (Alliance for Excellent Education, 2009). However, a disproportionate number of Black students in the United States are failing to meet CCR standards based on college admissions tests such as the SAT and ACT (Inside Higher Education, 2015). This problem is critical because it has been estimated that by 2020, nearly all jobs will require some form of postsecondary education (Bryant, 2015).

College ready, according to Office of the State Superintendent of Education (OSSE), means a student is academically able and prepared to demonstrate reading, writing, mathematics, social, and cognitive skills to qualify for and succeed in a postsecondary academic program with rigorous coursework without the need for any remedial courses. The student is expected to be able to compete academically with his peers at a national standard. This study aims to measure college readiness using GPA and SAT scores. Career ready (for which there is currently no formal standard of measurement), according to OSSE, is a student's content knowledge and technical skills in a field of study or interest. According to the U.S. Department of Education, the nation's college- and career-ready graduation requirements of all students include:

Minimum high school graduation expectations (e.g., completion of a minimum course of study, content mastery, proficiency on college and career-ready assessments, etc.) that include rigorous, robust, and well-rounded curriculum aligned with college- and careerready standards (also defined by Maryland State Department of Education) that cover a wide range of academic and technical knowledge and skills to ensure that students leave high school ready for college and careers. (U. S. Department of Education, 2018, p. 5)

The student is expected to know content and to know how to think analytically and problem solve effectively to be prepared for any field of study upon graduating from high school and college (OSSE, 2016). CCR is measured throughout the nation primarily by scores obtained on college entrance exams such as the SAT and ACT. Other qualifying factors like high school attendance, grade point average (GPA), class rank, AP/IB credit, and state issued college tests are all considered in determining students' likelihood to thrive in college; however, college entrance exam scores are key predictors for college readiness (CCR, 2017).

Statement of the Problem

Public schools that serve inner-city students face the challenge of preparing disadvantaged children from impoverished communities to become productive citizens (Jacob, 2007). Black students, nationwide, form the largest share of students attending high-poverty schools (U.S. Department of Education, 2014) which are found mostly in cities throughout the country (National Center for Education Statistics, 2010). Reportedly, only 19 percent of these students from urban school districts pursue postsecondary education (Pew Research Center, 2011). Prior to the Information Age (around the 1970s), adults could make a decent living with rudimentary academic skills; however, this is no longer the case in the age of global technological advancements where having anything less than a college degree will make it increasingly more difficult to earn a living wage (Jacob, 130). To afford more Americans the ability to earn a living wage, in February 2009, President Obama set a new goal for America stating that by 2020, America would once again have the highest proportion of college graduates in the world (White House, 2009). For this initiative to be successful, however, more needs to be done nationally to ensure urban traditional public high schools are adequately preparing Black students academically for rigorous college coursework and technically for careers in the workforce upon high school graduation. The term moving forward will be referred to as college and career readiness (CCR).

To be clear, this study is about the preparation and preparedness of Black students for college rather than their success in college. Data collected will not be used to determine how students might perform in college. For this study, secondary data of the variables (normed CCR indicators) will be collected from a local four-year university of incoming Black students from different public high school models. The differences in the outcome of the collected data from the CCR variables at traditional versus specialized high schools may inform an understanding of how these students are prepared at various school programs throughout the country.

Conceptual and Theoretical Framework

Dr. David Conley's Four Keys to College and Career Readiness (CCR) is a thoroughly research-based approach to consider when looking at what all students are expected to know and be able to do to transition from high school prepared for college and for the workforce. Specifically, the four keys describe key cognitive strategies, key content knowledge, key learning skills and techniques, and key transition knowledge and skills, which have become a national standard for schools nationwide to align with college and workforce knowledge and skills. In this study, the key content knowledge will be used as a framework to look at the research questions to measure students' academic performance using two CCR indicators: GPA and SAT.

On the other hand, Dr. Ronald Edmonds' Effective Schools Theory (EST) looks at the role schools play in students' academic achievement. Edmonds' EST is an ideal approach to use when looking at the barriers Black students face in America's school which continue to stifle their educational attainment and preparedness for college and for the workforce. In this study, four of the seven correlates of EST will show what schools can do to effectively prepare students to fulfill Conley's Four Keys of CCR in preparing students for college or work. The four correlates of EST that schools can employ to potentially minimize barriers for students of color include instructional leadership, high expectations, time on task, and frequent monitoring of student progress.

The Educability of All Students

"The Equal Educational Opportunity Survey," published by Coleman (1966) and a team of fellow social scientists, became a critical instrument by which to evaluate the achievement of poor students. The Coleman report concluded that a student's familial background was a primary factor of student achievement, and the school had little, if any, impact on student success (Lezotte, 2001). Coleman et al., vehemently believed that a school's instructional methods had minimal effect on students' learning and that their achievement was contingent upon external factors like poverty and their parents' educational attainment. As a result, compensatory education (programs or services designed to help at risk or disadvantaged children with cognitive deficiencies and low educational achievement succeed) emerged. However, Dr. Ronald Edmonds, an African American educator and author, challenged this notion that familial factors were sole contributors of students learning and academic achievement (Edmonds, 1979).

In fact, Edmonds (1979) believed that compensatory education programs and services appeared to make low-income students adapt to a preferred way of teaching and in so doing, change their behavior. "These programs focused on changing students' behavior in order to compensate for their disadvantaged backgrounds and made no effort to change school behavior" (Lezotte, 2001, p. 1). With that, Edmonds, Brookover, and Lezotte (1977) sought out especially effective schools schools at or above the city average grade equivalency in math and reading—who successfully educated all students regardless of socioeconomic status (SES), familial background or any other external factors. These highly effective schools were found repeatedly in small and large communities in various locations throughout the country and neither poverty nor parental education were hindrances in students learning or their academic achievement.

Lezotte (2001) noted the second step after identifying highly effective schools was to look for common characteristics in each of the schools observed. Edmonds et al. (1977) investigated the philosophies, policies, and practices these schools all had in common. The common threads that emerged from the effective schools identified by the group included (a) strong instructional leadership, (b) a strong sense of commitment to the school's mission, (c) demonstrated effective instructional behaviors, (d) high expectations for all students without exception, (e) time on task and mastery of skills, (f) frequent monitoring of student academic achievement, (g) and the schools' safe and orderly atmosphere (Edmonds, 1979; Lezotte, 1991). These seven attributes have become known as the seven correlates of effective schools. If these correlates were practiced routinely in every school in this country, regardless of the school's population and demographics, one would surmise that Black students would not be failing to meet CCR standards at a significantly higher rate than all ethnic groups. The Effective Schools Theory (EST) was significant in this study because the correlates used not only revealed greater academic achievement among Black high school graduates of specialized schools, but also outlined the foundation for schools throughout the country to better prepare all students, Black students in particular, for the rigors of college and preparation for career.

This study identified four specific correlates to better understand the major barriers that many Black students encounter in their public high schools that hinder their college and career readiness: strong instructional leadership and effective instructional behaviors; high expectations for all students without exception; time on task for mastery of skills; and frequent monitoring of student academic achievement. Using EST as a theoretical framework challenged the assumptions of why Black students lag their non-Black peers academically in the same grade at different schools, and EST placed schools at the helm of students' academic achievement that establishes their future success beyond secondary education.

Edmonds (1979) vehemently expressed a clear definition for each of the correlates from his research in the following assertion:

I want to [note] as unequivocally as I can what seemed to me to be the most tangible and indispensable characteristics of effective schools: (a) They have strong administrative leadership without which the disparate elements of good schooling can neither be brought together nor kept together; (b) Schools that are instructionally effective for poor children have a climate of expectation in which no children are permitted to fall below minimum but efficacious levels of achievement; (c) The school's atmosphere is orderly without being rigid, quiet without being oppressive, and generally conducive to the instruction of business at hand; (d) Effective schools get that way partly by making it clear that pupil acquisition of basic school skills takes precedence over all other school activities; and (e) When necessary, school energy and resources can be diverted from other business and furtherance of the fundamental objectives. (p. 22)

The concepts of instructional leadership and effective instructional behaviors, high expectations for all students, time on tasks for mastery of skills, and frequent monitoring of student academic achievement proposed by Edmonds when identifying characteristics of effective schools was essential when looking at the 4 Keys of CCR (Conley, 2011) and what students should know and be expected to do. When these correlates are implemented in all schools nationwide, more Black students will be more equally prepared to accomplish the 4 Keys of CCR: Key Cognitive Strategies (Think); Key Content Knowledge (Know); Key Learning Skills and Techniques (Act); and Key Transition, Knowledge and Skills (Go).

Purpose of the Study

The purpose of this causal comparative study was to investigate the effectiveness of three secondary public-school types in preparing Black students for college. Investigating the effectiveness of school types as a possibility to increase the college readiness of Black students is significant because postsecondary attainment—any credential beyond high school—has major implications for social mobility over the life span of these particular students. According to Kelly (2016), a postsecondary education with a credential has a transformational effect on economic mobility, yet a disproportionate number of Black students in the United States are failing to meet college and career readiness (CCR) standards based on college admissions tests (Jaschik, 2015).

Research Questions

Guided by Dr. Conley's Four Keys and Dr. Edmonds' Effective Schools Theory, the following research questions were explored:

- RQ₁ How do Black graduates of traditional high school programs perform academically compared to Black graduates of specialized high school programs (magnet/CTE) in their GPA?
- RQ₂ How do Black graduates of traditional high school programs perform on their college entrance exams compared to Black graduates of specialized high school programs (magnet/CTE) on their SAT Total Scores (ERW/Math)?
- RQ₃ How do traditional high school programs compared to specialized high school programs (magnet/CTE) compare in the SAT scores of Black graduates based on the schools' poverty level?

Hypotheses

The research questions generated the following set of null and alternative hypotheses:

- H_{o1}: There is no statistically significant difference in the GPA when comparing the academic performance of Black graduates of traditional high school programs with Black graduates of specialized high school programs (magnet/CTE).
- H_{a1}: There is a statistically significant difference in the GPA when comparing the academic performance of Black graduates of traditional high school programs with Black graduates of specialized high school programs (magnet/CTE).
- H_{o2}: There is no statistically significant difference in the SAT Total Scores (ERW/Math) when comparing the performance on college entrance exams of Black graduates of traditional high school programs with Black graduates of specialized high school programs (magnet/CTE).
- H_{a2}: There is a statistically significant difference in the SAT Total Scores (ERW/Math) when comparing performance on college entrance exams of Black graduates of traditional high school programs with Black graduates of specialized high school programs (magnet/CTE).

- H_{o3}: There is no statistically significant difference in the SAT scores of Black graduates when comparing traditional high school programs to specialized high school programs (magnet/CTE) based on the schools' poverty level.
- H_{α3}: There is a statistically significant difference in the SAT scores of
 Black graduates when comparing traditional high school
 programs to specialized high school programs (magnet/CTE)
 based on the schools' poverty level.

Variables

The relationship between the independent and dependent variables is described in Figure 1.

Independent Variables

Dependent Variables



Figure 1. Relationship between the Independent and Dependent Variables

The independent variables, public school types, were compared with the college and career indicators and the effects the high school type had on students' preparedness for college. Black students' preparedness was determined by the dependent variables, final high school grade point averages (GPA) and college entrance exam scores (SAT).

Significance of the Study

Data from the U.S. Department of Education (2014) for the 2011-12 school year show there were 3.3 million Black students in high-poverty

schools in this country. If only about 19% of students from urban school districts (70% for suburban students) pursue postsecondary education (Pew Research Center, 2011) after high school graduation, ultimately, they will minimize their life options and potentially devastate the U.S. economy. The good news is that parents of Black students overwhelmingly desire for their child/ren to perform well and to succeed academically in school to be on track to earn a college degree. Nearly 90% of Black parents with low- and moderate-income want their children to earn a college degree according to United Negro College Fund (UNCF) research, and Black parents are also said to be significantly more likely than White parents to say that their child/ren earning a college degree is essential (FDPRI, 2016).

While the parental aspirations for their student/s is exciting news, schools must do a better job of educating parents and families in the college planning process, which begins with essential academic requirements. Thus, equally important, schools must make sure they are doing their part to prepare students academically for success in college and career. In *Rising to the Challenge: Are High School Graduates Prepared for College and Work?*, a national survey released by Achieve (2014), an independent, nonpartisan, nonprofit education reform organization, revealed how unprepared recent public high school graduates say they are for college and work. In the survey, 1,347 high school graduates from the classes of 2011 through 2014 found, in overwhelming numbers, what would make them more prepared for life after high school. The results are not surprising:

[A]mong those receiving the highest marks were: provide opportunities for real-world learning (90% total would improve somewhat and a great deal); communicate early in high school about the courses needed for college/careers (87%); give opportunities to take challenging courses (86%); provide more help for those who need extra tutoring (83%) and have an assessment late in high school so students can find out what they need for college (77%). (Achieve, 2014)

These findings support the literature as it relates to what students need to be successful beyond high school graduation.

