A QUANTITATIVE ANALYSIS OF PER PUPIL EXPENDITURES ON INSTRUCTION AND ACADEMIC OUTCOMES IN MICHIGAN PUBLIC SCHOOLS

by

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ABSTRACT

AMBER CHAVONNE BRYANT. A Quantitative Analysis of Per Pupil Expenditures on Instruction and Academic Outcomes in Michigan Public Schools. (Under the direction of DR. CHANCE W. LEWIS)

This research quantitatively explores the relationship between per pupil expenditures on instruction and academic outcomes on Michigan Student Test of Educational Progress (M-STEP) in Michigan state public schools. This study particularly focuses on per pupil spending on instruction in public schools in Michigan. The sample tested included all regular public school districts in Michigan (N=540), approximately 3,000 schools (N=2,996). This outcome of the study conducted helps to inform the conversation on the impact of spending in Michigan public schools. Six multiple linear regression models were designed and the results reported that per pupil spending on instruction was significantly impactful on academic proficiency when controlling for student/teacher ratio, type of district (i.e., urban, rural/town, and suburban), and racial compositions of a district; however, the effect size of per pupil spending was not practically impactful encouraging investigation into other variables. The most impactful variables across the models were: (1) the percent of the district that served White students and (2) the percent of the district serving children who were economically disadvantaged. Further investigation is necessary in order to more comprehensively understand the causes for chronic disparate outcomes among American students as this study is limited to standardized proficiency scores in one geographic region of the country.

DEDICATION

To Cris,

and all children.

ACKNOWLEDGMENTS

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CHAPTER ONE: INTRODUCTION

"Humanity's greatest advances are not in its discoveries—but in how those discoveries are applied to reduce inequity. Whether through democracy, strong public education, quality health care, or broad economic opportunity—reducing inequity is the highest human achievement."

-Bill Gates, Harvard University Commencement, 2007

Educational inequities have produced school districts throughout the United States that researchers and media have deemed "in crisis" due to chronic academic under-performance, high discipline rates, inadequate school resources, and frequent teacher turnover; these schools consistently serve the nation's poorest children and ethnic minority populations (Darling-Hammond, 2010; Kozol, 1991, 2005; Moore & Lewis, 2012; Shannon, 2014; Wilson, 2012). However, research has also shown that the ethnicity or socioeconomic status of a child does not position him or her for absolute and inevitable academic underachievement; children living in poverty have proven countless times to overcome the challenges of poverty when appropriate support is provided in the community (Chenoweth, 2009; Reeves, 2003). If this were not so, why would we as a nation attempt, at all, to educate children we believed to be incapable of learning? The nation's continuous educational reform efforts make plain that we ideologically want all children to have access to quality teaching and learning, hence the development and sustaining of mass public education. However, we, as a nation, must also wrestle with several critical questions: Is every child given the same quality of education? If not, why not? How do we feel about it? And what do we expect from children to whom we give inadequate academic support?

In 1965, President Lyndon B. Johnson signed into law the Elementary and Secondary Education Act (ESEA) whose primary purpose was to "provide all children significant opportunity to receive a fair, equitable, and high-quality education, and to close educational achievement gaps" (ESEA, 1965, SEC. 1001. ø20 U.S.C. 6301¿). Resource and financial allocations for public schooling have been a salient point of tension in education since this legislation; ESEA required government intervention, specifically financial intervention, to promote students' high academic achievement (Jennings, 2015). Although federal funding for public schools has increased over the last few decades since the enactment of ESEA, federal contributions for public schools have consistently remained lower than state and local burdens of contribution (Hanushek, 2016; Jennings, 2015; Rury & Hill, 2012) (see Figure 1). For most schools, the city's municipal property tax carries the largest burden (Bennet deMarrais & LeCompte, 1998; Vogel & Harrigan, 2007). This posits financial revenue as a challenge for school districts in low-income communities serving high concentrations of children living in poverty. These districts are mostly in urban or rural cities with low-property values, housing large populations of renters, and employing mostly low-to-medium wage workers among other factors (Vogel & Harrigan, 2007).

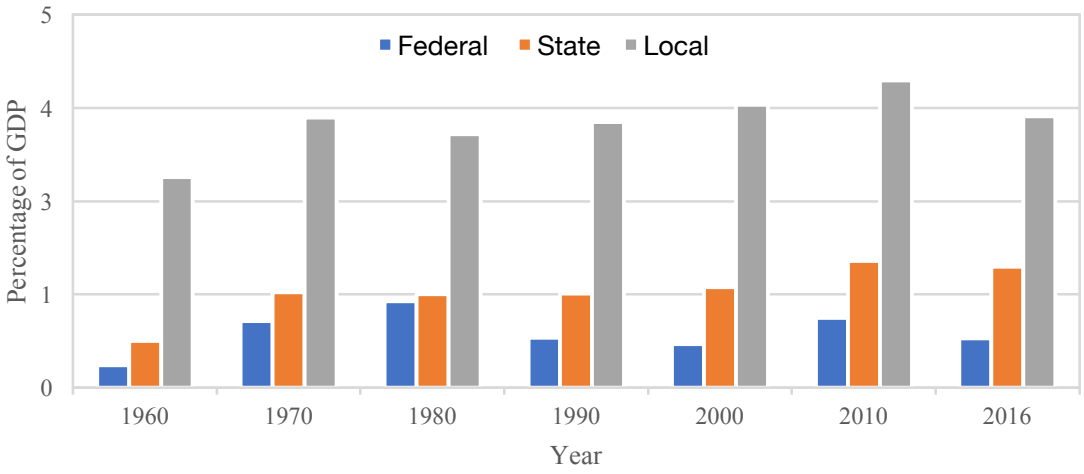


Figure 1: Total U.S. Expenditures on Education Based on Level's GDP

Sources: U.S. Census Bureau, State and Local Finance Tables. (2017) Retrieved from https://www.census.gov/govs/local/ and U.S. Government Publishing Office. (2016) Budget of the United States Government. Retrieved from https://www.gpo.gov/

To begin a further exploration into the association between socioeconomics and academic achievement, this study focuses on school districts in the State of Michigan and their current funding and achievement patterns. This study explores per pupil expenditures on instructional services and standardized test outcomes on the *Michigan Student Test of Educational Progress* (M-STEP). Contextually, the current research on the associations between academic outcomes and expenditures reports mixed messages that offer dichotomous points of view in regard to a correlative relationship (Wenlinksy, 2007). The two opposing ends of the debate are: (1) the need to lessen spending on poor performing schools as increased spending over decades has not provided necessary academic gains among students, and (2) public school spending has been inadequate causing the consistent underachievement of students and thus more should be done to correct the inequitable allocation of resources. In 2016, The National Center for Education Statistics (NCES) (Cornman, 2016) reported that the national median for per

pupil expenditures was $11,745; among the 100 largest districts in the country, per pupil expenditures ranged from $5,539 in Alpine School District (Utah) to $20,331 in New York City Schools (Cornman, 2016). This study seeks to expound upon the debate in public education on how money and financial allocations may impact academic outcomes. The hope is to better understand how money is best spent to support high academic achievement among children living in poverty. The districts that would benefit the most from this study are those often viewed in "financial crisis." The information gained from this research can help stakeholders and policymakers develop more informed strategies to address funding allocations in high-needs communities.

Statement of the Problem

Educational attainment level has long been correlated with increased wealth and success throughout an individual's lifetime showing a nearly 100% increase in annual income between a person holding a high school diploma and a person holding a bachelor's degree: $35,256 and $59,124 respectively (U.S. Bureau of Labor Statistics, 2016). Needless to say, gaining an education increases an individual's human and social capital and therefore opportunities for economic mobility, all of which increases the individual's quality of life. As a result, a quality public education is a vital resource for a society directly impacting its youth and future economic stability. With education's level of individual and collective influence, ensuring quality instruction for all children becomes paramount and a collective responsibility.

Theoretically, educational inequities have persisted throughout U.S. public schools since public schools' conception in the 19th century. Throughout history, the difference in academic outcomes among children have been attributed to many factors

including: race, gender, socioeconomic status, parental involvement, and school and teacher quality. The conceptual framework for this study includes critical and social dominance theories; these theories allow for a deeper explanation of these factors. Socially, race and wealth often carry greater connotations than their literal definitions. Racial groups in American are representative of culture and ethnic differences as less than 1% of biological differences exist between humans (Wiggan, 2006). Due to the prevalence of cultural and ethnic differences, Subsequently, race has been associated with social status, and ultimately, sociopolitical value. The lens of social dominance theory allows for us to see descendants of Eastern Europeans as the most advantageous sociopolitical group in America. Race in America, and arguably around the world, now reflects social connotations and group belong not necessitated by ethnic heritage, yet more so social expectations. Wealth and the lack thereof also induce similar implications with higher-income individuals being viewed as more valuable and intelligent than a poor individual.

Academic outcomes among children are viewed in the same way. Children who do not perform well in traditional K12 environments on standardized assessments are often thoughts of as less overall intelligent than the next child. While assessment of student academic progress is necessary, uniformed testing does not always accurate convey intellectual intelligence or capacity. One must consider when discussing academic outcomes, the tools used to measure success, the means of instruction, and the environment of in which the child interacts. Understanding access equity helps to understand the true impact of social status on outcomes.

In regard to education finance, allocations of resources are often explored in regard to student outcomes in terms of teacher salary and per pupil expenditures. Research that investigates the financial inputs of state and federal legislatures on academic outcomes are often limited by reporting regulations and the research offers mixed findings on how the amount of money spent impacts achievement. In the last 40 years, school districts have shown: (1) an increase in racial resegregation, (2) a rise in inequitable distribution of financial resources, (3) a decrease in financial regulations, and (4) a rise in racial minority student populations (Jennings, 2015). Due to the chronic and persistent achievement gaps as well as overall student underachievement, factors positively associated with increased academic performance should be explore more critically. The state of Michigan, in particular, has a unique history and current context in the debates of school financial reform, as it has been relatively active in public education legislature since the 1970s (Kenyon, 2007). Michigan is also the initial political landscape for much of the reform currently being executed at the federal level today; Michigan served as a pilot-type state of the Trump administration's education initiatives, receiving most of current reform years ago (i.e., high-charter and market-based school systems) (Kenyon, 2007).

This study is timely and essential because, at present, analysis on the topic is arguably stagnant due to research inconsistency. This is likely due to the lack of uniform reporting and overall availability of financial data made accessible for analysis. The use of limited data can result in ill-informed policymaking and misallocation of funds with student underachievement as an unintended byproduct. As with much of modern research, the current conversations about the economics of mass education efficiency

involve quantitative comparisons (e.g., standardized assessments, rates of achievement, and financial expenditures) as well as qualitative analysis of issues causing the numeric disparities (e.g., historic social structures, systemic barriers, and chronic limited access to quality schools). It is widely accepted that local, state, and federal governments are aware of the problems caused of disparities in funding and achievement, yet very little mass effective reform has taken place to date to address some of the historically residual inequity. Decades ago, Edmonds (1979) put the argument about school reform best saying:

> …(a) we can, whenever we choose, successfully teach all children whose schooling is of interest to us; (b) We already know more than we need to do that; and (c) Whether or not we do it must finally depend on how we feel about the fact that we haven't so far. (Edmonds, 1979, p. 23)

Edmonds boldly stakes the claim that the answers are within our current understanding of our system and that action must be our next step.

Significance of the Problem

According to the National Educational Assessment Progress (NEAP), in 2015, only 36% of the nation's fourth graders, 34% of eighth graders, and 37% of twelfth graders scored *at* or *above proficiency* in reading (NCES, 2017). That is to say, at present, the majority of American students enrolled in public schools are performing below grade level (i.e., 64% of fourth graders, 64% of eighth graders, and 63% of twelfth graders). This underachievement has been associated with children's family backgrounds, socioeconomic status, gender, race, access to technology, learning environments, access to healthcare, among a host of other variables explored by educational researchers

(Coleman et al., 1966; Wenlinksy, 2007). The rates for enrolled students living in low-income households or in poverty are also relatively surprising; at present, 14.8 million, or 21% of the nation's children are living in poverty (Jiang, Granja, & Koball, 2017). White children comprise 12%. Hispanic and African American populations have disproportionate amounts of children in poverty: 30% of Hispanic children and 36% of Black children (Jiang et al., 2017) (see Table 1 and Figure 2). Shaefer and Edin (2012) reported that 2.8 million American children live on less than $2 a day.