Most of the high school graduates surveyed in the study feel their high school expectations of them do not match real world expectations of them. Of the 1,347 graduates surveyed, only 337 students feel their high school set high expectations for them. Here is what the respondents reported about expectations:

 60% of college students say they would have worked harder in high school if they knew what they know now about the expectations of college and work.

- 72% of college students show that they would have taken more challenging courses given what they know now about the expectations of college and work.
- 87% of all recent high school graduates surveyed say that they would have worked harder if their high schools demanded more, set higher academic standards, and raised expectations of course work and studying.

More than 25% of the respondents who took the survey said they wish that their high school had prepared them better for success in math, study habits, and communication skills. The results of the report showed more students felt unprepared in these areas in 2014 than they did in 2004 (Achieve, 2014). These gaps and deficiencies that were identified by students are all components of Conley's 4 Keys to CCR (Conley, 2014).

Employers throughout the country have indicated some level of dissatisfaction in the level of competency college graduates offer in the workplace and oftentimes place blame on postsecondary institutions who place blame on secondary education programs for recent graduates' ineptness. Grasgreen (2014) explains key aspects that influence employers' hiring choices based on the results of a recent survey. The results indicate that when "[asked] to rank the importance of four factors in employers' hiring decisions, 84% said the amount of knowledge the candidate has in the field is very important, and 79% said the same of the candidate's applied skills in the field" (Inside Higher Education, 2014, p. 10). These employers' ratings of desirable candidates having technical content knowledge and applied skills are features of Conley's 4 Keys of CCR under Content Knowledge (2014). This lack of knowledge is a primary reason traditional schools must provide or expand technical content in their schools to prepare students for work, whether they attend college or not, after high school.

The results of the survey suggested that students who had more knowledge and skills in a specific field of study were more desirable candidates for a position, barring other factors that impact Black college graduates' ability to be hired. It can also be concluded that students who attended specialized public high schools and matriculated and declared a major in a similar field of study in which they already had knowledge and a greater level of skill were likely far more marketable and desirable candidates than those from a traditional public secondary school with no job-readiness skill or training.

Because Black college degree recipients are among the highest percentage of unemployed and underemployed job seekers, it is imperative that the U.S. Department of Education mandate—and hold accountable—school districts' measures to ensure that all high school graduates leave high school with some level of foundational knowledge and skills in some field of study. Labor economists, sociologists and other researchers have suggested the persistent 2-to-1 [unemployment] gap from various industries is linked to a 'skills gap' between Black and White workers (DeSilver, 2013). Research shows that students who participate in CTE programs, career academies, or similar college and career pathways programs in their secondary schools ultimately have stronger workforce skills and significantly higher earnings than students who do not participate in such programs (National Center for College and Career Transitions, 2014).

Limitations and Delimitations of the Study

All studies, whether quantitative or qualitative, have limitations and delimitations (Gall, Gall, & Borg, 2007). The limitations of the study are the issues or influences that the researcher cannot control. They are the shortcomings or conditions that place restrictions on the methodology and the results of the study. Limitations are best described as the circumstances, environment, or setting that could potentially change the results of the study when replicated. Therefore, it was necessary for the researcher to identify the limitations of the study. The limitations of this study can be found in the use of secondary data obtained from a four-year college in the Northeast region of the country for a different purpose.

The data contain variables the researcher had no control over like the number of participants who attended traditional, magnet and CTE schools. Another limitation was the varied poverty levels by school districts. The impact of these seemingly small limitations could significantly change the outcome of the study. For instance, the low poverty level could not be used to analyze SAT scores because of insufficient data.

Delimitations define the parameters of the study (Gall et al., 2007). In educational research the delimitations will frequently deal with such items as population/sample, treatment(s), setting, or instrument. For example, this study will be conducted in a four-year university in the Northeast region. The participants will be limited to Black students only ages 17 to 18 who graduated in 2016 from a traditional urban public high school, a magnet public high or a CTE public high school program. If the race or school types were different, it could produce very different results if the study was replicated.

Definition of Terms

For the purposes of clarity and consistency, the following terms were defined:

Academic Achievement: For the purpose of this study, academic

achievement is defined as students' reported GPA.

African American: For the purpose of this study, the term African

American is defined as any person that is of African descent.

- African American Students: For the purpose of this study, the term African American students refers to Black students that are born in American and have no immediate family relation to other nations or countries other than America.
- Black Students: For the purpose of this study, Black students refer to any student that is of African descent. This term includes African American, Blacks of African descent living in America, Caribbean of African descent, Hispanic of African descent, and Bi-Racial students.
- Career and Technical Education (CTE): For the purpose of this study, the term CTE, formerly known as vocational education, refers to a selection of structured, sequential courses designed for students to work in various industries without a postsecondary education.
- College and Career Readiness (CCR): For the purpose of this study, the term "College- and career-readiness includes mastery of rigorous content knowledge and the abilities to apply that knowledge through higher-order skills to demonstrate success in college and careers. This includes the ability to think critically and solve problems, communicate effectively, work collaboratively, and be self-directed in the learning process. More specifically, a student

who is college- and career-ready should: be prepared to succeed in credit-bearing postsecondary introductory general education courses or in industry certification programs without needing remediation; be competent in the Skills for Success (SFS) (includes learning, thinking, communication, technology, and interpersonal skills.); have identified potential career goal(s) and understand the steps to achieve them; and be skilled enough in communication to seek assistance as needed, including student financial assistance" (MSDE, 2015 & CCRScenter).

Magnet Schools: For the purpose of this study, the term magnet schools refer to public elementary and secondary schools designed to attract a diverse racial population based on the array of curricula it offers.

Traditional Schools: For the purpose of this study, the term traditional schools refer to schools that teach students primarily core courses: English, mathematics, science, and social studies.

Summary

Literature on the achievement gap and college and career readiness pertaining to Black students suggests a number of issues linger (Smith, 2005; Achievement Gap, 2008). The most pressing concern is the gravity of disparities in education for Black students and the implications that seem to be ignored at the federal, state, and district-level in terms of policy and accountability. For more than a half a century, equity has been an issue, and reform after reform has failed to improve the educational (and ultimately, socio-economic) gap for Black students nationwide. The most recent reforms address high achievement for all students and more accountability at the state, district and school level. However, Black students continue to lag in academic achievement because of the racially and economically homogenous schools they attend (Rothstein, 2014). Black students who attend high-poverty schools are least prepared and far less likely to be ready for college (FDPRI, 2015).

In all fairness, Black students should not be held to the same academic standards if they are not provided similar curricula, programs, resources and supports in their schools to help them flourish and excel academically to later take advantage of postsecondary opportunities that could enhance their life options. The implications of Black students not going to college because of academic deficiencies are grave and have generational consequences. Conversely, the implications of Black students who are provided the best educational opportunities are beneficial and have more positive generational consequences. To prevent a particular group of people from opportunities to enhance their lives and to impact society positively should be criminal because
hundreds of thousands of Black students are being robbed of a brighter future for themselves.

Given the known predictors (socioeconomic status or parents' level of education and income, as well as school-based predictors like acceptance, expectations and student/teacher relationships) of low academic performance among Black students (Smith, 2005) from years of research, next steps should focus on ensuring all schools are effective for all students. It is reprehensible to deny any student his or her right to a high-quality public education. Research conducted on successful urban schools has shown us what works to improve the academic success of Black students. It is time to enforce policies that will afford the most disadvantaged students more opportunities for achievement. Edmonds' (1979) 7 Correlates of Effective Schools have provided the foundation: (a) focused school mission; (b) instructional leadership; c) high expectations; (d) positive home-school relations; (e) time on task; (f) frequent monitoring of student progress; and (g) safe and orderly environment (History of Effective Schools). To our national, state and local leaders who oversee education policies for all students, in the words of the late Edmonds,

We can, whenever and wherever we choose, successfully teach all children whose schooling is of interest to us. We already know more than we need to do that. Whether or not we do it must finally depend on how we feel about the fact that we haven't so far.

(Lake Forest College, 2012)

CHAPTER II

LITERATURE REVIEW

The literature review in this study was designed to detail the effectiveness of traditional versus specialized high school programs in preparing Black students for college. The expectation of a quality education is to prepare students for success after high school graduation. Regardless of the types of schools students attend, they are expected to acquire content knowledge and skills beginning from pre-k through grade 12 to prepare them for college or work. Thus, this paper discussed college and career readiness and themes around lack in relation to what some Black students are missing at their public high schools throughout the country. This study also described the basic characteristics of traditional, magnet and career and technical education (CTE) programs and used the results to see which schools seem more effective in preparing Black students for college.

Literature surrounding college and career readiness (CCR) as it relates to Black students and its long-term relevance is extensive. My research investigated the impact of traditional high schools and magnet and CTE programs on Black students' college and career readiness. For the purpose of this study, the participants are Black students categorized as African American, people of African descent living in America, Caribbean, Hispanic of African descent, and Bi-Racial. Throughout the study, however, the term Black will be used in reference to cited literature.

School Types

In looking at school types to investigate the effectiveness of those schools in preparing Black students for college, new data have become available. Recent data show that nearly 90% of America's schools are traditional public schools, while special interest programs (magnets, science or math, performing arts, gifted/talented, foreign language), and career/technical/vocational school programs (primarily serves students being trained for occupations) comprise a very small, but significant, percentage (Taie & Goldring, 2017).

These school programs are relative to this study and will be defined for clarity and will be followed by the three key themes that continue to rise from the literature around college and career readiness among Black students. The themes include a lack of essential academic achievement, a lack of crucial information, resources and/or opportunities to prepare students for realistic college and career goals, and a lack of access to career/technical content knowledge and programs.

Ultimately, there are economic implications that will benefit not only students, but also the country when Black students are prepared for the rigors of college. Conversely, there are economic implications for students and the country when students are not adequately prepared for the rigors of college (Moore, Slate, Edmonson, Combs, Bustamante, & Onwuegbuzie, 2010). In 2014, a grim five percent of Black students who graduated high school and took the ACT that year met all four of the ACT College Readiness Benchmarks demonstrating academic readiness for college-level English, math, biology and social sciences. Only 17% met one benchmark, and an alarming 62% of these students met none (FDPRI, 2015). Traditional urban school districts in this country are comprised of the highest number of Black and other minority students (Jacob, 2007).

As a result of these students not being fully prepared for college, they either stay in school longer than their peers of other races, or worse, they drop out of school at a higher rate than their peers of other races. Reports show that students enrolled in remedial courses are far less likely to graduate from college (Butrymowicz, 2017; Marcus, 2018; Moore, Slate, Edmonson, Combs, Bustamante, & Onwuegbuzie, 2010). Thirdly, it is estimated that by 2020 two thirds of jobs will require college experience, with 30% of those jobs requiring at least a bachelor's degree and 36% of jobs requiring at least some college or an associate's degree (Carnevale, Smith, & Strohl, 2013).

Literature suggests Blacks (and other minorities) who earn a college degree reduce poverty and close wealth gaps between people of color

31

and Whites in this country (Shapiro, Meschede, & Osoro, 2013). If CCR is ultimately to attain post-secondary credentials, it is for these reasons that it is necessary to look at the preparedness of Black students who attend different types of school programs. Furthermore, since wealth is a factor that determines the types of educational experiences students have, it has the propensity to change the outcome for future generations of Black and minority children. To ignore the college ready outcomes between traditional, magnet and CTE programs could potentially have grave consequences for the life and future of these students.

Traditional or Urban Schools

Several decades after the Elementary and Secondary Education Act of 1965, education in the United States is still far from equal for Black students. The National Center for Education Statistics (NCES) describes traditional schools as high-poverty schools where more than 75% of their students qualify for free or reduced-price lunch. During the 2015–16 school year, 25% of the nation's 98,280 public schools were high-poverty. That same year, 24% of the nation's 91,420 traditional public schools were highpoverty (6,860 were public charter schools, and 35% were high-poverty) (NCES, 2017). Urban schools can be defined as public schools located in large central cities serving a majority of this country's low-income, minority students (Jacob, 2007, pp. 130-131). Historically, traditional public schools teach students little beyond the core courses: English, mathematics, science, and social studies (Iorio, 2011; Mirel, 2006).

When looking at traditional urban school districts, the inequities have remained relatively consistent for decades. Nationwide, the characteristics of these schools are very similar. When referencing urban schools in any context, they bring with them certain beliefs about the people who attend these schools, the life experiences of these students, as well as the learning, academic performance and life options these students will have. According to Logan and Burdick-Will (2017), sadly,

American public schools remain highly segregated despite major changes in the 1970s, when court orders and new expectations eliminated de jure segregation. A primary consequence of segregation is the high level of inequality in educational opportunity between White or Asian children, and Black or Hispanic children. (p. 200)

Data from the U.S. Department of Education (2014) for the 2012-13 school year show only eight percent of White students attend a high-poverty school (75% or more students eligible for free/reduced-price meals—FRPL) in this country while about 29% of them attend a low-poverty school (25% or fewer students eligible for free/reduced-price meals—FRPL). Conversely, the percentage of Black students attending a high-poverty school is 45%, while eight percent attend a low-poverty school. (Snyder & Musu-Gillette, 2015).

NCES (1996) data reported from 1987-88 show that, on average, enrollments at both the elementary and secondary levels were larger at urban schools than suburban schools, and urban teachers had fewer resources than suburban teachers. Urban teachers also had less control over their curriculum than suburban teachers. The report suggested students in urban public schools were less likely than most other groups to have attended schools that offered gifted and talented programs. This trend has continued and may be attributed to the schools' expectations of its students or to lack of funding for additional resources and programs. Notably, student behavior problems were more common in urban schools than in other schools. Consequently, when looking at morale as an indicator in the 1987-88 study, teacher absenteeism was more of a problem in urban schools than in suburban (NCES, 1996).

Recent data show that, nationally, 28% of teachers are absent annually from traditional schools (10% from charter schools), which affects student learning. Ten days off is the equivalent of ten days students are not learning (Griffith, 2017). While the pay was relatively equitable between teachers in both school districts, administrators of urban schools had more difficulty hiring and retaining highly-qualified teachers than their counterparts in other schools (NCES, 1996; CTQ, 2010).

More inconsistencies are revealed in the funding of urban schools. And a funding gap between school districts is a significant factor when considering hiring teachers and other staff members to meet the needs of individual schools and the resources necessary to provide all students a high-quality education. "In both 2002 and 2011, the 10 poorest schools on average spent 30% of what the 10 richest schools spent on average to educate each student, according to the analysis" (Russo, 2011, p. 1). The aforementioned factors likely indicate why some—not all—urban schools fail to adequately educate and prepare Black students for college or career beyond high school graduation.

Magnet School Programs

Magnet schools, initially intended to desegregate schools, can be defined as public elementary and secondary schools designed to attract a diverse racial population based on the array of curricula it offers. Because desegregation efforts continue to be a significant mission for magnet school programs (USDE, 2017), these programs cover a range of subjects like science and technology, business or law, communications and humanities, or the arts (CSDE, 2017). Some magnet schools throughout the country require students to pass a test or demonstrate knowledge or skill in the specialty in which they desire to participate in order to qualify to attend that particular school, while others are open to students who express an interest in that area.

Magnet Schools of America (2017) explains the benefits associated with attending magnet schools, which include as its priority: improving academic achievement; diversifying student enrollments; formulating innovative curriculum; hiring specialized teaching staff; attaining higher attendance rates and graduation rates and lowering dropout rates. Magnet schools have above average success with parental involvement, which has been linked with student achievement, as well as more themebased education and specialized programs, which is linked to student engagement all the while providing a sense a safe learning environment. According to Siegel-Hawley and Frankenberg (2011), students who attend magnet schools have higher graduation rates than students attending traditional public schools. Likewise, students who attend specialized career academies are most strongly associated with increased graduation rates (Gehring, 2000; Vanderkam, 2009).

At its core, "magnet schools are founded on the five pillars of diversity, innovative curriculum and professional development, academic excellence, high quality instructional systems and family and community partnerships" (Magnet Schools of America, 2017, p. 1). In an examination of eight exemplary magnet schools that had diverse student populations, including students with disabilities, students were performing at proficient levels across the board—on their state's assessments and content standards. The model schools serve a diverse student body that reflects their district's race, ethnicity, and socioeconomic status, and they succeed in reducing, or eliminating all together, minority group isolation. These schools also achieved adequate yearly progress (AYP) for three years. And these schools used a rigorous magnet focused curriculum that applies to all students (USDE, 2008).

As of 2016, there are 4,340 magnet schools serving a diverse population of students in all zip codes in 46 states (Magnet Schools of America, 2017). Magnet schools may be a great way to desegregate the re-segregated public schools that Black students attend in urban cities throughout the country. The five pillars of the magnet school model are consistent with the seven correlates previously defined by Ron Edmonds' Effective Schools Theory. If the mission of magnet schools is truly to provide a quality education to a diverse student body, it likely aspires to create an environment in which Black students are not only seen as equal human beings but also have equal access to the same learning outcomes and rights and privileges that characterize the school (Edmonds, Cheng, & Newby, 1978, p. 1). The magnet school model, as well as the correlates, recognizes the value in innovative curricula, strong leadership and instructional teams, and teacher, family, community who are vested in the academic achievement of Black students.

Career and Technical Education (CTE) Programs

The Career and Technical Education (CTE) program in America was first authorized as the Smith-Hughes Act of 1917 and has been reauthorized a number of times since (Vocational Act of1973; Perkins Act of 1984; Perkins II, 1990; Perkins III, 1998) to meet the growing needs of the workforce and the evolving technological advancements of U.S. industries (PCRN, 2018). The Act, formerly known as vocational education, offered students a selection of structured, sequential courses to work in various industries without a postsecondary education (NCES, 1990). Today, CTE can best be defined by as a sequence of courses and activities designed to provide students with rigorous content knowledge in core courses as well as technical knowledge and skills (that promote higher-order reasoning, problem-solving skills, work attitudes, and employability skills) necessary for industry certification, postsecondary education or the workforce (Threeton, 2006).

In "Workforce Education Issues for the New Century," Finch (1999) suggested that legislation such as the Carl D. Perkins Acts can inspire educators to challenge themselves to imagine new and engaging ways to instruct students with a more meaningful, relevant, and cohesive curriculum. With the passing of the Carl D. Perkins Career and Technical Education (CTE) Improvement Act of 2006 (Perkins IV) signed into law by President Bush, the goal of CTE programs was to integrate academics and technical standards to prepare students for potential careers (ACTE, 2006). However, the Strengthening Career and Technical Education for the 21st Century Act (Perkins V), the most recent reauthorization of the Carl D. Perkins Act, occurred July 2018. The goals are to modernize education, improve and increase national CTE programs, and provide more apprenticeships and work-based learning programs to strengthen the workforce (The White House, 2018). Clearly, the long-standing history of CTE programs may be indicative of its benefits and/or success and may be as vital as magnet programs.

CTE programs often deliver similar benefits as magnet programs such as links to student engagement in theme-based curriculum and higher graduation rates. These programs also have become more prevalent and "provide high school and community college students an opportunity to pursue a sequential technical and academic program of study leading to advancement in a career field" (Maryland CTE, 2016, p. 1). Such programs provide Black students myriad choices; however, the literature reviewed indicates that many urban school districts offer fewer programs than suburban school districts. For students of color attending CTE schools, the experience was positive. In the report Career and Technical Education in New York State: Final Evaluation Report 2005-06, it stated:

Significantly more minority students in CTE programs than in non-CTE programs felt that high school was a relevant and meaningful experience. More Black and Hispanic students in CTE programs rated their high school experience as relevant to their lives, than did their peers in non-CTE programs. We also found that fewer minority students withdrew from CTE programs than from high school in general. If the CTE experience contributed to their perception of high school relevance, then it appears that they were more likely to persist to graduation. (p. 7)

Equally important as the positive experiences and persistence rates of CTE students, is the academic rigor (which prepares students for college and work) that is present in the curricula and in the coursework. Samples of the CTE curricula showed that by and large, commencementlevel academic content (86% for ELA and 71% for math) corresponded with, and in some cases exceeded, the New York State (NYS) Learning Standards that demonstrate rigor. Students were able to engage in authentic learning experiences that challenged them to think critically and to ascertain complex applications of language and quantitative skills embedded in the ELA and mathematics content (Career and Technical Education in New York State: Final Evaluation Report 2005-06, 2006).

When schools incorporate rigorous curricula (USDE, 2016) into their academic programs, it is often a testament of the leadership team's high expectations of the students they serve. Leadership, high expectations, and rigorous content are all correlates of effective schools, but the success of the school begins with the effective leadership of the principal who is the visionary, facilitator, and team builder of the school community (Bauer, 1997; McCreight & Salinas, 2002). Moreover, with a graduation rate of 93% compared with the nation's graduate rate of 80% (USDE, 2014), it is conceivable that more CTE schools in this country could make a huge difference for the academic achievement and college and career preparedness of Black students than traditional schools currently do.

Access to Rigorous Courses

Literature shows there is a link between taking advanced placement tests in high school and success as a first-year college student (Long, Conger & Latarola, 2009 & 2012; Klopfenstein & Thomas, 2009); however, no definitive correlation can be made of its ability to accurately predict reliable outcomes for all. Nonetheless, college entrance tests remain at the forefront as an indication of high-achieving and highlymotivated students (Klopfenstein and Thomas, 2009). To foster CCR for America's students, educational reforms are on the rise and include more opportunities for college access. Increased emphasis has been placed on increasing the availability of advanced placement (AP) courses and international baccalaureate (IB) programs and raising academic standards through the implementation of the Common Core State Standards Initiative. Yet, given these reforms, literature on CCR continues to show a disproportionate number of Black students do not have access to AP or IB programs (College Board, 2014; Havis, 2015; Saaris & Theokas, 2013; U. S. Department of Education, 2014).

"It turns out that more than half a million low-income students and students of color are 'missing' from AP and IB participation—students who would benefit from these advanced opportunities if they participated at the same rate as other students" (Saaris & Theokas, 2013, p. 1). Black students who elect to take such rigorous courses fail to take the AP test or fail to pass the test at a significantly higher rate compared with other racial groups. In fact, "the number of Blacks taking academically challenging Advanced Placement courses in high school has surged in recent years. The bad news is that the racial scoring gap on Advanced Placement tests continues to be large and in fact has increased in recent years" (JBHE, 2008, p. 1), arguably due to the severe lack of access to rigorous courses needed to do well on such college readiness assessments (U.S. Department of Education, 2014).

When Black students elect to take AP or IB courses when they are available in their schools, these students often find themselves among a small number, if not the sole student, of same-race students participating in rigorous courses. Mayer (2008) recognizes that students of color are not well represented in advanced courses but stated that when she observed an IB program in an urban school with an open admission policy, Black, minority and disadvantaged students were among the participants willing to take the course. Her observations were that Black students and other students of color want to participate in opportunities like this at their high schools. Mayer attributes the success of these students to the IB teacher who was heavily vested in their success in the program.

Literature continues to show that Black students perform lowest of all seven racial groups tested on college entrance exams with Asian Americans and White students, respectively, far exceeding their peers in other racial groups (JBHE, 2016; JBHE, 2018). To be considered college and career ready, according to a College Board report in 2015, students should have a combined SAT score of 1550 out of 2400. The average score for Black students was 1227, for Asian American 1654, and for White students 1576 (Inside Higher Education, 2015). Despite the grim reports on college exam assessments, the National Center for Education Statistics' data continue to indicate an upswing in the number of Black students graduating high school (68% during the 2011-12 school year and 76% during the 2015-16 school year) (NCES, 2013).

With the increased graduation rates and low SAT scores, it is not surprising that Black students represent the greatest number of students who take remedial courses—30% (29% for Hispanic students)—upon matriculating into a postsecondary institution (USDE, 2016). "Looking at students' race and ethnicity, [there are] disparities in access to higher education. Black and Hispanic students are less likely to be enrolled in college, and far less likely to be enrolled in selective and four-year institutions, than their White and Asian peers" (p. 14).

Access to High School Guidance Counselors

Black students, particularly in urban schools, seemingly fail to recognize the importance of grades and academic success in high school in preparation for college and career. Without guidance, students often do not realize that not taking rigorous courses beyond the graduation requirements hurts their college prospects (Reid & Moore, 2008; Welton & Martinez, 2014). In the report "Building a Bright Future: Understanding College Readiness in Baltimore City Public Schools," (Schoenberg, 2015) themes that were identified from student participants in this urban school district include, but are not limited to, students wanting an idea of the college experience and college expectations; students wanting access [or equal access] to college counseling and advising services; and students wanting more information on planning and financing college.

It is noteworthy to mention that these student participants do not want their school counselors having low expectations of them. "Students believe strong advising is key to college preparation. Every high school should offer college preparation (Schoenberg, 2015, p. 9). And, as mentioned previously in the report on CTE in New York, students who participate in CTE programs receive more college preparation than non-CTE students (Career and Technical Education in New York State: Final Evaluation Report 2005-06, 2006).