Table 1: Socioeconomic Status of Children in the U.S. Under 18 years old

	Children > 18 years of age	Low income children	Children living in poverty
White	77%	30%	12%
Black	13%	63%	36%
Hispanic	18%	61%	30%

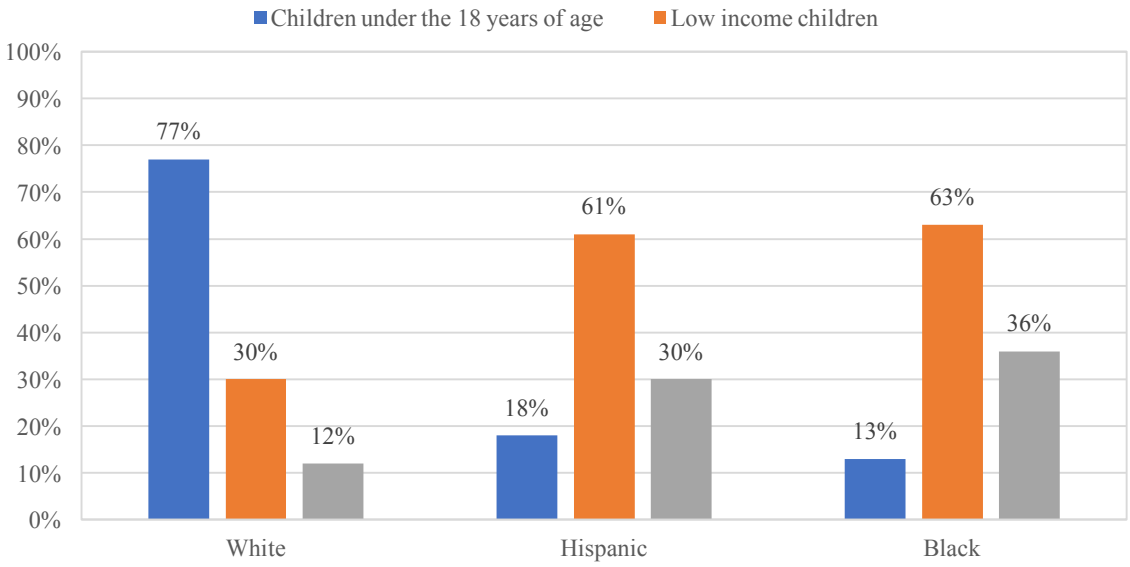


Figure 2: Socieonomic Status of Children in the US: 2015

Source: Jiang, Y., Granja, M., & Koball, H. (2017). Basic facts about low-income children:. Children under 18 years, 2015. National Center for Children in Poverty. Retrieved from http://www.nccp.org/publications/pub_1170.html and U.S. Census Bureau. (2015a). QuickFacts. Children under the age of 18. Retrieved from https://www.census.gov/

In addition to the challenges presented by the socioeconomic status of children, the actual teacher and student racial compositions of our public schools have also shown to produce unique obstacles to quality teaching and learning for these same children. Within public schools, 51% of students are White, 24% Hispanic/Latino(a), and 16% Black. White student enrollment has decreased in the last 10 years by 8% (NCES, 2013); the teaching force, however, is a little more homogenized: 82% White, 6.8% Black, and 7.8% Hispanic (NCES, 2013). With these numbers understood, it must be noted that the academic underperformance of children results in limited economic mobility during their adulthood. This economic status as an adult impacts the availability of resources for their children; children only have access to the resources afforded them by their parents and community. This can result is what is commonly referred to as *generational poverty* (Shannon, 2015).

Positively, education has shown to be a factor in disrupting this cycle of generational poverty (Darling-Hammond, 2010; Moore & Lewis, 2012). Several researchers have attributed the underachievement of Students of Color to teachers' implicit biases about race and socioeconomic status suggesting that the cultural undertones of White America reinforces perceptions of intellectual inferiority of the Black community (King, 2017; Wiggan, 2006).

This study is intended to explore a potential association between per pupil spending on instruction and academic outcomes on Michigan's standardized state test. Because per pupil expenditures are associated with a local educational agencies' (LEA) property tax revenues, expenditures must be explored in contexts of socioeconomics. This study is seeking to inform a developing theory on urban school crisis with hopes of

uncovering an expenditures threshold of significance. The need to explore the impact of poverty on education becomes evident when critically investigating academic outcomes among children, especially when disaggregated by race and/or class. The National Center for Children in Poverty (2017) explains poverty as "the single greatest threat to children's well-being" and states that effective public policies can make a difference with poverty's influence. Despite the nation's well-intended approaches to school reform, the underachievement of all the nation's children continues to be a dilemma.

Purpose of Study

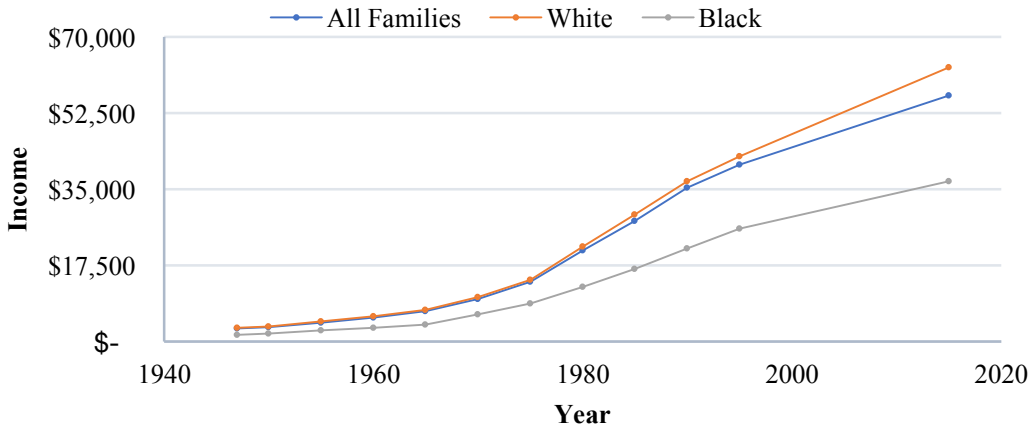
The purpose of this study is to investigate academic achievement and its relationship to finance expenditures for two main reasons: (1) the recent presidential administration's decision to decrease funding for public education, and (2) ethnically-based disparate outcomes being heavily correlated with family socioeconomics. To explain, the defunding of public schools is in direct support of education privatization that has many drawbacks for impoverished urban communities. The United States Department of Education's support of school privatization threatens the establishment of free and quality public school for everyone as it disproportionately benefits the wealthiest Americans. Communities and populations in low-crime, high-priced residential communities enjoy less of a challenge funding and securing funding for high-quality charter schools while poorer communities will not have that advantage of ease. The second issue of consistent racialized outcomes makes ethnicity a salient point of contention. Race and poverty correlations are evident; Black Americans have chronically grossed less than White Americans in annual income for at least the past seven decades (see Table 2 and Figure 3). Because per pupil spending is affected by local and property-

tax based revenue, communities suffering with historic and generational poverty are more likely to underachieve academically largely because of environmental factors and inadequate access to a high-quality education. This positions communities with high concentrations of poverty into detrimental cycles of under-funded education systems.

Table 2: Median Household Income by Race, 1947-2015

Year	All Families	White	Black	Difference	% Different
1947	$3,031	$3,157	$1,614	$1,543	49%
1950	$3,319	$3,445	$1,869	$1,576	46%
1955	$4,418	$4,613	$2,544	$2,069	45%
1960	$5,620	$5,835	$3,230	$2,605	45%
1965	$6,957	$7,251	$3,993	$3,258	45%
1970	$9,867	$10,236	$6,279	$3,957	39%
1975	$13,719	$14,268	$8,779	$5,489	38%
1980	$21,023	$21,904	$12,674	$9,230	42%
1985	$27,735	$29,152	$16,786	$12,366	42%
1990	$35,353	$36,915	$21,423	$15,492	42%
1995	$40,611	$42,646	$25,970	$16,676	39%
2015	$56,516	$62,950	$36,898	$26,052	41%

Source: U.S. Census Bureau (2015).



Source: U.S. Census

Figure 3: Median Annual Family Income: 1940 - 2010

The aim and scope of this research is limited and only seeks to address the educational inequities in populations of children living in poverty and low-income communities. The literature review explores the historical underpinning of racial inequities as it relates to academic achievement and economic mobility. The systemic shortcomings in addressing the needs of the poor are constant threats to public school success and if lasting changes are expected in urban schools serving low-income communities, intentional and explicit efforts must be developed and implemented. This research hopes to serve as a catalyst in the ongoing conversation on evidence-based urban education reform.

Research Questions

The following research questions are the foundation to this study:

1. To what extent are per pupil expenditures on instructional services associated with academic outcomes on M-STEP 5th, 8th, and 11th grade English Language Arts proficiency?
2. To what extent are per pupil expenditures on instructional services associated with academic outcomes on M-STEP 5th, 8th, and 11th grade math proficiency?
3. Is there an association between race, school district, per pupil expenditures on instructional services, and M-STEP academic outcomes?

The hypothesis tested for this study was: *per pupil expenditures on instructional services will be associated with M-STEP test proficiency rates.* The null hypothesis is: *there is no correlation or association between the variables.*

Overview of Methods

This study uses a non-experimental quantitative research design to explore the association between M-STEP outcomes and per pupil expenditures on instructional services. A multivariate model was developed and coefficients were observed in regard to variable contributions to variance. This study uses a multiple linear regression model to investigate the statistical association between the outcomes and spending. This design was used because the study seeks to find the effect size, or *beta,* correlation coefficients, and statistical significance of two or more predictors on a continuous dependent variable (Hahs-Vaughn, 2017, p.58). This model was the best to investigate the research questions because the data points include repeated measures for each school district.

Synthesis of Conceptual Framework

This study utilizes two theories to analyze the research questions critically as well as to situate the study in context of society—one post-structural and one post-modern. The post-structural theory used in this study is *critical theory* and the post-modern theory is *social dominance.* Critical theory is a 20th century conception that will be used to inform the financial analysis of Michigan State school districts and social dominance theory will help to inform the historical events that led up to the current state of public education. It can easily be argued that this conceptual framework fits into a broader idea

of ecological systems theory as developed by Bronfebenner (1979). More on these three theories will be discussed throughout this chapter.

The exploration of these questions is timely and relevant because children of ethnic minorities are chronically and disproportionally impacted by poverty and have markedly lower academic underachievement (Anderson, 1988; Bennet De Marrais & LeCompte, 1998; Darling-Hammond, 2010; Howard, 2006; Memmi, 2000; Wilson, 2012); therefore, research should focus on economic and racialized barriers in society if disparities are reflecting specific economic and racialized characteristics. In addition, policy reform for urban schools should also embody solutions that intentionally and explicitly address these barriers if race and economics (i.e., poverty) are truly indicative markers of bias and disproportionality. Even though all children in the United States are underperforming across all racial groups, there remains a persistent gap between White children and children of color. The reality of the failure of all of the country's children lends credence to the philosophy that the education system in its entirety needs improvement. Nevertheless, the challenge to get all students to perform equally well remains racialized as resource allocations and performance outcomes illustrate.

This research seeks to position the current academic disparities among ethnic groups in America in the historical context of economics in an attempt to explain the issue of student underachievement as one of economic concern rather than a primarily educational concern. The conceptual framework for this study includes elements of post-structuralism and post-modernism as it deconstructs paradigms of power, privilege, and dominance in American society and their impact on the social constructions surrounding schooling. It can easily be argued that this conceptual framework fits into the historic and

broader philosophic theory of ecological systems as developed by Bronfenbrenner (1979). Similarly, Bronfenbrenner's theory is that people learn and grow within nested systems that he compared to a "set of Russian dolls" that exposes an individual to the world in levels: the first level is the immediate innermost level of a developing person; the second is the relationship between the individual and their immediate settings; the third level is explained as one where events are occurring that may impact an individual even when he or she is not present (p. 3-4). These levels are nested within an ecologic macro-system and are labeled microsystem (personal/immediate setting), mesosystem (relationship with microsystem), and exosystem (where the individual is not an active participant). Within this study's conceptual framework, the use of critical and social dominance theories would fit into the analysis of Bronfenbronner's ecological exosystem as this framework seeks to analyze the larger contexts in which the children are traditionally not active participants, but rather passive recipients of consequences.

Post-structuralism and critical theory. The post-structuralist approach to the analysis of society involves the deconstruction of pervasive and generalizing narratives (Lemert, 2004; Morrison, 1995). Post-structuralism can be explained as a way of thinking that removes social structures as the center of social analysis and gives the production of knowledge back to the subject (Peter, 2001); post-structuralism articulates the standpoint of the subject and pushes against macro-level analysis that offer totalistic theories (Smith, 1999). Twentieth century French philosophers Jacques Derrida and Michel Foucault were notable in their work on the critical deconstruction of social institutions and the revealing of systemic issues of dominance and oppression. Derrida's theoretical approach argues that the problem with society is *logocentrisim*, or the quest for the universal, and the use

of language to do so oppressively (Lemert, 2004). The critical analysis of Derrida, among other European philosophers, began the current investigation into oppressive social systems, human agency, and political resistance as they offer a framework to understanding the institutions surrounding and producing poverty.

This research study uses the lens of critical theory to explore themes of dominance and power demonstrative in American economics structures. Critical theory is a post-structuralist perspective developed by philosophers Max Horkheimer and Theodor Adorno out of the Frankfort School in Germany during the 1920s. It is a theory that seeks to understand and promote human emancipation from social oppression through clear, conscious, explicit, and intentional investigation into human social systems (Bohman, 2005; Corradetti, 2012). Critical theory seeks to understand experiences of marginalized populations without the desire of generalizability, but rather to promote inclusion from often muted populations. Horkeimer (2002) explains that the goals of critical theory are to explore "the reconstruction of society based on non-exploitative relations between persons; and the restoration of man to center place in the evolution of human society as a self-conscious, self-managing subject of social reality" (xiv). Horkiemer's views, first published in 1972, reinforced Marx's ideas of proliferate resistance from the 1800s (Morrison, 1995) and Freire's banking model and emancipatory learning theory from the 1960s (Freire, 2000), all of which validate the agency and authority of people in the creation of knowledge and power constructions.

Post-modernism and social dominance theory. Post-modernism began to bridge the gaps between social discipline, uniting the arts with the sciences and ultimately promoting a higher degree of contextualization of social discourses. Sociologists,

linguists, and philosophers such as Michel Foucault, Jean-Francois Lyotard, and James Gee began to emerge as dominate thinkers in the post-modernist movement (Lemert, 2004). Similar to post-structuralism theories (e.g., social dominance), post-modernism seeks to breakdown grand narratives and uncover multiple claims of truth. Post-modernism opposes foundationalism and structuralism arguing against the social hierarchies of created by system structures (Peters, 1999). Foucault is known for producing historically-grounded arguments explaining the foundational principles of knowledge and power, suggesting that social structures and institutions are fundamentally governed by the relationship between the two discourses (i.e., knowledge and power) (Foucault, 1972). This ideology is used to further informs the post-modern social dominance theory used to analyze this research study on structural and budgetary challenges.