For equitable outcomes for all students, the College Board National Office for School Counselor Advocacy (2010) outlined eight components of college and career readiness counseling. These components are the expectations of school counselors as leaders and education champions for students, and the goals include (a) college aspirations; (b) academic planning for college and career readiness; (c) enrichment and extracurricular engagement; (d) college and career exploration and selection processes; (e) college and career assessments; (f) college affordability planning; (g) college and career admission processes; and (h) transition from high school graduation to college enrollment. When looking at the roles and responsibilities of guidance counselors and how they are expected to serve public school students in terms of academic, college and career planning, it is unfathomable that an astounding 20% of high schools have no school counselor at all (USDA, 2014a). Black students, particularly those who attend high-poverty schools, yet again, lack this basic necessity to be college ready.

When looking at college aspirations, nearly 85% of Black students desire a college degree; however, there is a steep gap between their college aspirations and their college readiness. Sadly, the majority of Black students who do take the core requirements in high school are still less likely to meet ACT College Readiness Benchmarks (FDPRI, 2016). These benchmarks are scores which characterize the level of achievement students are required to have for a 50% chance of obtaining a B or higher or about a 75% chance of obtaining a C or higher in corresponding credit-bearing post-secondary courses (Clough & Montgomery, 2015). Black students need guidance counselors to help them navigate the pathway to college because many of them are not equipped with the knowledge to do this alone. They are not aware of even the little things that might make them more college ready, such as extracurricular activities. Research suggests "educationally purposeful activities are positively linked to desired outcomes for all types of students; historically underserved students and those who are less well prepared tend to benefit even more" (Kuh, 2006, p. 8).

Although Black students aspire to attend college, they may know little about career industries or what major they will have in college, hence the need for a guidance counselor. Between 20 and 50% of matriculating students do not immediately declare a major. Deciding on a career path and choosing a major that is right for students entail selfawareness, self-reflection, an understanding of their personal goals and research (Freedman, 2013). When it comes to assessments for college, funding for college, and applying to colleges (even transitioning from high school to college), Black students and their families need to be educated around these processes as they are tedious, time consuming, and driven by deadlines. It is the school's responsibility to ensure students and families have the wherewithal to accomplish this momentous task.

Because high school counseling services are critical to Black students' college and career access, it is essential for these students to have ongoing access regardless of the high schools they attend. Yet, the most recent data for the 2014-2015 school year show the average student counselor ratio in the United States is 482:1 (ASCA, 2017). It makes no sense to have a guidance counselor in a school if students cannot receive guidance. In a national study conducted by American School Counselor Association (2009) titled "Who Sees the School Counselor for College Information? A National Study" the authors investigated students who seek the guidance of school counselors to receive college information. While the results indicated that Blacks and female students were more likely to contact the school counselor for college information, students in high-poverty, large schools and schools with smaller numbers of counselors were less likely to seek school counselors for college information.

Who Sees the School Counselor for College Information? A National Study (Bryan et al., 2009) measured the college and career outcomes for students who had access to guidance counselors and those who did not have access to guidance counselors. Research has indicated that the college plans of low-income students and students of color (e.g., African American and Latino students) are more likely to be influenced by their high school counselors; however, these students are least likely to have school counselors, more likely to have underprepared counselors, and most likely to have counselors who are forced to give up college counseling for other counseling and non-counseling-related tasks (Cabrera & La Nasa, 2001; McDonough, 2005b; Plank & Jordan, 2001; Trusty & Niles, 2003). Students of color face many challenges in their pursuit of the American Dream. And in the 21st Century, Black students' upward mobility is heavily dependent upon their access to career and technical knowledge.

Access to Career and Technical Content

Far too many students, particularly Black students, leave traditional public high schools without the basic content knowledge, skills, or habits of mind they need to succeed in either college or work (Bloom, Boersch-Supan, McGee, & Seike, 2011; Conley & McGaughy, 2012). David Conley (2003) describes these habits of mind as necessary to succeed in both college and career: "critical thinking, an inquisitive nature, a willingness to accept critical feedback, an openness to possible failure, and the ability to cope with frustrating and ambiguous learning tasks" (8). Students feel ill prepared for both college and work after high school (Schoenberg, 2015).

A 2006 poll of at-risk California ninth- and 10th-graders found that six in 10 respondents were not motivated to succeed in school. Of those students, more than 90% said they would be more engaged in their education if classes helped them acquire skills and knowledge relevant to future careers (Hart, 2006). In 2014, the final report of a 4-year, longitudinal study conducted in KY comprised of 6,638 students in grades 9-12 from three large urban school districts in three states was published with favorable CTE outcomes. The following CTE outcomes were not only positive, but also consistent with the literature among the CTE program of study (POS) intervention group compared with the non-CTE group in measures of student attendance and achievement on state academic assessments (Castellano, Sundell, Overman, Richardson, & Stone, 2014), which likely was indicative of improved school attendance.

When examining additional findings, Castellano et al. (2014) discoveries revealed that POS offered students more rigorous, engaging instruction in academic and technical content areas. The content students gained was then combined with opportunities for students to apply their knowledge and skills to solve real-world problems, earn college credits, familiarize themselves with careers, and connect with local businesses and community partners. More importantly, the POS appeared to be enhanced by "school cultures, organizational structures, and instructional practices that emphasize academic and technical achievement, high expectations and preparation for life after high school" (p. 1). It is worth noting that the aforementioned features of the program are all consistent with Edmonds' correlates of EST (Edmonds, 1979 and Lezotte, 1991) to acquire Conley's 4 Keys of CCR (Conley, 2012).

According to The National Center for College and Career Transitions (2014), it appears that specialized secondary schools, more than traditional public schools, can potentially increase the college matriculation rate for Black students because students have said that they would be more inclined to work harder if their classes were more aligned to college and career skills, thus, making them more desirable candidates after graduating from college. Ultimately, Black students desire to have access to courses and resources that will enhance their college and career readiness while still in high school (FDPRI, 2015; 2016).

CTE programs prepare students for postsecondary certificates, associate's degrees in CTE fields, four-year colleges or work in their field of interest. "Today's cutting-edge, rigorous and relevant career and technical education (CTE) prepares youth and adults for high-wage, highskill, high-demand careers in established and emerging industries" (ACTE, 2017). There are 16 Career Clusters to interest most students and prepare them for industry certifications upon course completion. CTE programs are a great way to secure the economy through business partnerships to prepare students for tomorrow's workforce. The programs provide a robust academic component to fulfill core knowledge as well as technical knowledge and skills. This is an ideal program for the 21st century as it propels students to the next level after high school graduation (ACTE, 2017).

College Readiness Framework Defined

In looking at college readiness to investigate the effectiveness of traditional, magnet and CTE public high schools in preparing Black students for college, the term college and career readiness (CCR) needed to be clearly defined, and David T. Conley, a widely-known education researcher, is one of the leading authorities on CCR, which is a common term that refers to college readiness. In A Complete Definition of College and Career Readiness (2012), Conley said that "A student who is ready for college and career can qualify for and succeed in entry-level, credit-bearing college courses leading to a baccalaureate or certificate, or career pathway-oriented training programs without the need for remedial or developmental coursework" (p. 1). He developed a model consisting of more than ten years of research called the Four Keys to College and Career Readiness (CCR) to determine whether students could succeed in college and in a career. The Four Keys terms are Think, Know, Act, Go.

Key Cognitive Strategies (Think): Think refers to students' need to be able to process, examine, manipulate, organize, synthesize, question, and present information. Thinking requires more than rote memorization; it goes beyond the realm of retaining and applying information. There are five key cognitive strategies that embody these patterns of thinking that

52

students will need in college and career. They are (a) problem formulation: hypothesize and strategize; (b) research: identify and collect; (c) interpretation: analyze and evaluate; (d) communication: organize and construct; and (e) precision and accuracy: monitor and confirm. Students need opportunities to be able to think in different ways to later draw on such modes of thinking as they complete work after high school (Conley, 2013). A study was conducted to examine the psychometric properties of the key cognitive strategies (KCS) using a cross-validation approach and resulted in five reliable self-measuring factors: (a) problem formulation; (b) research; (c) interpretation; (d) communication; and (e) precision and accuracy. The five-factor solution is consistent with earlier validity studies of the KCS framework" (Lombardi, Conley, Seburn, & Downs, 2013).

Key Content Knowledge (Know): Know refers to students' need for solid acquisition of content knowledge and understanding of the "big ideas" in core academic subjects. It also requires they understand the structure of knowledge, which pertains to retaining information. Other essential components are technical knowledge and skills associated with career goals and the value associated with persistence in learning core content. Equally important, students should recognize that success at learning requires their continued applied effort (Conley, 2012). Key Learning Skills and Techniques (Act): Act refers to students' need for self- awareness, motivation, persistence, and self-efficacy. It will also require them to seek help and collaborate with others. They must have skills and techniques necessary to take responsibility for successfully managing their learning beyond high school. If not, students will remain dependent learners and will struggle when expected to work independently in college or in their career.

Key Transition Knowledge and Skills (Go): Go refers to students' preparation for college or a career after high school. Students must have the wherewithal to navigate the pitfalls they will endure if they wish to make a successful transition from high school to the real world. They must be able to cope with myriad issues of varying scope as well as know when and how to advocate for their own best interests (Conley, 2017).

In reviewing Dr. Conley's Four Keys to CCR model, there is no ambiguity in what all students are expected to know and do upon graduating from high schools throughout the nation. Conley's model seems to substantiate and logically align with the CCR indicators established and implemented at the national level decades ago. The indicators include the use of academic-based assessment scores like the SAT/ACT, students' participation in rigorous classes including advanced placement (AP) or International Baccalaureate (IB) courses, their grade point average (GPA), class rank, and even attendance to demonstrate their college and career readiness.

Thus, it is no surprise then that today's generation of students is frequently tested and evaluated for all types of educational purposes which often require some form of quantitative analysis. This evaluation may consist of questions about the quality of their education or their educational progress (Tanner, 2012). This researcher's study is no different as it will investigate two CCR indicators: the GPA and the SAT college entrance test scores of Black students to ascertain their college and career preparedness after graduating from traditional, magnet and career and technical education (CTE) public high schools.

One of the most common indicators to suggest college and career readiness is students' scores on either or both the SAT and ACT, which are college entrance exams. SAT scores range from a combined score of 400 as a minimum total for reading/writing and math to a combined score of 1600 as a maximum total (College Board, 2017). Scores for the ACT range from 1 to 36, and the subjects this test covers are English, math, reading, and science. "Scores on the ACT subject-area tests represent the level of achievement required for students to have a 50% chance of obtaining a B or higher or about a 75% chance of obtaining a C or higher in first-year college courses. These college courses include English composition, college algebra, introductory social science courses, and biology" (ACT, 2017). Ultimately, the higher the college entrance scores on both exams, the better options students will have in selecting the best or more "selective" post-secondary institutions for themselves.

While many colleges and universities in the U.S. require students to submit these scores, some post-secondary institutions no longer use them as a sole indicator for college admittance and look at other indicators (College Board, 2017). Grade point average (GPA), class rank, and attendance are also important indicators that help college admissions offices make decisions on who gets admitted and who does not. While rank is among the list of CCR indicators, its value is also changing in its significance as an indicator. A student's rank is a compilation of courses, such as AP, honors, college-preparatory or regular education courses and the grade the student earns in each class, which is then converted into a student's GPA.

It is common knowledge that the higher a student's GPA, the higher the student's class ranking. What may not be common knowledge is the variation in how the above classes are weighted/graded in schools across the country leading to potential inaccuracies in rankings that have steered some high schools and colleges from their use. For example, a student who takes all AP courses in 12th grade and earns all B grades may rank lower than a student taking all regular education classes and earns all A grades. The GPA has remained relatively consistent and unchanged as a college admissions requirement (College Board, 2017). The research of Hein, Sambolt, and Smerdon (2013) suggests that maintaining a GPA at or greater than a 3.0 in high school, passing state high school exit exams and college entrance exams are all correlated with enrolling in and successfully completing credit-bearing, entry-level college courses.

Equally important for success in college and a career is attendance. According to National Center for Education Statistics (NCES) (2009), missing school even for a day is a missed opportunity for students to learn and engage in the learning process. "In this era of increased accountability for states, districts, and schools, the connection between student attendance and learning is being studied more than ever before" (2009). Missing fewer than fifteen days, according to 2013-2014 Civil Rights Data Collection (CRDC; Jacob & Lovett, 2017), or "missing no more than 10% of school days per grade level is primarily associated with on-track high school graduation" (Hein et al., 2013, p. 7).

In addition to these more common indicators, greater emphasis has been placed on providing all students in all schools nationwide challenging classes that will prepare them not only for college, but also for 21st century careers. As such, students need more opportunities to develop their thinking skills by taking rigorous classes during their high school years. For students who take AP/IB exams, "scoring a 3 or higher on Advanced Placement (AP) final exams or a 4 or higher on the International Baccalaureate (IB) final exam is positively correlated with college enrollment and persistence rates in the first two years of a degree or certificate-seeking program" (Hein et al., 2013, p. 7).

Effective Schools Theory Framework Defined

When thinking of the gaps in research around Black students' lack of academic attainment for college and career, there are other factors like environment, community poverty, family stability and school structures (Stewart, 2007) that have been considered for decades. The Equal Educational Opportunity Survey of 1966 (also called The Coleman Report) suggested a student's family background was the primary determinant of student performance and academic achievement (Edmonds, 1983). This researcher believes the findings in the Coleman Report, although fifty years later, may have influenced the beliefs of a nation of White teachers and school administrators who, whether consciously or unconsciously, are part of an institutionalized racial system and make up the majority of the nation's teachers and school leaders. Results from the 2015-16 National Teacher and Principal Survey show that 80% of teachers are White and a similar number represent the nation's principals (Taie & Goldring, 2018). In 2014 (for the first time in history), just over half of the student population in the U.S. are non-White (Pew Research Center, 2014). Given this new student demographic, which is expected to grow, it is especially important to discount the Coleman Report and implement the correlates of EST established by Dr. Ronald Edmonds to close the achievement gap.

Relevance and Explanation of the Correlates Used

It is relevant here to support Edmonds' findings that schools foster student learning and academic performance with another highly-profiled study conducted with similar findings in London. The study, comprised of twelve inner-city schools with a wide range of characteristics (big/small, new/old, co-ed/single-gender, Inner London Education Authority/Catholic or Anglican) in London, was to see what effect secondary schools had on its students living in economically depressed areas (poor housing conditions, a disadvantaged home life, high immigrant population, and high crime). In *Fifteen Thousand Hours* (Rutter et al, 1979), a British study that asked two simple, yet relevant, questions was published. They are Does it matter which school a child attends? and If systematic differences between schools should be found, what are the features of school that matter? As part of the study, Professor Rutter and his colleagues measured four specific outcomes: academic achievement, student behavior, attendance, and delinguency.

The outcome of the research concluded that consistently over a period of four to five years, schools that performed well and schools that did not, had more to do with the individual characteristics of the schools themselves than with the individual students and their parental economic status (Rutter et al., 1979). The research team identified forty-six, in-school processes that helped them conclude what factors were positively correlated with successful school outcomes. These include the amount of time teachers spend teaching their class; the homework teachers assign for additional practice and routinely grade; the lessons that start on time and run from beginning to end; the clear schoolwide standards (and consequences) of student behavior rather than different individual teacher standards; the public recognition students receive for achievement and public display of student work; the opportunities students were given to demonstrate responsibility in their schools; the administrators and teachers convening around school policy and practice; and the schools appearance (Rutter et al., 1979).

When looking more closely at the correlates defined by Dr. Ron Edmonds several decades ago, there are vast similarities in Rutter's study on effective schools during that same time. Given what is known today, low-performing public schools may not consistently implement the specific characteristics identified in effective schools which correlate with the success of students who attend such schools. Thus, the correlation between these characteristics identified in schools and students' learning and academic success have become known as correlates by researchers (Lezotte, 1991). Over time, schools that consistently demonstrate the implementation of Edmonds' correlates and that demonstrate progress are typically recognized as an effective school.

More current examples of effective schools that adhere to the EST include New York's "No Excuses" charter schools. In a recent study that looked at 39 charter schools, "an index of five policies suggested by 40 years of qualitative case studies—frequent teacher feedback, data driven instruction, high-dosage tutoring, increased instructional time, and a relentless focus on academic achievement—explains roughly half of the variation in school effectiveness" (Dobbie & Fryer, 2013, p. 29). Let's look deeper at the correlates that can help schools minimize or eliminate the barriers Black students encounter to better prepare them for college and other post-secondary options for social mobility.

High expectations for all students without exception

High expectations in an effective school can best be explained as a school where the staff wholeheartedly believes that all students can master the curriculum and that the teaching staff has the knowledge and skills necessary to ensure students obtain that mastery (Lezotte, 2001). Equally important in high performing schools, students are provided a challenging curricula and rigorous coursework, and it is expected that they will succeed. In high performing schools all students are viewed as assets with unique gifts and talents to offer society (Bauer, 1997).

Now, consider examining Lezotte and Bauer's definition of high expectations in highly effective schools when looking at the country's high-minority/high-poverty public schools. This perspective may reveal a startling reality of high expectations in schools serving Black and other minority students. The five assertions made about high expectations in effective schools will now be posed as questions to ponder of schools (and districts) serving poor Black students: Do staff wholeheartedly believe that all students can master the curriculum? Does the teaching staff have the knowledge and skills necessary to ensure students obtain mastery? Are students provided a challenging curricula and rigorous coursework? Is it expected that they will succeed? Are these students viewed as assets with unique gifts and talents to offer society?

For a comprehensive understanding of education in America, it is essential that the response to high expectations in high-minority/highpoverty schools first be examined from a historical context that begins and ends with race. Inequities continue to widen the gap between poor schools and affluent schools. While education has been said to be the

62
great equalizer to access in this country, students in America are being denied a high-quality education due to a systemic pattern of racism. Racism, a derivative of race, can be described as "a vast system that structures our institutions and our relationships" (Vaught and Castagno, 2008, p. 96). Similarly, institutional racism (or structural racism) can be defined as "a persistent and long-standing social condition within organizations" (Walter et al., 2016, p. 216). So, no, it is not likely that the same level of high expectations is distributed evenly among schools.

Regarding teacher skills and knowledge, "teachers in urban schools, particularly urban schools serving poor and minority children, are less qualified than their suburban colleagues in terms of such conventional measures as experience and educational background" (Jacob, 2007, p. 137). While this does not address their expectations of students or definitively mean they are less effective, research does suggest that teachers who are not certified, received alternative certification or are new to teaching are likely to be less effective in their first couple years of teaching. Using data from Tennessee, researchers discovered that when students have an average teacher compared with a teacher rated in the 85th percentile for three consecutive years, the difference for students is an increase of about 50 percentile points more on achievement tests (Jacob, 2007). Schools teaching this demographic need to hire and retain more traditionally trained, content-savvy, highly-effective teachers to teach Black students the content knowledge and skills they need to mastery levels so they graduate high school college and career ready.

When Black students are denied access to the high-level courses required to prepare them for college, it appears that adult leaders in education lack confidence in their intellectual ability to excel—unless there are other underlying factors these courses are not made available to them. It is incomprehensible that in 2013-14, only 33% of high schools with high Black student enrollment offer calculus nationwide, compared to 56% of high schools when fewer minority students are enrolled. Nearly 50% of high schools with high Black student enrollment offer physics, while close to 70% of high schools with lower minority enrollment do. Chemistry is offered in 65% of high schools with high Black student populations, compared to 78% of high schools with lower minority student enrollment. Finally, 71% of high schools with high Black student enrollment offer Algebra II, compared to 84% of high schools with low Black and Latino student enrollment (USDE, 2016).

Science and math courses are essential in the age of evolving technologies in STEM fields where positions are held by primarily White males. These lower-level courses not only prohibit students from doing well on college entrance exams, but they also deter Black students from

64

majoring in science- and math-related industries even though they may be interested in such career paths. Exposure to CTE and magnet school programs could potentially change the paradigm for these students and other minorities when it comes to career pathways.

Educators should want the best for all students and should have high expectations of them but, instead, Black students are expelled from school at disproportionately high rates: (a) Black students are 1.9 times as likely to be expelled from school without educational services as White students; (b) Black boys represent 8% of all students, but 19% of students expelled without educational services; and (c) Black students are 2.2 times as likely to receive a referral to law enforcement or be subject to a school-related arrest as White students. (U. S. Department of Education, 2016, p. 15)

It seems evident that assumptions are made about Black and other minority students who attend schools in certain communities. Black and brown students have been blatantly overlooked for several decades when it comes to high expectations and high achievement, and the lack of both appears to go unchanged year after year. The evidence is in the numbers! To solidify the argument for this paper as it investigates the effectiveness of three school types in preparing Black students for college, alternative solutions for academic and personal success are warranted.

Strong instructional leadership

Instructional leadership is only partly about a curriculum and perhaps more about how principals and teachers work together as a team to ensure that every day high expectations for student achievement are demonstrated in every grade, and in every classroom (Milliken, Ross, Pecheone, & Darling-Hammond, 2004). Strong, effective leaders are essential to run and maintain an effective school. Instructional leadership, in particular, requires that the principal (and the administrative team) "understands and applies the characteristics of instructional effectiveness in the management of the instructional program" (Lezotte, 2001, p. 5). The principal must consistently convey to staff, students and families the mission as it is crucial to the effectiveness and success of the school (Lezotte, 2001; Stemler, Bebell, & Sonnabend, 2011).

In *Whatever It Takes*! by Johnson (1997), it was suggested that effective administrative leadership; positive expectations; strong, integrated curriculum; shared decision making; and campus wide responsibility for teaching and success (pp. 3-4) are the five essential components needed to build and maintain strong, effective leadership. Johnson further suggests that principals refrain from changing their curricula too frequently and instead encourage they be used over time to meet their projected long-term goals of helping students master skills by knowledge gained. It does not seem likely that schools can ascertain and effectively measure curricula for their projected goals and usefulness in student achievement when they are replaced year after year. Ultimately, what Black students need is rigorous coursework that will help prepare them for college and for work. And, unlike many traditional large schools, smaller schools "demand intellectually challenging work, and they are focused on preparing all students to work independently and to meet the skill and content demands of college and challenging jobs" (Darling-Hammond, 2002, p. 21).

Time on task and mastery of skills

There are a number of variations between schools—even within the same school districts. For example, some schools may begin at one time, while others begin at another. Likewise, some schools have established routines and practices where every class throughout the school is expected to follow the same procedures within a specific class period, while other schools may have no structure from classroom to classroom. What is known is that what happens inside every classroom in every school every day is crucial to student learning and ultimate success. Therefore, teachers must be able to effectively teach the curriculum more intentionally within limited time constraints (Marzano, 2007).

Lezotte (1991) suggests creating an "interdisciplinary curriculum" to

teach the necessary skills in the least amount of time, making decisions about what is most important and letting go of the rest—what he calls "organized abandonment" (p. 4). For effective instruction to take place in every classroom, it is vital for teachers to know and to provide students with the essential components of the curriculum (Lezotte, 2001, p. 9). In the effective school, students are actively engaged in whole-class or large group, teacher-directed, thoughtfully planned learning activities for a high percentage of the instructional class time (Lezotte, 2001; Marzano, 2007). Research confirms that adequate instruction accompanied by related engaging time-on-task activities that support instruction is pivotal to effective instructional practice, and students are more successful when they spend more time practicing what they are learning (Marzano, 2007).

Empirical research suggests that engaging students in time-on-task activities requires four steps: explanation (lectures supported with textbooks and other resources), modeling (the successful usage of the skill, subskill, or knowledge being sought), guided practice (the teacher should be certain to build instructional activities in ways that will steer students toward appropriate practice), and independent practice (critical component of instructional design is when students display genuine mastery of what's present in a curricular aim without guidance) (Popham, 2009). Black students will continue to underperform academically if their teachers do not adhere to theory and effective pedagogical practices routinely in their classrooms. The future of these students is at stake and heavily dependent on their thoughtful planning, implementation of quality instruction and relevant, related engaging activities. They deserve it.

Frequent monitoring of student academic achievement

"In the effective school, pupil progress over the essential objectives is measured frequently, monitored frequently" (Lezotte, 2001, p. 8). It is essential to assess the academic progress of students frequently using a variety of assessment tools and procedures. The results should be used to gauge and improve individual student performance. Not only are the results a measure of students' progress, but also a measure by which to gauge and improve the practice and performance of the teachers and the instructional program (Marzano, 2007).

In his paper, Lezotte (1991) cites that in the age of technology, monitoring student progress as a correlate has been reexamined. Today teachers and schools can do a much better job of monitoring students' academic performance quickly and efficiently. For accountability, students today more than ever before are able to monitor their own academic progress and take ownership of their own learning practices and adjust their learning behavior as needed. Examples of this might include, but are not limited to, completing homework and using computerized practice tests to see correct solutions for skills being taught to aid in skill mastery. These are "available tools for assuring student learning" (Lezotte, 1991, p. 5).

Today, more than any time before, students and parents have ongoing access to students' academic performance in school. School portals and other similar programs are made available to students and families and have become common place in most school districts in the country. While they may have variations of content provided, typically student grades are available as regularly as teachers update the portal. Other features may include a school district calendar for updates on school-related events and holidays, college resources, and other studentrelated information. This is an added resource for students and families to track their achievement and address academic concerns as they arise.

Critical Analysis

Black students are less prepared to experience the same level of success in college as their peers because their high schools did not adequately prepare them academically. For example, for children born in Baltimore City, high school graduation is not guaranteed due to lack of resources and a history of inequity and generational poverty that places more barriers than opportunities in their way. "Young people, particularly those living in poverty, have not had access to everything they could and should have to pursue their dreams and realize their potential" (Investing in Our Future, 2019, p. 1).