The post-modernist ideology, social dominance theory, "is related to research on issues such as prejudice, stereotyping, discrimination, racism, sexism, neoclassical elitism theory, social identity theories, and works in the field of political socialization" (Howard, 2006). Social dominance theory has four basic assumptions (Sidanius & Pratto, 1993):

1. Human social systems are predisposed to form social hierarchies, with hegemonic groups as the top and negative reference groups at the bottom.
2. Hegemonic groups tend to be disproportionately male, a phenomenon that social dominance theorists call the "iron law of andrancy."
3. Most forms of social oppression, such a racism, sexism, and classism can be viewed as manifestations of group-based social hierarchy.

4. Social hierarchy is a survival strategy that has been selected by man species of primates, including *Homo sapiens*.

Social dominance theory suggests a deterministic tone supporting the idea that "human beings are inherently predisposed to create group-based systems of categorization and discrimination" (Howard, 2006, p. 35). Social dominance theory works well as a legitimation narrative used to explain the residual impacts of historic economic and social oppression and isolation of ethnic minority groups. Wiggan (2006) provides modern examples of this pervasive paradigm citing 1990s scholarship that continues to explain the underachievement of African Americans as an inevitable genetic disposition rather than a product of institutionalized and structural oppression. This study uses both critical and social dominance theory to better position the necessity of this research.

Subjectivity Statement

Why poverty? Why education? The following section is about me, the researcher, and is intended to help the reader more thoroughly understand my research questions on the association between education and poverty for the remainder of the study. My intentions with this statement are to better situate the research questions within context of my academic pursuits as well as share my implicit and explicit biases toward the subject.

I was born in 1986 in Detroit, MI. I was my mother's third and my father's second daughter—they had another daughter seven years later. My parents were in their earlier twenties when I was born; my mother was finishing nursing school to then become a registered nurse for 25 years, and my father was finishing a four-year term in the military to later become one of Detroit's finest policemen for nearly a decade. My parents were married throughout my childhood and later divorced during my earlier twenties. I grew

up going to private schools and experienced very little poverty as a child, in my opinion. The United Nations defines *income poverty* as "when a family's income fails to meet a federally established threshold that differs across countries" (United Nations, 2007). In the United States, the poverty threshold was set by the U.S. Census Bureau in 1960 and has not changed since (see Table 3). Growing up in a family of six was a very good foundation for me. We moved around the country relatively often and I went to eleven schools before graduating from the 12th grade, yet I felt very stable growing up due to my intact family structure. However, those various educational experiences while growing up would inform much of my later understandings of a high-quality K-12 education.

Table 3: Poverty Thresholds for 2016 by Size of Family and Number of Children under 18 years

Size of family unit	Weighted average thresholds	Related children under 18 years				
		None	One	Two	Three	Four
One person (unrelated individual):	12,228					
Two people:	15,569					
Three people	19,105	18,774	19,318	19,337		
Four people	24,563	24,755	25,160	24,339	24,424	
Five people	29,111	29,854	30,288	29,360	28,643	28,205

Source: U.S. Census Bureau. (2017). How the census bureau measures poverty. *U.S. Census Bureau.* Retrieved from https://www.census.gov/

I flourished as a bright, intelligent, inquisitive child wanting for nothing more that what was already sufficiently provided to me. However, life was not to stay with the same amount of ease. By the age of 26, I was a single mother who had been on government assistance for five years with little evidence of future prosperity. Despite having my relatively stable upbringing and now holding a master's degree, I was

suffering in poverty bringing home a meager income as a full-time teacher. My poverty was a result of being only one generation, one divorce, one out-of-wedlock child away from economic instability. In a historical perspective not unfamiliar to most African Americans, my maternal grandmother relocated to the North (i.e., Detroit) as a child from Phenix, Alabama in the 1950s; her parents fled the "Jim Crow" South in hopes of a better future in the industrialized Midwest. My paternal grandparents moved to Newark, New Jersey from Florida and Georgia under the same pretenses in the 1940s. My familial generations before me remember segregated buses, schools, and water fountains and attended marches to ensure my better future. My upbringing could not undo the perpetual economic and social lag that has been unaddressed by our nation. Reports show that African Americans have historically and chronically made less than White Americans almost to the extent to ensure African Americans' inevitable blight into poverty. I realized that the trendy term "first generation college student" comes with compounded challenges beyond just the unfamiliar wall of the Ivory Tower.

As I progressed throughout higher education for over a decade, the deprivation experienced by my daughter and I, and millions other Americans, only worsened as the nation's top income earners continued to concentrate power and wealth to a small few; according to the U.S. Census, the top five percent of households live on more income than the bottom 50 percent of households (Shannon, 2014). I study poverty and education because the challenges accompanying "first generation" African Americans are far more detrimental to the double consciousness of these intellectual individuals than are beneficial to the building up of integrity. From my experiences, I investigate the impacts

of inadequate support for our nations' youth who chronically live in poverty to assist in the alleviation of the suffering caused by it.

Summary

The chapter introduced the study being investigated throughout this research. This section explained the rationale behind analyzing the relationship between per pupil spending on instruction and academic outcomes. It included a summary of the problem, overview of the study, research questions, the conceptual framework, a subjectivity statement, and definition of relevant terms. Chapter Two will expand upon the literature briefly discussed in chapter one on the topic of socioeconomics, race and ethnicity, education, and policy throughout American history. Chapter Two discusses "culture as wealth" when positioning education within American society. The State of Michigan is also discussed in detail to help better contextualize this research. Chapter Three explains the research design and methodology used to investigate the research questions. Chapter Four presents the statistical findings of the study. Chapter Five provides a discussion of the findings and provides recommendations and solutions for education reform and urban policy.

Definition of Relevant Terms

Per Pupil Expenditures (PPE) on instructional services: The cost of activities dealing directly with the teaching of students in the classroom or in a classroom situation. For this data, instruction is in the sum of basic instruction, added needs, and adult education. This definition also includes activities associated with assisting the instructional staff with the content and process of providing learning experiences for pupils (CEPI, 2015).

M-STEP Proficient: For grades 3-8, proficient means "the student's performance indicates understanding and application of key grade level content standards defined for Michigan students. The student needs continued support to maintain and improve proficiency" (Michigan Department of Education, 2016). For grade 11, proficient means "the student's performance indicates understanding and application of key high school content standards defined for Michigan students. The student needs continued support to maintain and improve proficiency and to be career and college ready" (ibid).

M-STEP Advanced: For grades 3-8, advanced means "the student's performance exceeds grade level content standards and indicates substantial understanding and application of key concepts defined for Michigan students. The student needs support to continue to excel" (Michigan Department of Education, 2016). For grade 11, "the student's performance exceeds the high school content standards and indicates substantial understanding and application of key concepts defined for Michigan students. The student needs support to continue to excel and to be career and college ready" (Michigan Department of Education, 2016).

Race: The U.S. Census Bureau must adhere to the 1997 Office of Management and Budget (OMB) standards on race and ethnicity that guide the Census Bureau in classifying written responses to the race question. OMB requires five minimum categories: White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander. The categories are defined as: *White—a* person having origins in any of the original peoples of Europe, the Middle East, or North Africa; *Black or African American*—a person having

origins in any of the Black racial groups of Africa; *American Indian or Alaska Native*—a person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment; *Asian*—a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent; *Native Hawaiian or Other Pacific Islander*—a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands (U.S. Census, 2017b).

Poverty: Following the Office of Management and Budget's (OMB) Statistical Policy Directive 14, the Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty. The official poverty definition uses money income before taxes and does not include capital gains or noncash benefits (such as public housing, Medicaid, and food stamps) (United Nations, 2017).

Urban: The U.S. Census Bureau, who takes a leading role in documenting and tracking various United States populations, explains urban criteria saying, “[there are] two types of urban areas: Urbanized Areas (UAs) of 50,000 or more people; Urban Clusters (UCs) of at least 2,500 and less than 50,000 people” (U.S. Census, 2013).

CHAPTER TWO: REVIEW OF LITERATURE

Introduction

"We the people of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Prosperity, do ordain and establish the Constitution of the United States of America." —U.S. Constitution, pmbl. 1787

Chapter Two includes a review of the literature around the topic of economics, per pupil spending on instruction, and public school outcomes throughout recent American history. This chapter is intended to help the reader better contextualize the significance of the problem of inequitable wealth and resource distributions and their impacts on children's academic achievement. This chapter provides the critical lens necessary to best understand these complexities in public schooling and analyze the multiple layers investigated throughout this study. To expound upon the assertions of my inquiry, this section will describe the sociopolitical landscape of 19th and 20th century America, including culture as a means of wealth, and the chronic disenfranchisement of ethnic minorities. This review concludes with historical highlight of the state of Michigan's public school districts in context of the larger American society.

Nationally speaking, the numerous political efforts to resolve racialized achievement, proficiency scores on standardized tests still produce disparate outcomes between students of color and their White counterparts. There are approximately 320 million people living in the United States and 48% of them are under the age of 18, the largest contributors to this boom being Hispanic and Latino youth (U.S Census Bureau, 2015). The current racial composition of United States public schools is: 51% White, 24% Hispanic/Latino, 16% African American/Black, 5% Asian/Pacific Islander, and 1%

American Indian/Alaskan Native (U.S Census Bureau, 2015). The country's changing racial and ethnic composition demonstrates a need to develop and better inform multicultural education practices and teaching strategies as well as a need to understand multicultural challenges. This study will expand upon the findings of many historic educational policies by analyzing funding and expenditure revenues in school districts throughout American history concluding with specifics on achievement and funding particularly for the state of Michigan.

20th Century Education and Economics: A Brief Overview

The last three centuries marked a very significant time period in human history. The United States, along with the world, experienced population growth and economic prosperity that was unprecedented in the world prior to this time period (Maddison, 2001) (see Figures 5 and 6, and Tables 4 and 5). The conversations about wealth and power that arose during the ratification of the United States' Constitution were a result of an extensive European history of capitalism and colonization that predated the Pilgrims landing in New England by nearly two centuries. In 1787, founding fathers Alexander Hamilton and James Madison were among the influential economists and political figures who criticized the Constitution and foreshadowed the political and economic outcomes that we are experiencing today (i.e., inequitable political power and densely concentrated wealth) (Hutchinson, Nyks, & Scott, 2015; Nelson & Harrigan, 2011). By the late 1800s, the country was beginning to reap the benefits of new machinery and slave labor's ability to produce unprecedented agricultural profits derived from the profits of slavery (see Table 4, Figures 4 and 5). Vogel and Harrigan (2007) explain three reasons for this time periods' rapid growth and expansion both population and wealth: (1) *agricultural*

surplus, (2) *innovation in transportation*, and (3) *increased control over death rates*.

Table 4: Level and Rate of Growth of GDP: World and Major Regions, 0–1998

	0	1000	1820	1998	0-1000	1000-1820	1820-1998
Africa	7	13.7	31	1939	0.00	0.20	1.84
Asia (excluding Japan)	77	78.9	390.5	9953	0.05	0.29	1.92
Japan	1.2	3.2	20.7	2582	0.10	0.23	2.75
Latin America	2.2	4.6	14.1	2942	0.07	0.14	3.05
Europe	102.5	116.8	694.4	33726	0.01	0.22	2.21
United States, Canada, Australia, and New Zealand	0.5	0.8	13.5	8456	0.05	0.35	3.68
WORLD AVERAGE	102.5	116.8	694.4	33726	0.01	0.22	2.21
Source: (Maddison, 2001)							

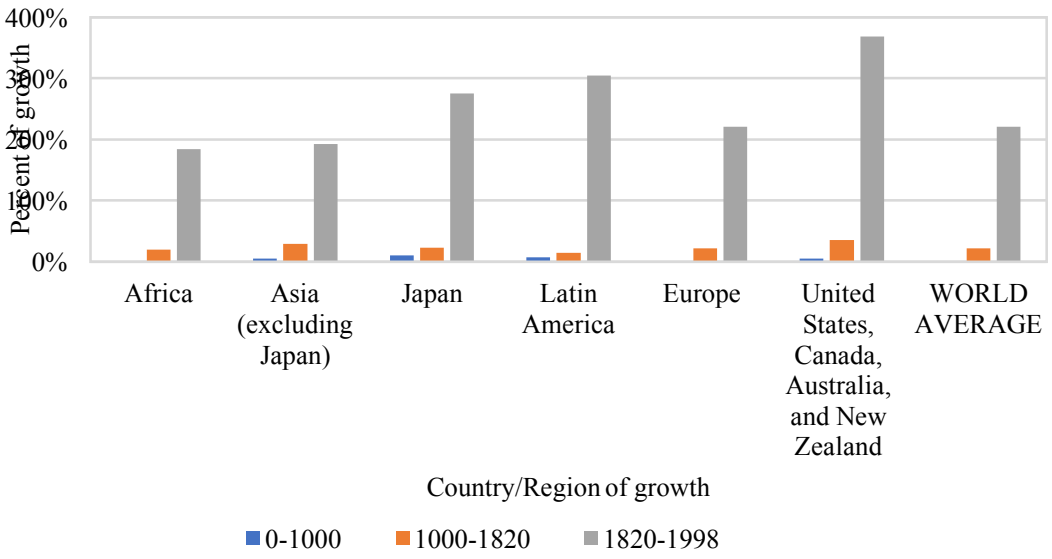


Figure 4: Level and Rate of Growth of GDP: World and Major Regions, 0–1998

Source: (Maddison, 2001)