Schools with high-minority and high-poverty populations consistently fail to provide access to rigorous courses and other resources to help these students flourish and excel. For example, while low-income students and students of color may have access to AP courses at their school, the program is more likely to be small and/or incomplete, which unabashedly exposes inequity by income and by race (Theokas & Saaris, 2013). However, in a 2012 study on CTE outcomes in three large urban school districts (typically comprised of Black and minority students), "results showed that students in programs of study/career pathways outperformed their [non-CTE] peers on the number of credits they earned in STEM and AP classes while also earning higher GPAs in their CTE classes" (Castellano, Sundell, Overman, Richardson, and Stone, 2014, p. 1). Yet, in many traditional public schools, Black students are forced to make the best of what they are provided—including teaching staff.

Schools that are predominantly minority are filled with more noncertified or inexperienced teachers and result in higher turnover rates. As if this challenge was not enough, this is the case in core courses like reading, mathematics, science, and social studies where higher-level analytical thinking skills are critical to college success (Theokas & Almy, 2010). It has been said that when students are forced to learn from less experienced teachers, it further hinders their academic achievement. However, Berry, Daughtrey, and Wieder (2010) argue that effective instructional leadership provided to new, inexperienced teachers by their colleagues with more experience and expertise even in high-needs schools can reverse negative achievement outcomes for students.

In their empirical analysis of 39 charter schools on effective schools or "No Excuses" schools in New York, Dobbie and Fryer (2013) found that "input measures associated with a traditional resource-based model of education—class size, per pupil expenditure, the fraction of teachers with no teaching certification, and the fraction of teachers with an advanced degree—are not correlated with school effectiveness in their sample" (p. 30). Instead, it found that implementation of Edmonds' (1979) correlates of EST including increased instructional time and instructional leadership, frequent testing to monitor progress, parental involvement, aggressive human capital strategies, a strict discipline code and high expectations of all students, and an unvielding focus on math and reading achievement (more time on task) (Purkey & Smith, 1983; Sammons, Hillman, & Mortimore, 1995) were all components that revealed effective schools and improved academic achievement in their study of charter schools (Dobbie & Fryer, 2013).

Ultimately, when students do not have access to opportunities to cultivate their analytical thinking skills, they are subsequently forced to take one or more remedial courses upon matriculating in college—with no guarantee of college success or college graduation. Low-income, Black students not only lack academic achievement for college readiness, but also lack college knowledge for successful planning. Student participants in "Building a Bright Future" acknowledged they needed to know more about college from a guidance counselor, which raises the question: What are traditional schools doing to share college information with students and families in the absence of school guidance counselors? As key members of schools' education teams, school counselors are charged with assisting students in their academic, personal, and career aspirations. There is a direct link between auidance access and college enrollment, even among marginalized populations. However, many counselors who serve these students lack an in-depth understanding of CCR and lack the professional development to learn the intricacies involved (Bangser, 2008). The role of high school counselors who serve Black or minority, low-income students is critical as they lag in every subject area on college entrance exams annually. As a result of those low scores, the racial gap in scores has been steady for decades (JBHE, 2016).

Summary

Overwhelmingly, literature on college and career readiness (CCR) among Black students addresses concerns of lack: lack of fundamental academic achievement compared with their peers of other races in the same grade attending different schools; lack of information, resources and/or opportunities provided to students (and families) early enough to make a difference in CCR outcomes; and finally, lack of career and technical knowledge or soft skills required for success in college and in the workforce. While studies typically categorize the performance of all Black students together, this researcher has chosen to strategically disaggregate students' level of CCR based on three school types (traditional, magnet, career and technical education or CTE programs) to see whether or not these students perform better academically in one school model over the other. Only then can policies and practices be put into place to level the playing field. As mentioned earlier, the Seven Correlates of Dr. Ron Edmonds' Theory of Effective Schools would eradicate many of these persistent issues concerning the educational attainment of Black students, if only they were consistently implemented.

Access to essential information and resources to prepare students for college is critical and must be readily available to students who attend high-minority, low-income high schools. In these schools, it is crucial that reasonable access to guidance counselors be provided to the most marginalized students; ratios of 300 plus students to one guidance counselor is unacceptable, regardless of circumstances. School counselors are assigned caseloads that make it virtually impossible to provide Black students and their families the support they need in the college preparation process.

Finally, not having sufficient access to guidance counselors then limits students' exposure to career and technical content necessary for considering careers of interest. The lack of access to such knowledge is limiting in other ways as well. Black students with limited knowledge of content in career options and technical skills take longer to choose a major in college and have limited network connections for life after college when seeking employment (College Board, 2010; Reid & Moore, 2008; Welton & Martinez, 2014; Kuh, 2006). Continued work in this field is essential to help shape federal, state, and local policies that improve education quality for Black students.

CHAPTER III

METHODOLOGY

The purpose of this causal-comparative study is to investigate the relationship between traditional and specialized (magnet and career technical education—CTE) public high school programs and their effectiveness in preparing Black students for college based on two of the CCR indicators: grade point average (GPA) and college entrance exam scores (SAT). These variables are strongly considered in determining students' likelihood to thrive in college (CCR, 2017).

Research Questions

The questions that will guide this research study are as follow:

- *RQ*₁ How do Black graduates of traditional high school programs perform academically compared to Black graduates of specialized high school programs (magnet/CTE) in their GPA?
- RQ₂ How do Black graduates of traditional high school programs perform on their college entrance exams compared to Black graduates of specialized high school programs (magnet/CTE) in their SAT Total Scores (ERW/Math)?
- RQ₃ How do traditional high school programs compared to specialized high school programs (magnet/CTE) compare in the SAT scores of Black graduates based on the schools'

poverty level?

Hypotheses

The research questions generated the following set of null and alternative hypotheses:

- H_{o1}: There is no statistically significant difference in the GPA when comparing the academic performance of Black graduates of traditional high school programs with Black graduates of specialized high school programs (magnet/CTE).
- H_{a1}: There is a statistically significant difference in the GPA when comparing the academic performance of Black graduates of traditional high school programs with Black graduates of specialized high school programs (magnet/CTE).
- H_{o2}: There is no statistically significant difference in the SAT Total Scores (ERW/Math) when comparing the performance on college entrance exams of Black graduates of traditional high school programs with Black graduates of specialized high school programs (magnet/CTE).
- H_{α2}: There is a statistically significant difference in the SAT Total
 Scores (ERW/Math) when comparing performance on
 college entrance exams of Black graduates of traditional
 high school programs with Black graduates of specialized

high school programs (magnet/CTE).

- H_{o3}: There is no statistically significant difference in the SAT scores of Black graduates when comparing traditional high school programs to specialized high school programs (magnet/CTE) based on the schools' poverty level.
- H_{a3}: There is a statistically significant difference in the SAT scores of Black graduates when comparing traditional high school programs to specialized high school programs (magnet/CTE) based on the schools' poverty level.

Research Design

For this study, the causal-comparative research design was best suited because the very nature of this design seeks to identify associations among variables. "[It] attempts to determine the cause or consequences of differences that already exist between groups of individuals. The approach is to begin with a noted difference between two groups and then to look for possible causes or consequences of this difference" (Fraenkel & Wallen, 2017, p. 1).

This quantitative causal-comparative research design revealed phenomena associated with public secondary school programs and their programs' effectiveness in preparing Black students for college using collected numerical data, GPA and SAT scores, which was then analyzed statistically. The deidentified data collected and used for this research were secondary and were initially used for another unrelated purpose. The dataset was comprised of Black students' final 2016 high school transcripts. Considered a strong predictor of academic performance in college, students' final high school GPAs were collected for this study to analyze. Their final college entrance exam (SAT) scores were also integral as this score is recognized nationally as an indicator of students' preparedness to matriculate into a four-year college or university without the need for remediation and their ability to do well and to succeed at a postsecondary institution.

A causal-comparative research design was implemented as the method of analysis because it was the most suitable to determine whether there were associations between variables. It sought to find relationships between independent and dependent variables after they were measured and analyzed. The independent variables were the school types (traditional, magnet, and CTE), and the dependent variables collected included final high school GPA and final SAT scores. This study sought to determine which school model, and its offerings, were most effective in preparing Black students for college by the outcome of the variables measured. "The researcher's goal [was] to determine whether the independent variable affected the outcome, or dependent variable, by comparing two or more groups of individuals" (Salkind, 2010, p. 1).

Population, Participants and Sample

The design included 527 participants for the sample in the study. As a best practice, the researcher first created the sample design before data were collected. Ultimately, the researcher created a sample design that was reliable and appropriate for the research study (Kothari, 2004). Using secondary data from a two-tier-level research institution in the Northeast region of the United States, the researcher's aim was to include a true representative sample so that the results of the sample study can be applied, in general, for duplication with a reasonable level of confidence.

The sample in this study consisted of Black students who graduated in 2016 from a traditional urban public high school, a magnet public high school, or a CTE public high school. The largest share of these graduates came from traditional schools (at 307, 166, and 54, respectively). These numbers are reflective of and consistent with the school types in the United States. The ages of these students ranged from 17 to 19 years old. The deidentified data set was collected from a local four-year state university and included only those students enrolled for the first time upon high school graduation with a state issued diploma in 2016. Secondary data was a logical choice for this study because it was cost effective and convenient, and it can be reused for subsequent related studies. With the required permission, data collected included students' final high school GPA, final SAT and/or ACT test scores, their college matriculation status (regular admission to the university without remediation or conditional admission to the university with some form of remediation). The sample of first-time college students from the university was comprised of the three school types (traditional, magnet and CTE) and was sufficient for statistical analysis. In causal-comparative studies, based on previous studies, tradition suggests a minimum sample size of 30 subjects be used to approximate normal distribution (Gall, Gall, & Borg, 1996). The sample size for this study was 527 students.

Instrumentation

Participants of this study are first-time college students attending a two-tier, research institution with a selective admissions process located in the Northeast region of the United States. The primary instruments used to collect data from students' high school transcripts were the nationally recognized college entrance exams known as the SAT and ACT. According to an *SAT® Validity Primer* by Emily J. Shaw, the College Board has focused much of its validity research efforts on examining the relationship between the SAT and measures of college success. An overview of evidence of the validity is available on the current SAT and focuses on the support of using SAT scores in college admission decisions. Over the last seven years, the College Board has collected higher education outcome data from four-year institutions to document evidence of the validity of the SAT for use in college admission. Likewise, "[a]t ACT, every test is the product of multiple layers of intense work and scrutiny by subject matter experts, psychometricians, and other professionals. ACT, therefore, devotes a great deal of attention to welldocumented test score validity for all testing programs. ACT summarizes validity as supported by three kinds of evidence: construct, criterion, and content" (Key Facts). To be considered college and career ready according to College Board, students should have a combined SAT score of 1060 out of 1600 (College Board, 2017). The ACT requires an average composite score of 20; a score of 15 or below limits students' options of attending a four-year postsecondary institution.

Limitations

In this research study, the sample size for this quantitative study was a limitation because the researcher used secondary data with several variables and no concrete evidence that each variable would yield sufficient data. Using secondary data was a limitation in itself because the data consisted of information not collected for the purpose of the researcher's study but for a separate purpose (Stewart, 1984), and those data had to be disaggregated for the researcher's unique purpose. Another limitation is the collection of test scores from high school college entrance exams because, as one of the most significant variables used to determine students' college and career readiness, they do not measure the non-cognitive skills like motivation or self-efficacy that may be critical for meeting the academic and developmental demands of college environments. Finally, descriptive statistics are limited in so much that they only allow the researcher to make summations about the people or objects that have actually been measured.

Data Collection

For this study, the researcher collected and analyzed secondary or pre-existing data originally collected for a separate purpose from this study. Prior to collecting data, permission of the Institutional Review Board (IRB) of Morgan State University was obtained to conduct the study during the Spring 2018 semester. Permission to collect data to conduct the study was acquired from the Office of Admissions of a higher learning institution in the tri-state area. A formal letter was written by the researcher and was sent to the appropriate person requesting an electronic spreadsheet of specific deidentified data that would serve as categorical variables in a causal-comparative study. Once these procedures were completed, data were imported into SPSS for analysis. The data analysis consisted of descriptive statistics to provide an accurate profile of the anonymous participants in this research. Below is a sample of the spreadsheet.

Data Analysis

The data analysis for this causal-comparative study included descriptive statistics, which is a rational choice to analyze the data because it helps to organize and effectively describe relevant characteristics and then summarizes the results with significant numerical data (Gall, Gall, & Borg, 2007). It can also show patterns that might emerge from the data; however, the data do not permit formulating conclusions about the hypotheses presented. Descriptive statistics merely describe what the data show. For example, using categorical variables, this study based on the research questions will show the number of Black high school graduates in 2016 who likely took rigorous courses (AP/IB) in three types of public high schools to evaluate their level of CCR based on their final SAT exam scores.