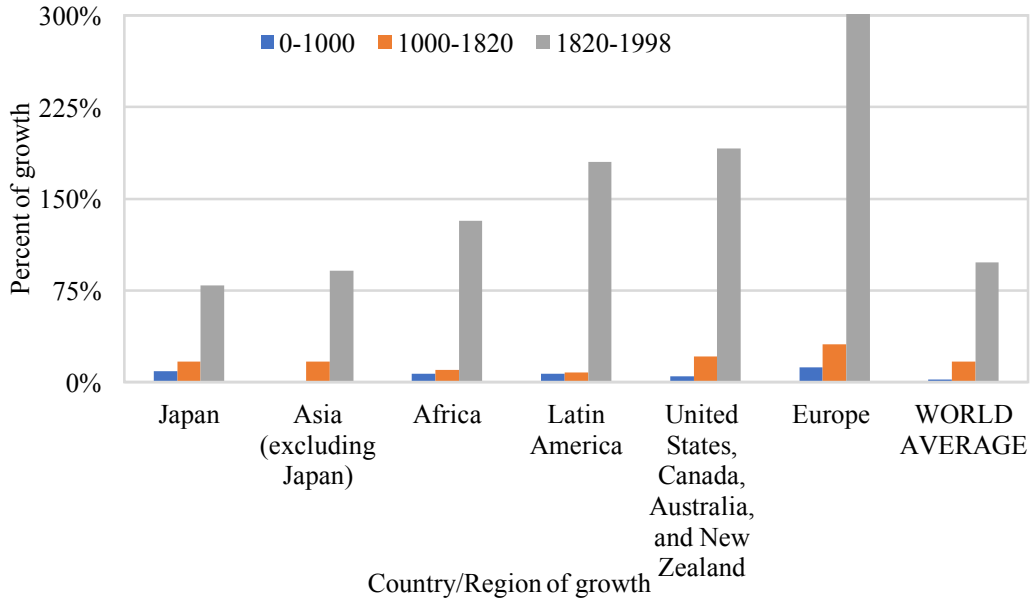


Figure 5: Level and Rate of Growth of Population: World and Major Regions, 0-

Source: (Maddison, 2001)

First, it was not until that time that a large enough *agricultural surplus* was produced to enable a majority of the population to live off the agricultural production of a dwindling minority of the population. The level of urbanization is inversely proportional to the number of farmers it takes to support one non-farmer who lives in the city (Vogel & Harrigan, 2007, p. 41). Until this period, most of the human history consisted of small population living in merger conditions (Maddison, 2001; Sachs, 2015; Vogel & Harrigan, 2007) (See Figure 6 and Figure 7). The second factor for *innovation in technology* even further supported the advancements of the agricultural surplus by making raw materials more quickly, easily, and cheaply transported. *Increased control over death rates* was a product of the first two factors as agricultural surplus and advanced technology allowed more time to be spent on education. The rapid development of medical advances was a result of the new technology, as well as the increase in education on both medical and sanitation principles (Vogel & Harrigan, 2007).

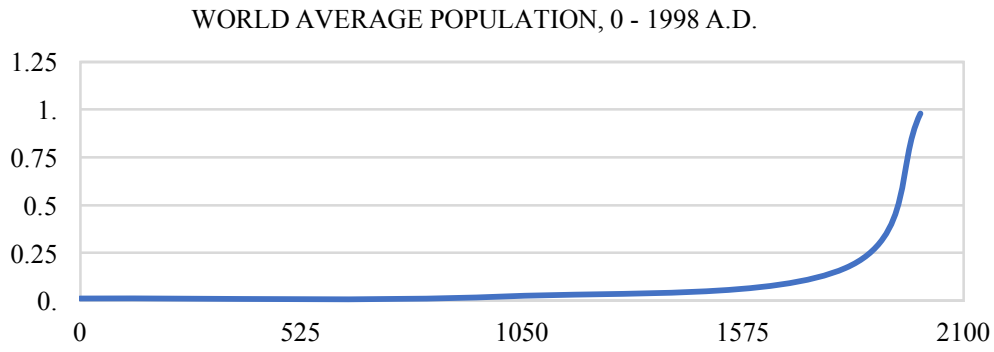
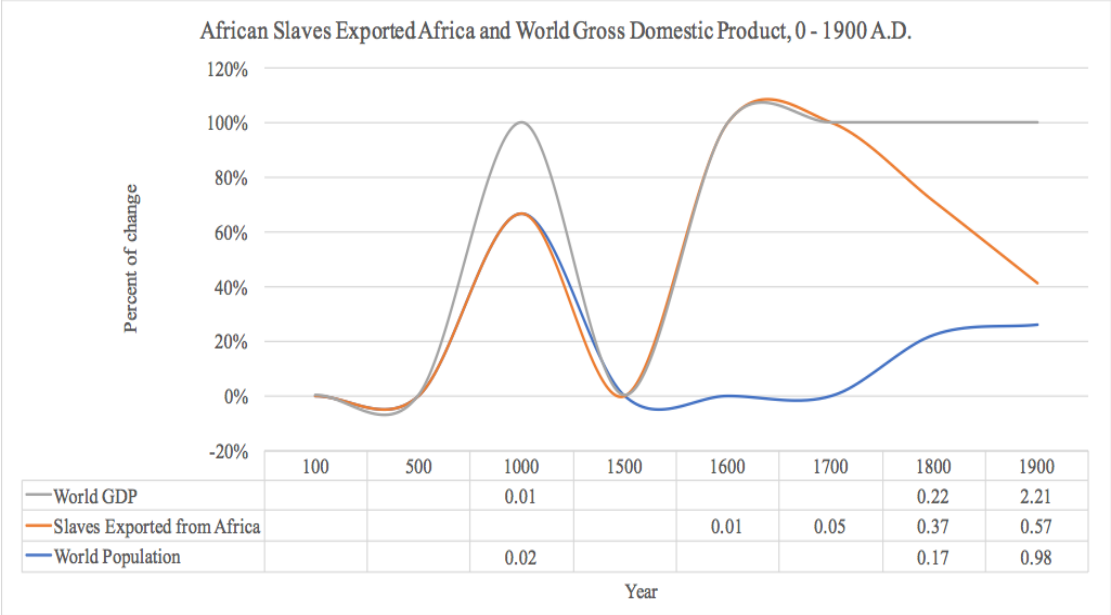


Figure 6: World Average Population, 0-1998

Source: (Maddison, 2001)

Due to social and economic segregation, all American citizens did not evenly receive the benefits and surpluses of the new U.S. Constitution. While united after the Civil War ended in 1865, impressions of division, oppression, and colonialism left indelible marks on the ideologies of many Americans. The Constitution was intended to unify the country while also providing a framework for implementing true democracy (Nelson & Higgins, 2011; Vogel & Harrigan, 2007); yet, many American citizens were



	100	500	1000	1500	1600	1700	1800	1900
World GDP			0.01				0.22	2.21
Slaves Exported from Africa					0.01	0.05	0.37	0.57
World Population			0.02				0.17	0.98

Figure 7: African Slaves Exported from Africa and World GDP, 0 - 1990

Source: (Maddison, 2001)

still not considered equal and were consequently not included in the "our" of our national preamble — this included most ethnic minority groups, women, and the nation's poor (see Table 2 and Figure 3).

Arguably, the late 1800s was a transitional period from the feudal system adopted from Great Britain for centuries into the American capitalism system we see today; capitalism can be understood as evolution of political systems dating back to the colonization of Africa, Asia, and South America (Clarke, 1998; Diop, 1987; Finch, 1991; Wiggan, 2015). In capitalism, a supply-and-demand economy promotes and rewards maximization of profit and individualism. Oversimplified, a capitalism system is when producers use raw goods and laborers to create products which in turn are sold and create revenue; ideally, the producers' revenue would proportionately reflect their contributions and be recycled in the market by paying laborers fairly and maintaining opportunities for production and consumption. What is promoted and sometimes protected in a capitalist economic system are major companies and shareholders receiving more than an equitable share of the revenue, avoiding federal and state tax programs, and concentrating wealth to a small number of individuals. The top 62 richest billionaires in the world own as much wealth as the poorest half of the world's population, which is to say that 1% of the population owns more wealth than the other 99% combined (Elliot, 2016; Hutchinson, Nyks, & Scott, 2015). This concentration of wealth gives the political lobbying strength, not accessible to the masses, to a small few.

Western capitalism can be considered anti-democratic because of the resulting unequal distribution of wealth and political power, and can be historically characterized by qualities such as: large federal tax-breaks for businesses, decreasing government

regulations, and increasing privatization of public agencies (Wiggan, 2011, p. 35).The early 1900s was the first time in human history where wealth began to grow rapidly, yet was still relatively concentrated within a few elite families typically known as WASP (White Anglo-Saxon Protestant) (e.g., Rockefeller, Carneige, Ford, Belk, and Levine, to name a few) as formerly noted (see Figure 8) (Maddison, 2001; Sachs, 2015; Vogel & Harrigan, 2007). During the early 1900, these families established themselves firmly in America's economic and politic scenes and benefited from government's reduced regulations and the increased support for business privatization. No surprising, in late 1940s, 57% of employed Americans worked for themselves. After the changes in privation and financial policies, only 7.5% in 2003 worked for themselves mostly due to the growth of mass incorporation of industries (Hipple, 2004). Wealth and political strength, as commonly explained by Marxist, was concentrated to a small few producers and consumed by the masses of laborers. There has not been much progress in more equitable wealth distribution since this period (see Table 1 and Figure 8).

Public Education Landscape and Legislation in the 1900s

Anderson (1988) explains the sociopolitical landscape of the 19th century as one of political progression for Blacks in the South as a result of Blacks' persistent pursuit of freedom and their resulting gains in political office. For most newly freed slaves, education was empowering and necessary in order to gain access into the democratic society for which they were now living. Beginning in the three decades leading up to the end of the Civil war, African American became insatiable in their desire to educate their population, ultimately leading to the development of universal schooling. A byproduct of criminalizing education for African American slaves was a the development of a strong

relationship between literacy and freedom; this had significant implications for liberation (Anderson, 1988). Ex-slaves can be attributed for establishing Sabbath schools, or church-sponsored schools, and for promoting literacy without regard to economics. During this period, it was traditional throughout the country for only upper class White children to be educated as wealth and education were often complimentary (Shannon, 2014). African Americans during antebellum times often sought non-traditional ways to education Black children in the face of persecution and financial constraints. During the end of the American Civil War, and immediately following, schools serving students were mostly funded by the communities they served; particularly within Blacks communities where public and government assistance was still restricted. Northern philanthropic efforts were made to help educate the underprivileged, disenfranchised, yet newly freed African Americans (Anderson, 1988; DuBois, 1903; Shannon, 2014):

> This alternative to state-financed public education was necessary because in the early twentieth century whites all over the South seized the school funds belonging to the disfranchised black citizens, gerrymandered school districts so as to exclude blacks from certain local tax benefits, and expounded a racist ideology to provide a more justification of unequal treatment. (Anderson, 1988, p.154)

Well-regarded scholar Du Bois (1903) recognized the contributions of the Freedmen's Bureau noting, "the Bureau invited continued cooperation with benevolent societies, and declared: 'It will be the object of all commissioners to introduce practicable systems of compensated labor,' and to establish school" (Du Bois, 1903, p.35). In addition to the Freedman's Bureau, the newly-freed Black community made substantial gains from the

support of northern philanthropy like the Carnegie Foundation among others. During this time until the turn of the century, before the institutions and structures of schooling were what they are today, intentional effort such as the 1874 Kalamazoo (Michigan) School Case and 1928 *Plessy v. Ferguson* attempted through legislation to mend the resource depravity of urban schools by promoting equal funding and equal allocations of resources.

Prior to the 1950s, American society experienced several massive shifts in social culture resulting from the freeing of the African American slaves and the joining of the American confederate south with the united northern states. Post-antebellum ideologies and the signing of the Emancipation Proclamation in 1863 resulted in an overall increase in the Black community's involvement of political activism and the fight of equal rights to a high-quality education being one of those rights (Anderson, 1988; Rury & Hill, 2012; Shannon, 2014). American culture began to reflect more progressive attitudes after the first two waves of the feminist movement and the change in the demographics of the working-class due to World War I (1914 – 1919), the Great Depression (1929 - 1939), and World War II (1939 – 1945). Nevertheless, the turn of the century until the 1930s marked a time of increased Black mobility and intellectual enlightenment resulting in the Harlem Renaissance movement, the introduction of mass education and literacy, and the continuation of Black resistance to sociopolitical Eurocentricity.

After the "Baby Boom" era began the movements of the 1960s. Major gains were made during this period in many areas of social reform in America including public education. One of the most influential studies on educational policy in America, the *Coleman Report,* was published in 1966 by the U.S. Office of Education in response to a

two-year commission by the President and Congress. The report was covered four main objectives regarding public schooling in America: (1) the extent to which the racial and ethnic groups are segregated from one another in the public school system, (2) whether the schools offer equal educational opportunities, (3) how much did the students learn (as measured by their performance on standardized achievement tests), and (4) if there is a relationship between students' achievement and the kinds of schools they attend (Coleman et al, 1966, p. iii - iv). The report collected data from over 3,000 teachers and approximately 600,000 students in grades 1, 3, 6, 9, and 12. Researchers used variables such as teacher and administrative attitudes toward teaching and learning, as well as their attitudes on ability and achievement assessments of students. The report concluded that, "taking all of these results together, one implication stands out above all: That schools bring little influence to bear on a child's achievement that is independent of his background and general social context" (Coleman et al., 1966, p. 325). While the summary is oversimplified here, the implications of this report are still pervasive today, particularly present in current right-wing politics. Supporters of this report use these findings to inform educational policy at all levels (i.e., federal, state, and local). A major contradiction produced by the ideology of the report is that money does not matter in regard to student academic achievement in schools. When considering this stance in conjunction with the report (i.e., money does not matter as much as family background), it is important to note, however, that research is quite unfounded in this area (Hanushek 2016; Wenglinsky, 1997).