Again, these descriptive statistics did not allow the researcher to make conclusions beyond the results, nor did they draw conclusions about any hypotheses previously made. It is especially important that the sample accurately represented the population. SPSS was the statistical software used for all the procedures. All variables (high school GPA and SAT scores) produced descriptive statistics.

According to Fraenkel and Wallen (2017), a causal-comparative research study attempts to determine the extent of a relationship

between two or more variables using statistical data although various tests may be used to further investigate additional findings. Thus, in this study, the researcher used a t-test, which is considered the most commonly used approach in causal-comparative studies, to test for significant differences between means. For example, one use of the t-test in this study will be to determine the significant difference in SAT scores between students who attended different types of high schools. In the end, this causalcomparative study looked at the levels of CCR among Black students from three school types measured by their final high school GPA and SAT exam scores. The study showed how effective traditional and specialized public high school programs are in preparing Black students for college.

CHAPTER IV

RESULTS

Introduction

The purpose of this causal comparative study was to investigate the effectiveness of traditional and specialized secondary public-school types in preparing Black students for college. Investigating the effectiveness of school types as a possibility to increase the college readiness of Black students is significant because postsecondary attainment—any credential beyond high school—has major implications for social mobility over the life span of these students. According to Kelly (2016), a postsecondary education with a credential has a transformational effect on economic mobility, yet a disproportionate number of Black students in the United States are failing to meet college and career readiness (CCR) standards based on college admissions tests (Jaschik, 2015).

This chapter includes data analysis and research findings. Data were analyzed to identify and describe the difference between traditional and specialized public high school types and Black students' CCR upon graduating high school in 2016 and entering college for the first time the fall of 2016. Deidentified secondary data were used for this study and were obtained from the transcripts of students at a four-year postsecondary institution who identified themselves as Black or African American (n = 527). While the data set was vast, missing information such as a school name, a 2016 high school graduation date, a final high school GPA, a final SAT or ACT score, or a 2016 matriculation date and admission status were required variables that helped the researcher to eliminate participants from the data set for the integrity of the study. Please note additional reasons participants were excluded from the data set: students who earned a GED, students who were home schooled, and students who attended charter, private, or parochial schools.

Methods of Data Analysis and the Findings

Research Question 1

An independent sample t-test was the statistical analysis used to compare means and determine whether there was a statistical significance to answer the following research question: How do Black graduates of traditional high school programs perform academically compared to Black graduates of specialized high school programs (magnet/CTE) in their GPA? The level of significance was set at 0.05.

As shown in Table 1, group size for the traditional school type was 307; group size for the specialized school type was 220. Table 1 lists the means and standard deviations of the traditional schools and the specialized schools. Students representing the traditional school achieved a Mean of 2.9510, with a Standard Deviation of .50775 in the performance area of GPA. Meanwhile, students representing the specialized school achieved a Mean of 2.9058, with a Standard Deviation of .51299 in the academic performance area of GPA. As such, student performance in the area of GPA revealed that the students representing the traditional school group (M = 2.9510) slightly outperformed students representing the specialized school group (M = 2.9058).

An independent sample t-test was conducted to compare the differences between students representing the traditional school type and students representing the specialized school type. The analysis revealed no significant difference in the GPA of students who were enrolled in traditional schools (M = 2.9510, SD = .50775) and students who were enrolled in specialized schools (M = 2.9058, SD = .51299); t (525) = 1.004, p = .316, two tailed. In fact, the results showed the academic performance of students representing both traditional and specialized schools was comparable in the area of GPA.

Table 1.

Mean and Standard Deviation of GPA of Traditional and Specialized Public High School Students

School Type	Ν	М	SD	t	df	p
Traditional	307	2.9510	.50775	1.004	525	0.316
Specialized	220	2.9058	.51299			
Research Question 2						

An independent sample t-test was the statistical analysis used to compare means and determine whether there was a statistical significance to answer the following research question: How do Black graduates of traditional high school programs perform on their college entrance exam compared to Black graduates of specialized high school programs (magnet/CTE) in their SAT Total Scores (ERW/Math)? The statistical significance of relationships among selected variables was determined using the Levene's Test for Equality of Variance. The level of significance was set at 0.05.

As shown in Table 2, group size for the traditional school type was 307; group size for the specialized school type was 220. Table 2 lists the means and standard deviations of the traditional school type and the specialized school type. Students representing the traditional school type achieved a Mean of 920.0977, with a Standard Deviation of 114.55365 in the performance area of SAT. Meanwhile, students representing the specialized school type achieved a Mean of 954.5909, with a Standard Deviation of 123.00394 in the academic performance area of SAT. As such, student performance in the area of SAT revealed that the students representing the specialized school type (M = 954.5909) outperformed students representing the traditional school type (M = 920.0977).

An independent sample t-test was conducted to compare the differences between students representing the traditional school type and students representing the specialized school type. The analysis revealed significant differences between the traditional school type (M = 920.0977, SD = 114.55365) and the specialized school type (M = 954.5909, SD = 123.00394); t(525) = -3.305, p = .001, two tailed. These results suggest that students who graduated from specialized public high schools scored statistically significantly higher than students who graduated from the traditional public high schools in the area of SAT.

Table 2.

Mean and Standard Deviation of SAT Scores of Traditional and Specialized Public High School Students

School Type	N	М	SD	t	df	p
Traditional	307	920.098	114.554	-3.305	525	.001
Specialized	220	954.591	123.004			

Table 3 reflects the regular and conditional college admission status of students who graduated from traditional and specialized schools, n =527. The sample was comprised of only Black students who were admitted to college in 2016 as first-time matriculating students. Of those students, the majority (82.5%) were admitted as regular students (with no conditions) while the remaining students (17.5%) were admitted as conditional students. The term conditional admission means that students must meet some specific condition or requirement of the college or university before they can enroll in freshmen-level, credit-bearing courses. Sometimes, students who are admitted conditionally may have to retake the college entrance exam or participate in a summer program offered by the institution.

Table 3.

Regular and Conditional Admission Status of Traditional and Specialized Public High School Students

Admission Status	Frequency	Percent	Cumulative Percent
Regular	435	82.5	82.5
Conditional	92	17.5	100.0
Total	527	100.0	

Table 4 suggests which public high school type had the highest percentage of Black students who were admitted to the institution in this

study on a conditional basis. Graduates of traditional public high schools accounted for the largest share, or 65%, of students who were admitted with a conditional status. Magnet school students and CTE students fared much better at about 23% and 12%, respectively.

Table 4.

Percentage of students who were conditionally admitted to the postsecondary institution in this study by school type

School Type	Frequency	Percent	Cumulative Percent
Traditional	60	65.2	65.2
Magnet	21	22.8	88.0
CTE	11	12.0	100.0
Total	92	100.0	

Table 5 reflects the number of Black students from traditional public high schools compared with specialized public high schools who were admitted to the institution in this study on a regular admission and conditional admission basis. Graduates of traditional public high schools accounted for 435 students who were accepted with a regular admission status and 60 students were admitted with a conditional status. Graduates of specialized public high schools accounted for 92 students who were accepted with a regular admission status and magnet and CTE public high schools accounted for 21 students and 11 students, respectively, who were admitted with a conditional status. Magnet school students and CTE students showed fewer students admitted on a conditional basis.

Table 5.

Comparison of students who were admitted as regular versus conditional to the post-secondary institution in this study by school type

Regular Admission			Conditional Admission		
School Type	Ν	Percent	School Type	Ν	Percent
Traditional	435	82.5	Traditional	60	65.2
Specialized	92	17.5	Magnet	21	22.8
			CTE	11	12.0
Total	527	100.0	Total	92	100.0



Figure 2. School Year 2015-2016 (Statewide Summary) Official Number of Students Approved for Free and Reduced-Price Lunch and Percent of Enrollment by Agency as of October 31, 2015*

Poverty by SD: **75.0 or more** = high **50.1-75.0** = mid-high **25.1-50.0** = mid-low **25.0 or less** = low

High-poverty schools are defined as public schools where more than 75.0 percent of the students are eligible for FRPL, and mid-high poverty schools as those where 50.1 to 75.0 percent of the students are eligible for FRPL. Low-poverty schools are defined as public schools where 25.0 percent or less of the students are eligible for FRPL, and mid-low poverty schools as those where 25.1 to 50.0 percent of the students are eligible for FRPL. In school year 2015–16, some 20 percent of public-school students attended low-poverty schools, and 24 percent of public-school students attended high-poverty schools (NCES, 2017).

Research Question 3

An independent sample t-test was the statistical analysis used to

compare means and determine whether there was a statistical

significance to answer the following research question: How do traditional

high school programs compared to specialized high school programs (magnet/CTE) compare in the SAT scores of Black graduates based on the schools' poverty level? The poverty level in this study is defined by the percentage of students who receive free and reduced priced lunch (FRPL) by school district. The level of significance was set at 0.05.

As shown in Table 6, the group size representing traditional high schools in districts with combined high and mid-high poverty levels (50.1%) or more) was 122; the group size representing specialized high schools in districts with combined high and mid-high poverty levels was 184. Table 6 lists the means and standard deviations of SAT scores of students representing traditional and specialized public high school types by poverty levels. Students representing traditional schools achieved a Mean of 903.9344, with a Standard Deviation of 116.42440 in the performance area of SAT. Meanwhile, students representing specialized schools achieved a Mean of 956.6304, with a Standard Deviation of 126.01307 in the academic performance area of SAT. As such, student performance in high and mid-high school districts in the area of SAT scores revealed that the students representing the specialized school type (M = 956.6304) outperformed students representing the traditional school type (M =903.9344).

An independent sample t-test was conducted to compare the

96

difference of SAT scores between students representing traditional and specialized public high schools in districts with high and mid-high poverty levels. The analysis revealed a statistically significant difference between students representing specialized schools (M = 956.6304, SD = 126.01307) and students representing traditional schools (M = 903.9344, SD = 116.42440); f(304) = -3.691, p = .000, two tailed. These results showed that students of specialized schools in districts with high and mid-high poverty were different from the students who were enrolled in traditional schools in the area of SAT performance.

Table 6.

Mean and Standard Deviation of SAT Scores of High and Mid-high to Low and Mid-low Poverty Levels by Traditional and Specialized Public High School Students

Poverty Levels	School Type	Ν	М	SD	Τ	df	р
High/ Mid-High	Traditional	122	903.934	116.424	-3.691	304	.000
	Specialized	184	956.630	126.013			
Total		306					
Low/ Mid-Low	Traditional	185	930.7568	112.34879	660	219	.510
	Specialized	36	944.1667	107.28800			
Total		221					

Also shown in Table 6, the group size representing traditional high schools in districts with combined low and mid-low poverty levels (50.0% or less) was 185; the group size representing specialized high schools in districts with combined low and mid-low poverty levels was 36. Table 6 lists the means and standard deviations of SAT scores of students representing traditional and specialized public high school types. Students representing the traditional schools achieved a Mean of 930.7568, with a Standard Deviation of 112.34879 in the performance area of SAT. Meanwhile, students representing specialized schools achieved a Mean of 944.1667, with a Standard Deviation of 107.2880 in the academic performance area of SAT. As such, student performance in low and mid-low school districts in the area of SAT scores revealed that students representing specialized school programs (M = 944.1667) only slightly outperformed students representing traditional school programs (M = 930.7568).

An independent sample t-test was also conducted to compare the difference of SAT scores between students representing traditional and specialized public high schools in districts with low and mid-low poverty levels. The analysis revealed that there was no significant difference between students representing specialized schools (M = 944.1667, SD = 107.28800) and students representing traditional schools (M = 930.7568, SD = 112.34879); f(219) = -.660, p = .510, two tailed. These results showed that
students of specialized schools in districts with low and mid-low poverty were different from the students who were enrolled in traditional schools in the area of SAT performance.

As shown in Table 7, the group size representing traditional high schools in districts with only mid-high poverty levels (50.1% to 75.0%) was 92; the group size representing specialized high schools in districts with only mid-high poverty levels was 83. Table 7 lists the means and standard deviations of SAT scores of students representing traditional and specialized public high school types by mid-high poverty levels. Students representing traditional schools achieved a Mean of 911.8478, with a Standard Deviation of 124.97850 in the performance area of SAT. Meanwhile, students representing specialized schools achieved a Mean of 957.5904, with a Standard Deviation of 118.43070 in the academic performance area of SAT. As such, school districts with mid-high poverty levels revealed that the students representing the specialized school type (M = 956.6304) outperformed students representing the traditional school type (M = 911.8478) in the area of SAT scores.