The *Coleman Report* positioned socioeconomic status of a child's family as the number one contributor to their academic success. Educational researcher Gee (2012)

extensively explored the relationship and association with literacy and politics, highlighting many reactionary educational reform policies in the late 20th century. Several "literacy crises" in our country earmarked points of educational change during this time; consequently, President Lyndon B. Johnson notably enacted America's "War on Poverty" which, in the education world, resulted in policy and practice reform that sought to combat ethnic minority Americans' reading-proficiency lag behind their White counterparts. Educating all children in America became a pertinent issue.

> In the 1960s the United Stated decided for the first time in its history to educate on its citizens, Rich and poor, black and white. The United States wanted good and integrated schools for all children. The gap between rich and poor children in between many minority children and white children became a central concern. Of the most serious of these gaps was in reading. Children from poor homes and some minority children learned to read less well than more privileged children. At the time, this issue was seen as integrally connected to poverty and discrimination based on race and class. Thus, attempts were made to speak to the problems children faced not just in school, but at home, in communities, and in society. (Gee, 2012, p. 26)

The idea of equipping children with necessary skills to become active participants in their own liberation in society has remained pervasive in much of the literature on education policy since the turn of the 20th century. The connections between education and socioeconomics had become accepted and salient issues. Nevertheless, neoliberalism in America became a deterrent for equitably education reform efforts and direct action to ensure high-quality instruction became less of a concern for our country.

Public Education Landscape and Legislation in the 2000s

A market-based education system as proposed by current administration reduces regulations of schools and school policies, concentrates cultural capital and wealth to those you have the economic mobility to choose a school, defunds public schools which voucher programs that reallocate state funding from public schools to private and charters, and ultimately creates a market-based mentality in a compulsory field (i.e., K-12 education) that dramatically impacts the quality of life for most individuals. The ideology of free-market capitalist schooling guarantees that children without social and economic capital are left at schools that no one elects to attend; this results in schools that teach the nation's poorest children, in the most impoverished areas, with the most defunded resources as they have been allocated elsewhere. The children most affected are minority youth and children living in poverty. Assuming schools function best when left alone "without unwarranted intervention" is essentially deregulation of schools resulting in the influx of charter schools as supported by Bush, Trump, and DeVos. Capitalism in education and free-market reform create increasing cultural and intellectual wealth gaps among the rich and the poor; mirroring the growing wealth gaps in our larger economy.

With the presidential election of Republican candidate George W. Bush came the 2001 education reform act known as No Child Left Behind (NCLB). NCLB served as a reauthorization of the Elementary and Secondary Education Act (ESEA) of 1965. NCLB stressed higher accountability for schools and teachers mandating states bring all students' reading and mathematics scores to proficiency by 2014 (Jennings, 2015). This testing accountability law led school systems into direct compliance with rigorous

standardized testing practices across grade levels hoping to ensure the federal funding attached to their students' achievement. The accountability reform movement has yielded valuable results in terms of data collection allowing stakeholders' the ability to review outcomes more critically especially when disaggregated by race and socioeconomic class.

As with all social institutions, the country's education system experiences issues and challenges as residual effects of economic conditions existing within the larger society. These systemic challenges serve as barriers to progressive and equitable reform initiatives in politics as well as in education. For instance, at present, President Donald Trump has appointed Betsy DeVos as Secretary of Education of the new administration. DeVos favors and school of choice options for public schooling and feels that the money for education is best spent by privatized charter schools. Charter school funds are managed by business partners and stakeholders and not state-bond or federally-bond public boards of officials. DeVos is a well-established Republican philanthropist from a private-school upbringing in Michigan. Her involvement in school voucher programs and parochial schools align with traditional Republican opinions on education: increase school of choice through market-based reform (Steward, 2016). DeVos's efforts "to expand educational opportunity…across the country have focused little on existing public schools, and almost entirely on establishing newer, more entrepreneurial models to compete with traditional schools for students and money" (Zernike, 2016, para. 4). Following a traditional Republican platform on education, President Trump and Secretary DeVos' efforts are to increase "school of choice" options for parents and to create an open-market model for the nations' public education system. Voucher programs allow state funds to be reallocated allowing families to choose where their child(ren) and tax

dollars go, such as a charter, private, public, or parochial schools. This model positions schools to compete for students as businesses compete for consumers as seen in capitalist systems. This perspective, and many more that are similar, lend themselves to political rhetoric that inherently falls short of adequately meeting the needs of all of the nation's children.

The arguments in opposition of the Trump administration's policies seek to illustrate the lack of choice for parents without the economic means to access to high-performing charter and private schools. Charter schools and even high-performing public schools in Detroit have application processes that exclude certain populations of children in an attempt to control enrollment. In Detroit, for example, and other major cities such as Chicago, New York, and New Jersey, high-performing schools employ a lottery system that pulls from a qualifying pool of applicants on waitlists every year to fill their limited empty spaces (Zernike, 2016). The vouchers being used to reassign students from poorly performing neighborhood schools ultimately drain public school systems of much needed financial resources to service their communities, particularly those in high-poverty urban communities like Detroit, as the money travels with the students in and out of districts.

The push for school privatization and increased market-based reforms in education reflect increasing social and wealth disparities caused by economic capitalism. High poverty, high minority, and urban districts were more than twice as likely as low poverty, low minority, and rural districts to report competition with other districts as a barrier to improving teacher qualifications. Regarding inadequate teacher salaries and other financial incentives, more than two thirds of high poverty and high minority districts faced financial hurdles when attempting to improve teacher qualifications, in

contrast to approximately half of low poverty and low minority districts. (U.S. Department of Education, 2007). The financial burdens on poorly performing schools include sanctioning from failure to meet "Adequate Yearly Progress" (AYP) goals. Sanctions for initial school failures include higher accountability measures and mandatory increases in instructional support for students. After consistent years of underperformance, the school must be converted to a charter school or be taken over by the state government (U.S. Department of Education, 2007). These neoliberal policies, (i.e., *No Child Left Behind*) have high accountability and punitive consequences that exacerbate the existing gap between the "haves" and "have-nots" of intellectual capital through financial regulations, including property-tax based school funding, financial incentives that are more beneficial to schools in wealthy communities, and strenuous and punitive accountability measures for chronic student underperformance.

Culture as Wealth

Several unique phenomena have developed in American society as a result of persistent social inequities and culture as valuable capital, or currency, is one of them. Culture can be understood as a distinctive set of norms, practices, and beliefs shared among a group of people. Cultural capital is the value that these norms and beliefs hold in society in regard to social acceptance and mobility. Sociologist and philosopher Pierre Bourdieu asserts that social and cultural capital serves as "wealth" or a *currency* within U.S. public schools and suggests that formal schooling is a way to increase that cultural wealth, stating:

> … the knowledges of the upper and middle classes are considered capital valuable to a hierarchical society. If one is not born into a family whose knowledge is

> already deemed valuable, one could then access the knowledges of the middle and upper class and the potential for social mobility through formal schooling. (as cited in Yosso, 2005, p. 70)

He explains this as a cause for the academic underachievement of students of color and students belonging to a non-dominate culture. He suggests that it is the unequal distribution of cultural and social wealth that is inhibiting academic success and grade matriculation of African American and Latino youth. More recently, educational researchers Ladson-Billings (1995) and Delpit (2006) both provide findings that suggest that culturally affirming school producers increased academic gains among African American students. This reality affirms that specific cultural norms are viewed as more valuable not only in schools, but also to the more powerful and influential members of society.

In this sense, it is the unequal distribution of cultural and social wealth that is inhibiting economic mobility, or in the educational sense, academic success and grade matriculation. Yosso (2005) explains how, "insight about how a hierarchical society reproduces itself has often been interpreted as a way to explain why the academic and social outcomes of People of Color are significantly lower than the outcomes of Whites" (p. 70). This is not to say that the culture of European Americans is superior to that of other cultures; this reality only affirms that European Americans' culture norms are viewed as more valuable to the most powerful and influential society members. The issues surrounding urban communities and education systems are unique. They are reflective of the complex social and economic systems present in urban centers.

Urban cities have advantages and disadvantages related to its dynamic multiculturalism. Urban centers enjoy the benefits of diverse cuisines, varied religious presences, and, typically, production and consumer benefits of numerous heterogeneous businesses. Top urban American cities based on population according to the U.S. Census Bureau are: New York, NY; Los Angeles, CA; Washington, DC; Atlanta, GA; Chicago, IL; and Detroit, MI. While the benefits of diversity are culturally and morally enhancing within these communities, the effects of poverty and differing social classes unique to these areas create almost surmountable obstacles. According to Lewis and Moore in *African American Students in Urban Schools* (2012), national issues in urban education include: teacher stability, student dropout rates, school funding, and resegregation; these characteristics are results of urban-city disadvantages such as: family dissolution and welfare dependency, historic discrimination of minorities, and high crime rates (Wilson, 2012). These issues are mostly reflected within the Black and Hispanic populations within these cities. For example, Blacks have higher representation in discipline practices reflective both within the larger society as well as within the urban school systems. Lewis and Moore (2012) explain that "African Americans accounted for 17% of the student population, yet they constituted approximately 33% of all suspensions." Lewis and Moore (2012) also reference a longitudinal analysis that concluded that among high school students in the US, "African American males represented a staggering 330% of the total number of suspensions and expulsions...roughly 3.3 times higher than the rate at which their same-gendered Anglo peers were suspended and expelled" (pp. 19 - 20). According to the U.S. Department of Justice (Glaze, 2011), the estimated number of male inmates under the age of 18 in both state and federal prisons as well as those being held

in local jails was comprised of approximately 640% more Black males than Whites (4,347 compared to 678). The state of a community is inevitably reflected in its local schools. Community issues cannot be separated from local education issues. Therefore, it would only follow that the disproportionality being scrutinized within a school should first be evaluated on a community and societal level.

Both formal and informal platforms of education need to be considered when discussing student achievement in urban schools. Because of the complex historical contexts in which present-day Black Americans dwell, Blacks are suffering from miseducation and misunderstanding. Most are living in generational poverty and suffering through institutionalized discrimination to an extremely detrimental degree. Payne (2005) describes *generational poverty* as having been living in poverty for at least two generations versus *situational poverty* that typically spans for a short period of time and surrounds a life event when there were limited resources for an individual or family. Due to early 20th century segregation laws, generational poverty constitutes most poverty present in Black urban families today. In combination with the historical context of Blacks in America and their predominantly low socioeconomic status, Black youth are falling victim to internalized feelings of failure, incompetency, and inferiority as well as falling victim to under-funded schools and culturally uniform teachers and teachings (Kozol, 2005). With accepting Freire's beliefs, the solutions must be found within the Black community.

Cultural Capital and Academic Achievement

Multicultural understandings of education reveal ideologies of intellectual and racial superiorities that have proved damaging to marginalized cultures. This is keenly

demonstrated in urban school reform movements that support student bussing and reassignment plans. Bussing across districts and neighborhood-integration policies are based on the idea that racial integration will promote higher academic achievement for students of color and help to close the academic achievement gaps. Gains and benefits for White students are also reported, but reassignment plans are traditionally used to allow for equitable access and to help better serve primarily disadvantaged communities. As Yosso (2005) explains, there are disparate outcomes of academic success among racial groups. According to the national and state-level assessments, the "achievement gap" that has been plaguing our system for decades is a direct result of the differences in proficiency levels between students of color, namely Black and Latino/a students in comparison to White students. The "achievement gap" also references the academic achievement differences experienced by students living in poverty and students who are not. This ideology is inherently flawed and a brief examination of the "achievement gap" yields support of its shortsightedness.

With this understood, instead of an actual score threshold as an objective, addressing the achievement gap repeatedly mentioned in research and academic texts merely seeks to close or lessen the point difference among racial or social groups regardless of whether the closing of the gap actually provides enough *positive* change to produce proficiency. For example, addressing the achievement gap could be Black students increasing their average reading score by 10 points in 2015 (i.e., from 248 to 258) and White students dropping in average reading scores by 16 points (i.e., 274 to 258), and thus closing the achievement gap and leaving both racial groups below the proficiency level of 280 (which is already the current case. This is, of course, not the

intention of many of the research and usage of achievement gaps. What is being sought is 100% proficiency of all students of all races and ethnicities.

In order to accept the suggestions of underperformance provided by proficiency scores from standardized tests, one must assume that school, teacher, and student demographics are either the same or similar enough for comparison across districts, cities, and states. Again, needless to say, all schools are not created equal. Facilities and teacher quality (i.e., certification and years of experience) available to students differ greatly from district to district and even from school to school. Rose (1989, 2009) and Kozol (2005) both explain that wealthy school districts spend two to three times more per student on instruction than poorer districts. In order to accept the claims of an achievement gap between races and social classes, one must disregard any impact of environmental issues on student academic achievement (i.e., at home living conditions and socioeconomic status). Additionally, policymakers should consider whether standardized national tests are actually testing students' proficiencies or do they indeed test teacher quality and teachers' abilities to prepare students for testing; these issues must be considered before broad sweeping generalizations are used to inform large policy changes.

To assess and control the perceived "achievement gap," the federal government has tied school funding allocations to national assessments. In 2002, the Bush administration signed into law *No Child Left Behind* (NCLB) as a reauthorization of the E*lementary and Secondary Education Act* (ESEA) of 1965 that mandated states bring all students' reading and mathematics scores to proficiency by 2014 (Jennings, 2015). This high-stakes accountability measure led school systems into direct compliance with

standardized testing practices across grade levels. The incentive-based protocols of NCLB created punitive measures for the country's most challenged school districts. Varying assessment tools are used nationwide with emphasis on the scores from federal assessments such as National Assessment of Educational Proficiency (NAEP), international assessments such as the Programme for International Student Assessment (PISA), and other state-developed or state-adopted standardized tests. For example, a financial hurdle of NCLB for poor school districts was with the recruitment and retention of highly qualified teachers:

> High poverty, high minority, and urban districts were more than twice as likely as low poverty, low minority, and rural districts to report competition with other districts as a barrier to improving teacher qualifications. With regard to inadequate teacher salaries and other financial incentives, more than two thirds of high poverty and high minority districts faced financial hurdles when attempting to improve teacher qualifications, in contrast to approximately half of low poverty and low minority districts. (U.S. Department of Education, 2007)

NCLB and the increase in public charter schools are indicative of the nation's support of free-market school reform. Wiggan (2011) explains that neoliberal economic policies "…are driving the neoliberal education policies that shift responsibility for inequality produced by the state onto parents, students, schools, communities, and teachers' which essentially sets up individual-level explanations and accountability schemes for systemic problems and challenges arising from globalization" (Wiggan, 2011, p.21). A free-market neoliberal education system reduces regulations of schools and school policies, concentrates cultural capital and wealth to those you have the

economic mobility to choose a school, defunds public schools which voucher programs that reallocate state funding from public schools to private and charters, and ultimately creates a market-based mentality in a compulsory field (i.e., K-12 education) that dramatically impacts the quality of life for most individuals. Smith argued "that capitalism had the ability to induce competition and to employ the most efficient systems of production, which when left to function without unwarranted intervention, would provide benefits for everyone, including the poor" (as cited in Wiggan, 2015, p. 35). This ideology does not mandate empathy and community and is inherently contradictory — as are similar elements of capitalism.

The intentions of vouchers and school of choice programs are to empower parents to choose the best educational environment that they see fit for their children. Opponents of school voucher programs are not against the idea of choice for parents; however, what opposing perspectives attempt to highlight is the compulsory nature of schooling in America and the limited economic resources required of many families to choose from the better schools. Public schools are directly and predominately funded by city property taxes, therefore directly making the quality of schools in a community directly tied to the income and taxable property-base of said community (Bennet deMarrais, & LeCompte, 1998). Quality private and charter schools are typically not located in the center of low-income neighborhoods and therefore are inaccessible to children living in low-income areas. Most charter and private schools are positioned to serve middle and upper class families. These are the families that have the cultural capital to navigate school systems and whose cultural capital is typically more rewarded in these educational settings (Yosso, 2005). For example, in Detroit,

> Charter schools are concentrated downtown, with its boom in renovation and wealthier residents. With only 1,894 high school age students, there are 11 high schools. Meanwhile, northwest Detroit — where it seems every other house is boarded up, burned or abandoned — has nearly twice the number of high school age students, 3,742, and just three high schools. The northeastern part of the city is even more of an education desert: 6,018 high school age students and two high schools. (Zernike, 2016)

Over 80% of the schools in Detroit are charter schools ranking the city second in the country in number of charters only after New Orleans, which has a 100% charter school reform initiative (Zernike, 2016).

Both neoliberal education and capitalist systems are only self-sustaining and beneficial for those with capital—financial and/or cultural. The ideology of free-market capitalist schooling guarantees that children without social and economic capital are left at schools that no one elects to attend; this results in schools that teach the nation's poorest children, in the most impoverished areas, with the most defunded resources as they have been allocated elsewhere. Assuming that schools function best when left alone "without unwarranted intervention" is essentially deregulation of schools resulting in the influx of charter schools as supported by Bush, Trump, and DeVos. Ultimately, capitalism in education and free-market reform create increasing cultural and intellectual wealth gaps among the rich and the poor, mirroring the growing wealth gaps in our economy (see Table 1 and Figure 3).

School funding allocations are not uniform throughout a district and are not shared by school-level. Schools are not poor; some of our communities and our responses

to them as a nation are poor. Despite the mounting challenges of public schools serving high-poverty populations, federal mandates such as the 2010 *No Child Left Behind Act,* applied punitive measures to student underperformance rather than adequately supportive ones. Contextually, the solutions to address the challenges faced by American public schools have misplaced attention away from the root of the problem. The tensions in education in America are not in policies and practices as they genuinely are attempting to promote high academic outcomes, but rather the information and the prioritization of information used to inform policies and practices. Social access and resource barriers have been explored in an attempt to equalize outcome variations among ethnic groups. The original cause of these disparate outcomes is being overlooked, which is the absence of explicitly and equalizing economic and political dating back from the original sociopolitical development of the country.

The State of Michigan

This study focuses on the state of Michigan primarily because of the state of Michigan's public school system. In Michigan, school of choice has systematically disenfranchised families that cannot afford the extra cost (e.g., time and money) around sending their children to better schools outside of their neighborhoods. Michigan is an exemplar state for more than just its charter school reforms. Michigan houses the largest concentration of African Americans living in a city of 100,000 or more people (i.e., Detroit) with 83% of its residents being Black (U.S. Census, 2010). At present, Detroit Public Schools are the lowest performing schools in the country in cities with higher than 500,000 residents; 93% of students are not proficient in reading and 96% are not proficient in math (NCES, 2015). When considering and developing reform for urban

schools across the country, finding solutions that effectively address the lowest performing districts in the country could help to inform and reform for all other districts with similar chronic underachievement. School improvement can be better understood when looked at in a districts experiencing chronic underachievement, such as Detroit, due to the magnitude of its under-performance. Investigating the challenges faced by such a district allows for a foundation for deep exploration of adequate educational reform moving forward and allows for a critical understanding of the intersectionalities of class, race, power, and poverty.

The state of Michigan has had an active role, historically, in the shaping of financial legislation throughout American public schools (Kenyon, 2007). In the 1970s, Michigan public schools made a mark on education funding policy in the case of the *Governor v. State Treasurer.* The Supreme court found the disproportionalities in regard to school funding to be unconstitutional; this ruling was overturned a year later. This back and forth legislation in this regard has yet to be reconciled since this the case was overturned; that is to say that mixed legislative initiatives have continued for the last four decades. Table 5 highlights several significant events in Michigan state public school legislation.

Table 5: 20th Century Michigan Public School Finance Legislation	
Date	**Significant Event**
1972	*Governor v. State Treasurer*: Michigan Supreme Court found the school funding system in violation of United States Constitution
1973	*Milliken v. Green*: Michigan Supreme Court vacated its 1972 decision
1972-1993	Michigan voters rejected a series of property tax and school finance restructuring ballot proposals
1993	Legislature eliminated property tax as a source of operating revenue for public school (partially reversed in 1994 with passage of Proposal A)
1994	Constitutional amendment to restructure school funding approved by voters (Proposal A).
2011	Michigan passed the Local Government and School District Accountability Act (Public Act 4) allowing the governor to appoint an emergency manager for district in financial crises.
2013	Michigan passed Public Act 96 which authorizes state official to dissolve local district deemed to be financially unviable.
2015	The state passed Public Acts 109-114 increasing local education agencies' reporting requirements and the state's power to intervene in budgeting of low-fund districts.

Source: (Arsen, DeLuca, Ni, & Bates, 2015; Kenyon, 2007)

After being known for having some of the highest inequitable allocations in per pupil spending across districts in the country, in 1993 the state of Michigan initiated one of the most dramatic financial restructuring in U.S. history (Kenyon, 2007); Michigan's heavy reliance on property taxes for school revenue prompted the extreme change (i.e., Proposal A) which included: an increase in the sales tax, a new state property tax for education, a lower required local property tax rate for funding schools, and an annual cap in property assessments. Prior to Proposal A, the property taxation exceeded the national average, but was comparable afterwards—the remaining property tax burden shifted from homeowners to non-homeowners (Kenyon, 2007). Arsen, DeLuca, Ni, and Bates (2015) make plain that 80% of the variance in districts financial conditions are due to changes at

the state level regarding education funding, the increase in school choice and charter school options, and the high-enrollment of special education students (p. 2). They go on to explain that state-level interventions have be enacted to address the needs of financially stressed district; three districts so far have been placed under emergency management all of which consisted of predominantly African American students. With the new state legislations, Michigan has become a state with a "highly centralized school finance system in which the state sets per pupil funding levels for each district, and most operating revenues follow students when they move among district or charter schools (Arsen et al., 2015, p. 4). The new legislation also provides emergency management official to shape and reshape educational programs. In totality, these provisions limit school districts' ability to raising additional tax revenues while simultaneous diminishing the power of local citizens and educators. This study intends to inform the conversation around Michigan state education reform while helping to better explain the impact of per pupil spending on instruction on the academic outcomes for students.

Summary

With intentional and active change in policy, many of the effects of past American legislation can be corrected; the high academic outcomes that we strive to achieve with all children are possible. This chapter reviewed the literature that helped to inform the research questions for this study that examine money's impact on equity throughout America's sociopolitical history. This chapter included an overview of American economic and educational landscape for the past few centuries in context of race and race relations to help contextualize the research questions with regards to poverty, access, and academic outcomes. The literature reviewed primarily explored the

educational differences experienced by ethnic minorities, namely Blacks/African Americans, in comparison to their White counterparts with references to the impacts of the sociopolitical landscape. This chapter concluded with a summary on the historical significance of Michigan state's education finance legislation helping to position this research study more specifically with the data collected. The following chapter explain the variables and research methodology and design used to explore the aforementioned research questions.

CHAPTER THREE: METHODOLOGY

This chapter presents an overview of the design purpose and rationale, a review of the research procedures, data samples collected, and statistical design method and models used to investigate the research questions. This study used six multiple regression models to investigate the association between per pupil expenditures on instructional services and academic outcomes on the M-STEP standardized test for Michigan State public schools. The percent of student proficient in a district served as the dependent variable; five predictor variables, or independent variables were used in each model (i.e., PPE instruction, city, suburban, student/teacher ratio, and % of White students). The hypothesis of the study is detailed in the following sections and was sustained in each model: *per pupil spending on instruction was statistically significant to the percent of students proficient in a district*. The secondary purpose of this study is to provide recommendations for researchers and policymakers regarding the equitable education of children living in poverty throughout the state of Michigan.

Overview of Purpose and Rationale

At present, the socioeconomic status of children of color living in poverty is disproportionately high in relation to children's percentage of the United States Population (U.S. Census, 2013). School funding revenue is sufficiently dependent upon local property tax, and, either directly or indirectly, communities with low median household incomes are positioned to have consistently underfunded schools. This study seeks to investigate the strength of the relationship between funding and academic outcomes in public school districts across the state of Michigan. This chapter provides the specifics of the research study and how it was conducted: (a) the purpose and rationale,

(b) research questions, (c) sample descriptions, (d) research method and design, (e) and the data collection and analysis protocols.

A quantitative analysis was selected to investigate the research questions; the data gathered is large, all numeric, and quantifiable and, thus, a quantitative research approach is the most appropriate. It is necessary to note that quantitative research methods take "the philosophical belief or assumption that we inhabit a relatively stable, uniform, and coherent world that we can measure, understand, and generalize about" (Gay, Mills, & Airasian, 2012, p.7). That is to say, quantitative research takes the automatic assumption that phenomena can be explored through measured variables which are taken to be relatively stable and consistent. Gay, Mills, and Airasian (2012) explain that quantitative research methods help to describe, explain, predict, or control from a particularly unique phenomenon given its ability to observe and manipulate variables. This method is most appropriate for this study as detailed by its questions and the sample data used for analysis.

Research Questions

The following research questions are the foundation to this study:

1. To what extent are per pupil expenditures on instructional services associated with academic outcomes on M-STEP 5th, 8th, and 11th grade English Language Arts proficiency?
2. To what extent are per pupil expenditures on instructional services associated with academic outcomes on M-STEP 5th, 8th, and 11th grade math proficiency?
3. Is there an association between race, school district, per pupil expenditures on instructional services, and M-STEP academic outcomes?

The hypothesis tested for this study: *per pupil expenditures on instructional services will be associated with M-STEP test proficiency rates.* The null hypothesis is: *there is no correlation or association between the variables.*

Sample

According to the Michigan Department of Education (2017), Michigan operated 900 total districts to include: 540 Local Educational Authorities (LEA) (i.e., regular public schools), 299 Public School Academies (i.e., Charters schools), and one Educational Achievement Authority (EAA) enrolling over 1.5 million students in the Fall of 2016. The 900 districts are separated into 56 larger intermediate districts (ISD). For this study, I only surveyed data from the LEAs, or regular school districts. A regular district is defined as a "locally governed agency responsible for providing free public elementary or secondary education" (NCES, 2017). For this study, that included 2,996 schools across 540 public school districts. The student enrollment is split almost evenly between females (743,232) and males (789,103). During the 2015-2016 school year, 67% of students were White, 18% were Black, 7% were Hispanic, and 3% Asian (Mack, 2017). Of the enrolled third graders, 46% are currently proficient in reading and 31.6% scored proficient in both math and reading; 28.8% of students were proficient in all M-STEP subjects tested. The four-year graduation rate is 79.7% and the four year dropout rate is 8.9% (Michigan Department of Education, 2017). The Michigan Department of Education (2017) also reported that 73.5% of eligible K-12 students receive Free/Reduced breakfast and lunch.

Methods and Research Design

This study uses a multiple regression model to investigate the statistical

association between the outcomes and predictor variables. The predictor variables are: race (categorical), grade level (categorical), school district size (numeric), district locale type (categorical), and PPE (numeric); these observations are gathered for NCES (NCES, 2016). The outcome variable is academic outcomes (numeric) as measured by the 2014-2015 Michigan Student Test on Educational Progress (M-STEP) and was gathered from the Michigan Department of Education (Michigan Department of Education, 2015). The model will evaluate the effect sizes, correlation coefficients, and significance of each model tested.