An independent sample t-test was conducted to compare the difference of SAT scores between students representing traditional and specialized public high schools in districts with only mid-high poverty levels. The analysis revealed a statistically significant difference between students representing specialized schools (M = 957.5904, SD = 118.43070) and students representing traditional schools (M = 911.8478, SD =124.97850); t(173) = -2.478, p = .014, two tailed. These results showed that students of specialized schools in districts with only mid-high poverty levels were different from the students who were enrolled in traditional schools in the area of SAT performance.

Table 7.

Mean and Standard Deviation of SAT Scores of Mid-high to Mid-low Poverty Levels by Traditional and Specialized Public High School Students

Poverty Levels	School Type	Ν	М	SD	t	df	р
Mid-high	Traditional	92	911.8478	124.97850	-2.478	173	.014
	Specialized	83	957.5904	118.43070			
Total		175					
Mid-low	Traditional	168	926.7262	109.96187	689	200	.492
	Specialized	34	940.8824	105.52517			
Total		202					

Also shown in Table 7, the group size representing traditional high schools in districts with only mid-low poverty levels (25.1% to 50.0%) was 168; the group size representing specialized high schools in districts with only mid-low poverty levels was 34. Table 7 lists the means and standard deviations of SAT scores of students representing traditional and specialized public high school types by districts with mid-low poverty levels. Students representing the traditional school programs achieved a Mean of 926.7262, with a Standard Deviation of 109.96187 in the performance area of SAT. Meanwhile, students representing specialized school programs achieved a Mean of 940.8824, with a Standard Deviation of 105.52517 in the academic performance area of SAT. As such, student performance in school districts with mid-low poverty levels revealed that students representing specialized school programs (M = 944.1667) only slightly outperformed students representing traditional school programs (M= 930.7568) in the area of SAT scores.

An independent sample t-test was also conducted to compare the difference of SAT scores between students representing traditional and specialized public high schools in districts with mid-low poverty levels. The analysis revealed that there was no statistically significant difference between students representing specialized schools (M = 940.8824, SD = 105.52517) and students representing traditional schools (M = 926.7262, SD = 109.96187); f(200) = -.689, p = .492, two tailed. These results showed that students of specialized schools in districts with mid-low poverty levels were different from the students who were enrolled in traditional schools in the area of SAT scores.

Summary

The independent sample t-test used in this study revealed that research question one was not considered statistically significant (p = 0.316) when looking at the GPA of students from traditional and specialized public high schools. The difference in the GPA between students was less than one percentage point (0.0452). However, research question two showed there was a statistically significant difference (p=0.001) when looking at the SAT scores of students from traditional and specialized schools. The difference in the SAT scores between students was nearly thirty-five points (34.4932). Students who graduated from specialized high schools fared more favorably. Additionally, descriptive statistics not only revealed the percentage of students who were admitted to this institution with conditions, but they also revealed which school type comprised the greatest percentage of students' conditional admittance status.

Research question three also showed that there was a statistically significant difference (p = 0.000 and p = 0.014) when looking at the SAT scores of students representing specialized programs in school districts with higher levels of poverty (high/mid-high and mid-high, respectively) in 18 school districts. The difference in the SAT scores between specialized and traditional school types was -52.69601 percentage points. There was no significant difference in the SAT scores of students representing traditional and specialized programs in school districts with lower levels of poverty.

CHAPTER V

DISCUSSION, CONCLUSIONS,

IMPLICATIONS, AND RECOMMENDATIONS

Purpose

The purpose of the causal comparative study was to investigate the effectiveness of three secondary public-school types in preparing Black students for college. Investigating the effectiveness of school types as a possibility to increase the college readiness of Black students is significant because postsecondary attainment—any credential beyond high school—has major implications for social mobility over the life span of these students. According to Kelly (2016), a postsecondary education with a credential has a transformational effect on economic mobility, yet a disproportionate number of Black students in the United States are failing to meet college and career readiness (CCR) standards based on college admissions tests (Jaschik, 2015).

The demographic and research data used in this quantitative study were collected using secondary data used for a non-related purpose. Participants identified as Black or African American who were 2016 high school graduates and 2016 first-year college students between the ages of 17 or 18 years old. The sample size was large enough to complete the study, and the data were successfully analyzed using SPSS.

Discussion

The framework used in the study was the Effective Schools Theory (EST) because it theorizes that schools play a monumental role in the educability of urban students and can affect the educational outcome of Black students. Using this framework—specifically looking at instructional leadership and practices, time on task, and how effectively schools monitor students' academic achievement—allows the assumption that, ultimately, school leaders (districts or systems) are either responsible for the academic achievement of their students or, conversely, they are responsible for their students' lack of academic achievement in attaining college and career readiness.

In addition to the EST, the Four Keys to CCR model was used specifically to define college readiness and to highlight only the essential skills and knowledge needed to prepare students for college or for work. Black students' lack of content knowledge and college knowledge continues to jeopardize their success in post-secondary institutions and the workplace. Dr. Ronald Edmonds and Dr. David Conley developed evidenced-based research to close gaps in academic achievement, which continue to hinder Black students' upward mobility.

While Black students lag behind their peers in college readiness, this study found that the schools Black students attended did affect their level

of preparedness. Two research questions examined the GPA and the SAT scores of Black students who graduated high school in 2016 and were analyzed using SPSS:

- How do Black graduates of traditional high school programs perform academically compared to Black graduates of specialized high school programs (magnet/CTE) in their GPA?
- 2. How do Black graduates of traditional high school programs perform on their college entrance exam compared to Black graduates of specialized high school programs (magnet/CTE) in their SAT Total Scores (ERW/Math)?
- 3. How do traditional high school programs compared to specialized high school programs (magnet/CTE) compare in the SAT scores of Black graduates based on the schools' poverty level?

Student GPA and SAT scores are the two primary measures of college readiness used in the United States; however, other measures not included in this study are also used to determine students' likelihood of success in college. When looking at the GPA of Black students who graduated from traditional and specialized public high schools in research question one, students at traditional schools (M = 2.9510) had slightly higher averages than students who graduated from specialized schools (M = 2.9058). There are two plausible reasons why students at traditional schools had similar grades as their peers at specialized schools: (1) students in many of the country's traditional urban public schools do not have access to a rigorous curriculum compared to their peers who graduated from specialized school programs, and (2) there were more graduates of traditional public high schools (n = 307) than there were graduates of specialized public high schools (n = 220) in this study.

When considering the result of the GPA in research question one, there was no significant difference (p = .316) in grades between graduates of traditional and specialized public high school students. However, the mean for the GPA was higher among graduates of the traditional schools. The slight increase in the GPA may have been attributed to Black student graduates from traditional schools lacking access to rigorous course offerings at their high schools unlike their peers who graduated from specialized schools. It is conceivable that Black student graduates of specialized public high schools had a more robust and challenging curriculum, which, in turn, lowered the mean score for GPA in this study among graduates of specialized schools. It also is conceivable that the GPA mean average was higher because the largest share of students was graduates of traditional schools rather than graduates of specialized schools. According to College Board (2018), students' GPAs are getting higher, but their SAT scores are not. When looking at the SAT scores of the sample in the study, there was a statistically significant difference (p =.001) between traditional (M = 920.0977) and specialized (M = 954.5909) school types with graduates of specialized public high school programs earning the higher scores. The SAT score students earn in high school projects how well they will likely do in college taking similar courses (College Board, 2018).

High schools play a vital role in student college matriculation and college readiness. Thus, research question three, which investigated the poverty levels of the school districts in this study, revealed that public high school models made more of an impact on SAT scores than did levels of poverty. Of the 527 schools coded by school district and analyzed by poverty levels using the data of the school districts' state's 2015-2016 summary of approved free and reduced-lunch meals, no significant difference in SAT scores was evident among grouped levels of poverty: high and mid-high (50.1% and more) to low and mid-low (50.0% and less), as well as mid-high only (50.1% to 75%) to mid-low only (25.1% to 50.0%) for a more thorough investigation, and both outcomes resulted in similar results—no significant difference in SAT scores (.799 and .712, respectively).

In fact, the SAT scores were slightly higher among both higher poverty levels than those of lower poverty groupings. This may be due, in part, to the unequal distribution of poverty levels; there is only one high poverty school district that was merged with a few mid-high poverty school districts to leverage the outcome. Likewise, there were only two school districts with low poverty (a total of 19 participants) that were merged with a few mid-low poverty school districts. Poverty levels by traditional and specialized school types, however, revealed a significant difference (.001 and .015, respectively based on aforementioned grouped poverty levels) in SAT scores with students representing specialized schools at an advantage—in more than SAT scores.

To address the problem of CCR in this research study, the researcher was compelled to look at how effective three public high school types were in preparing Black students by identifying the percentage of students who were admitted to college with a regular or conditional admission status. Students who graduate high school with a qualifying GPA and SAT score and are admitted to college with a regular admission status with no need for remediation are said to be college ready (CCR, 2017; Conley, 2013; USDE, 2018). Conversely, students admitted to college with a conditional status and who have to take remedial courses are considered not college ready. Roughly 40% of students who enroll in four-year colleges take at least one remedial course, while about 50% of students who enroll in two-year community colleges take one or more remedial classes. This makes sense because the majority of the nation's students attend traditional high schools.

Conclusions

The key findings in this research show that when looking at the two most significant indicators, GPA and SAT scores, in predicting students' likelihood to be successful in college, school type did in fact make a significant difference in one category but not the other. While the GPA was near the norm at 3.0 nationwide, there was no significant difference in the GPA among students of traditional versus specialized high school graduates. However, literature previously mentioned in this study suggests that traditional schools far less often than specialized schools offer students rigorous course offerings. Therefore, it is likely that the GPAs were very similar because of the level of ease in the curriculum at traditional schools compared to the level of difficulty in the curriculum at the other.

When looking at SAT scores among graduates of traditional and specialized high school students, there was a significant difference with graduates of specialized schools outperforming their peers. This result, in particular, is significant because it indicates what Black students are capable of when the correlates of effective schools are enforced and part of every student's educational experience from pre-k through 12. When these students have access to the information and resources needed to meet those key CCR standards created by Conley, Black students succeed.

Although historically associated with negative criticism and harsh reviews as being a subpar academic learning program for low-income and low-academic-performing minority students (Rojewski & Xing, 2013), CTE programs are viewed much more favorably today. In fact, such programs may be the key to close not only the academic achievement gap, but also the salary gap that exists between Black and White students. When Black students have the same access to a high-quality public education with challenging curricula as their White affluent peers, it will expand their postsecondary college or career options, which in turn benefits students and the economy. In 2013, experts found that workers with a four-year degree earned 98% more per hour than those with only a high school diploma; this is an upswing from 85% in 2003 (Leonhardt, 2014). "In an economy that requires well trained and highly-skilled professionals, it is a proven method for endowing young people with the knowledge and skills necessary to be successful members of the workforce" (Brand, Valent, & Browning, 2013, p. 13).

In conclusion, students who participate in high-quality CTE programs enroll in college at a higher rate than students who do not, and this could be a game changer in America's education systems for Black and minority students (Brand et al., 2013).

Implications

What does this study mean for Black students attending traditional urban public schools in American? The results of this study present new information that may well influence years of academic research and theories. It is conceivable that replication of this study will yield very similar results with other minority groups attending traditional public high schools in urban communities. The findings in this study can potentially change how traditional school leaders demonstrate best practices in instructional practices and behaviors, how teachers think about their minority students and engage Black students in content knowledge and skill development, and how time on task and closely monitoring students' academic progress have the propensity to close the achievement gap between Black and non-Black students. It also can add to the dialog about the achievement gap and what a more robust and rigorous course selection with various technical content in traditional public schools will mean for this and future generations.

This research study shows that the academic achievement of Black students has a great deal to do with factors within the school community. The urban poor are well able to learn and apply knowledge acquired in the same manner as other students when they are given the opportunity, resources, and support to do so. When students are challenged and expected to excel, oftentimes they do excel. Conclusively, research demonstrates the impact schools have in closing the achievement gap in urban schools.

Persistent lack of access to rigorous courses and career/technical content, lack of access to knowledgeable school counselors, and lack of access to additional resources to ensure students flourish remains a major culprit and hindrance in the future endeavors in students of color. When Black students have access and exposure to the same opportunities and experiences as their non-Black, more affluent peers this may likely aid in closing not only the academic achievement gap, but also in closing the college matriculation gap.

Recommendations for Future Research

This study analyzed 527 Black students on their CCR using GPA and SAT scores as measures. This relatively small sample size may not produce the results that a larger sample size might reveal; however, this study should be duplicated with a larger sample size of minority students from the three types of schools. In addition to the larger sample size, the study should include other CCR indicators to get the full scope of differences school type plays in students' CCR readiness. This study could be duplicated to include other school models compared to traditional schools to determine if there are significant differences in academic performance as it relates to preparedness for work and careers. While not all students will find that two- and four-year postsecondary education is best for them, the foundations of careers established in specialized high schools afford students viable options for certification programs that set the pathway for career success in one of the 16 career industries.

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