Phase I: Data Source and Collection

To investigate the relationship between per pupil expenditures (PPE) on instructional services and academic outcomes, this study uses a secondary data source gathered by the Michigan Department of Education and the National Center of Education Statistics (NCES). Data was collected for information from every district in the state for 5th, 8th, and 11th grade Mathematics and English Language Arts (ELA) M-STEP scores from the Michigan Department of Education. The M-STEP test is a standardized test given statewide for selected grades throughout K-12. I chose grades 5, 8, and 11 as they represent one grade from each of traditional American education levels (i.e., primary, middle, and secondary). The scores were reported on an excel sheet through the Michigan Department of Education website. The data is disaggregated by district, race, location type, and mean M-STEP scores, among other attributes. The per pupil expenditure on instruction was obtained by district name from the National Center for Education Statistics. All the data was gathered from publicly-accessible secondary data sources. An Institutional Review Board (IRB) approval was not needed.

The following, Table 6, outlines the variables and variable characteristics obtained from each dataset. The M-STEP test scores are from the 2015-2016 spring scores and the NCES per pupil expenditures on instruction figures were taken from the 2013-2014 fiscal year. The data was combined from the two sites by state district ID number and then redistributed onto three sheets desegregated by grade level (i.e., 5, 8, and 11).

Table 6: Research Variables and Characteristics

M-STEP		**NCES**	
Demographic Group (All students = 0; Black = 1; White = 2; Hispanic = 3; Economically Disadvantaged = 4)	independent variable; categorical	PPE instruction	independent variable; numeric
Locale type	independent variable; categorical		
Grade level (5, 8, 11)	independent variable; categorical		
Subject (Mathematics or ELA)	independent variable; categorical		
Student	independent variable; numeric		
M-STEP Percent Proficient	dependent variable; numeric		

Phase II: Data Procedures

The data collected were entered into both the Statistical Package for Social Sciences (SPSS) and *R* Studio integrated statistical software. A multiple linear regression design was used because the study seeks to find the effect size, or *beta,* correlation

coefficients, and statistical significance of two or more predictors on a continuous dependent variable (Hahs-Vaughn, 2017, p.58). This model was the best to investigate the research questions because the data points include multiple independent predictor variables used from each school district to predict the dependent variable. In order to account for these multiple predictors, a multivariate model is necessary.

Phase III: Data Analysis

A multiple linear regression requires that assumptions about the data be tested and sustained. The datasets, after combining demographic groups, contained 540 initial observations (i.e., one per school district). After collecting the data, it was screened for outliers and the need for parameters. The parameters and treatment of outliers and missing data are described more in Chapter Four. The datasets were also tested so that several assumptions were met: multicollinearity, normality, and homoscedasticity and homogeneity. Multicollinearity is the assumption that one predictor variable in a multiple regression model can be linearly predicted from the others to a substantial degree — testing that all the predictor variables are indeed independent of one another with a Pearson correlation < .5. Normality and homogeneity are evaluated through plots to determine if more of the data points fall to one side of the mean compared to the other. In order to test for linear regression, the data must initially be distributed "normally" or as close to an evenly symmetric bell curve on a plotted graph as possible. Homoscedasticity is the assumption that the variance around the regression line is the same for all values of the predictor variable (X).

Limitations and Delimitations of this Study

The limitations of this study consist of factors that this study is not able to account

for given due to the limits of the model. This study is limited to the geographic region that it investigates (i.e., Michigan) and, thus, the generalizability of the results. While the sample size is large with over 500 public school districts, the findings can only be generalized to the state of Michigan as cost-of-living factors were not controlled. A nationally representative study would have sampling populations for each state along with standardizing for variability in test scores and expenditures. Also, it must be noted that a lag effect is present as funding and year outputs are not directly associated as financial investments take time to impact student achievement.

The delimitations of this study (i.e., the topics or variables intentionally left out by the researcher) include, but are not limited to: parents' educational attainment, socioeconomic status of the child's family, child's past academic record, teacher salaries, and teacher qualifications. Most of these delimitations are due to the district level analysis of the data as well as the time limitations and restrictions of the study.

Summary

This chapter explained the research questions, design, and model that will be used to analyze the research questions of this study. The research questions are listed in this chapter as well. This section explained and supported this study's use of a multiple linear regression model to answer the guiding research questions. Additionally, this chapter provided an explanation of the purpose and rationale used to formulate the theoretical perspective around the research questions; it provided a detailed description of the data sample from the State of Michigan and the Department of Education's NCES, explained the limitations and delimitations, and concluded with an overview of the research

protocol to be used during data screening and analysis. The following chapter explains the results of the study procedures described throughout this chapter.

CHAPTER FOUR: FINDINGS

The purpose of this study is to examine the relationship between per pupil spending on instruction and academic outcomes in the state of Michigan M-STEP English Language Arts and Mathematic test. This chapter explains the statistical findings resulting from the multiple linear models outlined in Chapter Three. The *Statistical Package for Social Science* (SPSSS) software was used to analyze the data; six multiple linear regression models were run to analyze the research questions. First, this chapter provides an overview of the three research questions used to guide this study; then the descriptive statistics are explained for the variables obtained from the Michigan Department of Education and the National Center for Education Statistics for the 2014-2015 school year; third, the linear models and corresponding coefficients are described in thorough detail; lastly, this chapter concludes with an analysis of the findings and statistical outputs of each model and how the findings apply to the research questions. After reviewing the data, a supplementary question was added to the analysis.

Research Questions

1. To what extent are per pupil expenditures on instructional services associated with academic outcomes on M-STEP 5^{th}, 8^{th}, and 11^{th} grade English Language Arts proficiency?
2. To what extent are per pupil expenditures on instructional services associated with academic outcomes on M-STEP 5^{th}, 8^{th}, and 11^{th} grade math proficiency?
3. Is there an association between race, school district, per pupil expenditures on instructional services, and M-STEP academic outcomes?

Data Screening and Assumptions

Before conducting the linear models to test relationships between predictor variables (IV) and explanatory variables (DV), the data was screened for accuracy, missing data, outliers, linearity, multicollinearity, and homogeneity. All of the variables were tested for skewness and kurtosis through analysis of histograms, scatterplots, and statistical outputs. This study utilizes a multivariate model therefore imputing missing data is not required (Buchanan, 2015); missing or deleted observations are reported, but not imputed. Homogeneity of percent proficient/advanced and per pupil spending was analyzed through a scatterplot and the data plots were adequately distributed. Tables 7 and 8 are provided to illustrating the descriptive statistics for the data set. The next section explains the testing and treatment of assumptions by variable and as well as provides descriptive statistics for each.

Table 7: M-STEP English Language Arts Descriptive Statistics

	5th Grade		8th Grade		11th Grade	
	Mean	SD	Mean	SD	Mean	SD
StudentTeacherRatio	17.83	3.00	17.86	2.90	17.86	2.90
PPE Instruction	6244.19	1889.34	6244.26	1891.09	6244.26	1891.09
Proportion of all proficient	0.47	0.15	0.46	0.14	0.48	0.14
City	0.06	0.24	0.06	0.24	0.08	0.24
Suburban	0.27	0.45	0.27	0.45	0.27	0.45
White Proportion	0.82	0.20	0.82	0.20	0.83	0.19
Economically Disadvantaged	0.54	0.20	0.50	0.20	0.42	0.19

**Dependent variable: % of all proficient/advanced*

Table 8: M-STEP Math Descriptive Statistics

	5th Grade		8th Grade		11th Grade	
	Mean	SD	Mean	SD	Mean	SD
StudentTeacherRatio	17.87	2.89	17.86	2.90	17.86	2.90
PPE Instruction	6240.37	1880.36	6244.26	1891.09	6244.26	1891.09
Proportion of all proficient	0.31	0.15	0.46	0.14	0.25	0.13
City	0.06	0.24	0.06	0.24	0.06	0.24
Suburban	0.27	0.44	0.27	0.45	0.27	0.45
White Proportion	0.82	0.20	0.82	0.20	0.83	0.19
Economically Disadvantaged	0.54	0.21	0.50	0.20	0.42	0.19

**Dependent variable: % of all proficient/advanced*

Descriptive Statistics

School districts. The State of Michigan has 540 regular school districts, and during Fall 2015 enrolled over 1.5 million children in nearly 3,000 schools (N=2,996). The State District IDs were used as participant ID numbers and used for descriptive purposes only. They were uniform across the datasets (i.e., Michigan Department of Education and the National Center for Education Statistics) and were used to merge the data into one sortable file. Data was gathered for each district for English Language Arts and Mathematics for 5th, 8th, and 11th grades for Black, White, and Hispanic children. Several districts had racial compositions for several groups that were less than 10 so data for those groups were not included in this study.

Per pupil expenditure on instruction. The per pupil spending on instruction (PPE) was obtained from the National Center for Education Statistics. There were 540 unique values provided, one for each school district in the state. The original range for PPE on instruction was $4,389 to $26,250. The median was $5,836 and the mean was approximately $6,000. Data screening was conducted by analyzing the mean, median,

and histogram plots of the variables; all collected observation were retained after the preliminary analysis. Tables 7 and 8 outline the mean and standard deviations for the M-STEP test based on grade level and test type.

Percent proficient and advanced. Academic proficiency was gathered for each grade level for both mathematics and English Language Arts from NCES. The average percent of students who scored proficient or advanced on the M-STEP English Language Arts and mathematics test were combined (respectively) and reported in Table 9 for each demographic group evaluated. The range of percent of students proficient/advanced was 5% - 89%. The median was 36%, the mean was 37%, and the maximum was 89%. Percent proficient was tested for multicollinearity with per pupil spending on instruction and resulted in a Pearson correlation of -.04 (which is less than <.05), thus, not violating the multicollinearity assumption; the two variables are independent enough to function alone. The Michigan Department of Education (2016), provided the following definitions for proficient and advanced for grades 3-8 as: *proficient* - the student's performance indicates understanding and application of key grade level content standards defined for Michigan students. The student needs continued support to maintain and improve proficiency; *advanced* - The student's performance exceeds grade level content standards and indicates substantial understanding and application of key concepts defined for Michigan students. The student needs support to continue to excel. The 11th grade definitions are as follows: *proficient* - The student's performance indicates understanding and application of key high school content standards defined for Michigan students. The student needs continued support to maintain and improve proficiency and to be career and college ready; *advanced* - The student's performance exceeds the high

school content standards and indicates substantial understanding and application of key concepts defined for Michigan students. The student needs support to continue to excel and to be career and college ready.

Table 9: Combined Mean of Percent Proficient/Advanced for ELA and Math Test by Demographic Group

All	Black/African American	White	Hispanic	Economically Disadvantaged
36%	22%	38%	30%	29%

Demographic groups. The demographic groups used to explore the research questions include: Black/African American students (coded = 1), White students (coded = 2), Hispanic students (coded = 3), all students (coded = 0), and economically disadvantaged students (i.e., students eligible to receive free and reduced lunch)(coded = 4). The descriptive statistics below describe the groups separately; however, this study only tested the racial demographic groups of White and non-White based on the proportion of the district that what White (i.e., whtprop = number of White students / number of all students). Black/African American, White, and Hispanic student scores were gathered separately onto one data frame while *all* and *economically disadvantaged* groups were collected together on a different data sheet. The following is a breakdown of the number of scores reported for both ELA and math for each racial group that was over 10; 307 total scores were reported for Black/African Americans in both ELA and math, 2,140 White student scores, and 444 Hispanic scores. The percent of students proficient/advanced by demographic group is reported in Table 9. Of all students tested, 36% of them were proficient in both subjects; 22% of Black students tested, 38% of

White students, 30% of Hispanic students, and 29% of economically disadvantaged students were proficient on both test.

Grade. The percent of students who scored proficient or advanced on the M-STEP ELA and mathematics test were gathered for each district for grades 5, 8, and 11. The total count for each grade level is as follows: 5th grade (978), 8th grade (975), and 11th grade (938). Multicollineratity was not an issue for this dataset; proficiency was not statistically correlated with grade level. Grade is a three-leveled categorical variable as was accounted by using six models to compare the data. The percent of students proficient/advanced by grade level is reported in Table 10. Of the students tested at each level, 36% of 5th graders were proficient in both subjects, 34% of 8th graders, and 34% of 11th graders.

Table 10: Combined-Mean of Percent Proficient/Advanced for ELA and Math Test by Grade Level

5th	8th	11th
36%	34%	34%

Subject. English Language Arts and mathematics proficiency ratings are reported for each public school district by grade level and demographic group. There are 1,513 English Language Arts proficiency observations reported and 1,378 mathematics observations reported. Subject is a two-factor categorical variable and accounted for in the six models. The percent of students proficient/advanced by subject is reported in Table 11. Of all students tested, 42% scored proficient or advanced on the ELA assessment and 27% score proficient on the math assessment.

Table 11: Combined-Mean of Percent Proficient/Advanced for ELA and Math Test by Subject	
English Language Arts	Mathematics
42%	27%

Locale and locale code. Locale and locale code were designated and provided by the National Center for Education Statistics. Table 12 details a description of each code. Locale and locale code were used as a coded dummy variables. The city and suburban classification were evaluated against the rural/town classification and was added as a control to the models. The locale type was coded into dummy variables for city (i.e., 0 = other and 1 = city), suburban (i.e., other = 0, suburban = 1), and rural/town classifications as independent predictors. The descriptive statistics run on the initial data set of 540 districts includes: 34 city districts, 358 rural/town districts, and 148 suburban districts.

Student/teacher ratio. This variable was used to help account for district size. The assumption is that the proportion of students to teachers can account for the variance in the size of district based on this proportion given that larger schools will have more students and, consequently, more teachers. The range for student/teacher ratio is 2.5 to 24.5 with an average proportion of approximately18.

Table 12: NCES Locale Codes and Descriptions for All Michigan State Schools (Public and Charter)

Locale and Locale Code	Locale Description	Number Reported
City – Large (11)	Territory inside an Urbanized Area and inside a Principal City with population of 250,000 or more.	0
City – Midsize (12)	Territory inside an Urbanized Area and inside a Principal City with population less than 250,000 and greater than or equal to 100,000.	31
City – Small (13)	Territory inside an Urbanized Area and inside a Principal City with population less than 100,000.	149
Suburban – Large (21)	Territory outside a Principal City and inside an Urbanized Area with population of 250,000 or more.	515
Suburban – Midsize (22)	Territory outside a Principal City and inside an Urbanized Area with population less than 250,000 and greater than or equal to 100,000.	136
Suburban – Small (23)	Territory outside a Principal City and inside an Urbanized Area with population less than 100,000.	81
Town – Fringe (31)	Territory inside an Urban Cluster that is less than or equal to 10 miles from an Urbanized Area.	228
Town – Distant (32)	Territory inside an Urban Cluster that is more than 10 miles and less than or equal to 35 miles from an Urbanized Area.	254
Town – Remote (33)	Territory inside an Urban Cluster that is more than 35 miles from an Urbanized Area.	136
Rural – Fringe (41)	Census-defined rural territory that is less than or equal to 5 miles from an Urbanized Area, as well as rural territory that is less than or equal to 2.5 miles from an Urban Cluster.	350
Rural – Distant (42)	Census-defined rural territory that is more than 5 miles but less than or equal to 25 miles from an Urbanized Area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an Urban Cluster.	727
Rural – Remote (43)	Census-defined rural territory that is more than 25 miles from an Urbanized Area and also more than 10 miles from an Urban Cluster.	284

NCES (2015)

Research Design and Models

Multiple Linear Regression Models

Six multiple regression models were run to test the research questions. The dependent variable for all six models was the percent of students proficient or advanced within districts. The five predictor variables were (a) per pupil spending on instruction, (b) student/teacher ratio, (c) city, (d) locale, and (e) proportion of White students in the district. All six models were identical in their predictor variables; the only differences were in the actually datasets which varied by subject and grade level. To answer the research questions of this study, the unstandardized regression coefficients (*B*), the standardized regression coefficients (β, or beta), *p*-values, and partial correlation coefficients were evaluated to determine the impact of each variable. The variables with *p*-values <.05 are considered statistically significant. Despite the presence of skewness for student/teacher ratio and per pupil spending on instruction, all models' variance in inflations', of VIF, were within an acceptable range; therefore, all observable data points were sustained. No outliers were eliminated as the impact of their inclusion presented limited to no variance in statistical outputs. The R^2 and the adjusted R^2 are reported for each model explaining the amount of variance in district's percent of students proficient/advanced; the R^2 reports the amount of variance that is not due to chance. The models illustrate that, across subjects and grade levels, 14-20% of the variance between districts in percent of students who score proficient or advanced can be accounted for by the predictor variables; all predictor variables showed to be statistically significant in each model except the student/teacher ratio predictor for the 5th grade Mathematics test (*p*

= .05) (see tables 13 and 14). The hypothesis was sustained; per pupil spending on instruction showed statistical significant in each model.

Findings and Analysis

Research questions one. Research questions one is as follows: (1) to what extent are per pupil expenditures on instructional services associated with academic outcomes on M-STEP 5th, 8th, and 11th grade English Language Arts proficiency? Table 13 reports the correlation coefficients for the predictor variables for White and non-White students on the 5th, 8th, and 11th grade English Language Arts M-STEP test. The results of this model showed a statistically significant differences on student proficient scores given the amount on spending on instruction, student/teacher ratio, city or suburban district classifications, and racial composition of the district. The correlation coefficients among the variables are reported in Table 13. The variance accounted for in 5th grade ELA model (R^2) equaled .19 (adjusted R^2 = .18), which was significantly different from zero (F=22.719, p<.00); The variance accounted for in 8th grade ELA model (R^2) equaled .21 (adjusted R^2 = .20), which was significantly different from zero (F=26.408, p<.00); The variance accounted for in 11th grade ELA model (R^2) equaled .14 (adjusted R^2 = .13), which was significantly different from zero (F=15.104, p<.00).

All five predictor variables, or independent variables, contributed significantly to the prediction of district percent of proficiency. The racial composition of the district (i.e., % of White students) had the largest positive standardized betas and partial correlation coefficients in each model; this is to say, the racial composition of a district contributed to the most to the variance in the percent of students who scored proficient. PPE on instruction, student/teacher ratio, and city-suburban district classification had

similar positive standardized betas and partial correlation coefficients; these variables all had a similar impact on the dependent variables across the models with a slight variance between grade levels. A suburban-district classification had the second largest beta and partial correlation coefficients for 5th and 8th grade (.22 and .27, respectively) after racial composition. PPE on instruction was the second largest contributor of variance for 11th grade after racial composition. The three models illustrated on Table 13 answers research question one by outlining the impact and accountability of variance of spending on instruction on the 5th, 8th, and 11th grade ELA M-STEP test. Spending accounts for 14% of the R^2 for the 5th grade model, 16% of the R^2 for 8th grade model, and 19% of the R^2 for 11th grade model; according to the model, spending on instruction accounts for about 16% of the variance in proficient/advanced percentages. Across the six models, all variable showed to have a positive relationship to outcomes on proficiency scores.

Table 13: M-STEP English Language Arts Correlation Coefficients for White and Non-White Populations

	5th Grade R^2 = .187; adjusted R^2 = .178				8th Grade R^2= .211; adjusted R^2 = .203				11th Grade R^2 = .135; adjusted R^2 = .126			
	B	β	*p* value	partial	*B*	β	*p* value	partial	*B*	β	*p* value	partial
PPE Instruction	2.95E-05	0.17	0.00	0.14	3.29 E-05	0.19	0.00	0.16	4.31E-05	0.24	0.00	0.19
StudentTeacher Ratio	0.01	0.14	0.01	0.12	0.01	0.12	0.02	0.10	0.01	0.18	0.00	0.15
City	0.08	0.13	0.01	0.12	0.10	0.17	0.00	0.16	0.07	0.12	0.02	0.10
Suburban	0.09	0.28	0.00	0.27	0.07	0.23	0.00	0.22	0.03	0.10	0.04	0.09
White Proportion	0.33	0.44	0.00	0.38	0.38	0.53	0.00	0.44	0.29	0.39	0.00	0.33

**Dependent variable: % of all proficient/advanced*

Table 14: M-STEP Math Correlation Coefficients for White and Non-White Populations

	5th Grade R^2 = .152; adjusted R^2 = .144				8th Grade R^2 = .145; adjusted R^2 = .136				11th Grade R^2 = .155; adjusted R^2 = .147			
	B	β	*p* value	partial	*B*	β	*p* value	partial	*B*	β	*p* value	partial
PPE Instruction	2.88E-05	0.16	0.00	0.13	2.78E-05	0.15	0.01	0.13	3.21E-05	0.19	0.00	0.16
StudentTeacher Ratio	0.01	0.11	0.05	0.09	0.01	0.09	0.08	0.08	0.01	0.15	0.00	0.13
City	0.08	0.14	0.00	0.13	0.10	0.17	0.00	0.15	0.09	0.17	0.00	0.15
Suburban	0.08	0.25	0.00	0.23	0.07	0.22	0.00	0.21	0.06	0.21	0.00	0.19
White Proportion	0.29	0.41	0.00	0.35	0.33	0.44	0.00	0.36	0.29	0.43	0.00	0.36

**Dependent variable: % of all proficient/advanced*

Research question two. Research question two is as follows: to what extent are per pupil expenditures on instructional services associated with academic outcomes on M-STEP 5th, 8th, and 11th grade math proficiency? Table 14 reports the correlation coefficients for the predictor variables for White and non-White students on the 5th, 8th, and 11th grade mathematics M-STEP test. The results of this model showed a statistically significant differences in student proficient scores given the amount on spending on instruction, student/teacher ratio, city or suburban district classifications, and racial composition of the district. The correlation coefficients among the variables are reported in Table 14. The variance accounted for in 5th grade mathematics model (R^2) equaled .15 (adjusted R^2 = .14), which was significantly different from zero (F=17.964, p<.00); The variance accounted for in 8th grade mathematics model (R^2) equaled .15 (adjusted R^2 = .14), which was significantly different from zero (F=16.723, p<.00); The variance accounted for in 11th grade mathematics model (R^2) equaled .16 (adjusted R^2 = .15), which was significantly different from zero (F=17.849, p<.00**).** Four of the five predictor variables contributed significantly to the prediction of percent of district proficient across all grade levels. Student/teacher ratio was not significant for 5th and 8th grade (p = .05, and p = .08, respectively). All five variables were significant for the 11th grade math model.

Similarly, to English Language Arts, the racial composition of the district (i.e., % of White students) had the largest positive standardized betas and partial correlation coefficients in each model; the percent of White versus non-White students impacted the scores most significantly given the model. PPE on instruction, student/teacher ratio, and city-suburban district classification had similar positive standardized betas and partial

correlation coefficients. A suburban-district classification had the second largest beta and partial correlation coefficients for 5th, 8th, and 11th grade (.25, .22, and .21, respectively) with a positive correlation suggesting that attending a school within a suburban district to be most advantageous toward higher proficiency scores. The three models illustrated on Table 14 answers research question one by outlining the accountability of variance of spending on instruction on the 5th, 8th, and 11th grade mathematics M-STEP test. Spending accounts for 13% of the R^2 for the 5th grade model, 13% of the R^2 for 8th grade model, and 16% of the R^2 for 11th grade model.

Research question three. Research question three is as follows: is there an association between race, school district, per pupil expenditures on instructional services, and M-STEP academic outcomes? Tables 13 and 14 report the unstandardized, standardized, *p*-value, and partial correlation coefficients for the racial composition variable (i.e., White Proportion) in contexts to the ELA and mathematics scores. This variable was included and obtained by dividing the total number of White students tested by the total number of all students tested. The proportion of White students' variable had the largest beta and partial correlation coefficient for every model. The univariate statistics reported in the appendices suggests that White student composition has a positive correlation with academic proficiency; when the composition of White students increased, so did overall academic proficiency. The preliminary analysis of the datasets also suggests that socioeconomic status of students may be related to race which may help to further explain the relationship of White student composition and academic proficiency; however, further analysis is necessary to better understand the impact of race on outcomes. All of the six models' coefficients can be used to answer the third research

question. The findings suggest that racial composition does impact proficiency outcomes (i.e., the proportion of the school that is made up of White or non-White students). Notably, the univariate statistics suggest that as the proportion of Whites students proportion increases, per pupil spending on instruction decreases. In addition, attending a school within an urban district also accounts for higher spending on instruction and also a lower proportion of White students. More research and analysis is necessary to further understand the implication of these findings. It is also necessary to explore the impact of socioeconomic status as it had shown to be significant in this study when doing the preliminary analysis.

Further analysis. The three original research questions all showed per pupil spending on instruction as impactful on the percent of district proficient in a district on the M-STEP assessments. Nevertheless, PPE instruction's very small effect size encourages further analysis. The Michigan Department of Education also provided information for students who are classified as *economically disadvantaged* based on the students' eligibility to receive free and/or reduced lunch and breakfast services. The descriptive statistics show that the average for district's composition of White students is 82% or higher and the average percent of economically disadvantaged students in a district is roughly 50%. An exploratory analysis of the data was added to this research design to further understand the findings of the first three question. This analysis sought to explore where there is there an association between students' classification as "economically disadvantaged" and academic outcomes on M-STEP English Language Arts and Mathematics test for 5^{th}, 8^{th}, and 11^{th} grade. A simple ANOVA was run to determine the relationship between the proportion of White students in a district and the

proportion of economically disadvantaged students to check the assumption of multicollinearity. The output revealed that for every one percent increase in the proportion of economically disadvantaged students in a district, there is an .39 decrease in the proportion of White students.

Six exploratory models were run on the economically disadvantaged datasets similar to the models run for the White and non-White population data; however, the proportion of White and non-White students was replaced with the economically-disadvantaged proportion variable - all other variables in the datasets remained identical from the prior datasets by grade level and subject (i.e., PPE on instruction, student/teacher ratio, and district type). All necessary assumptions were evaluated and no observations were removed. Tables 15 reports the correlation coefficients for the predictor variables for economically disadvantages students on the 5th, 8th, and 11th grade English Language Arts M-STEP test. The results of these models showed statistical significant differences on student proficient scores given the amount on spending on instruction, student/teacher ratio, city or suburban district classifications, and racial composition of the district. The variance accounted for in 5th grade ELA model (R^2) equaled .51 (adjusted R^2 = .51), which was significantly different from zero (F=103.75, p<.00); the variance accounted for in 8th grade ELA model (R^2) equaled .52 (adjusted R^2 = .51), which was significantly different from zero (F=104.82, p<.00); the variance accounted for in 11th grade ELA model (R^2) equaled .35 (adjusted R^2 = .34), which was significantly different from zero (F=50.95, p<.00).

Tables 16 reports the correlation coefficients for the predictor variables for economically disadvantages students on the 5th, 8th, and 11th grade mathematic M-STEP

test. The variance accounted for in 5th grade mathematics model (R^2) equaled .41 (adjusted R^2 = .41), which was significantly different from zero (F=69.64, p<.00); The variance accounted for in 8th grade mathematics model (R^2) equaled .52 (adjusted R^2 = .51), which was significantly different from zero (F=104.82, p<.00); The variance accounted for in 11th grade mathematics model (R^2) equaled .43 (adjusted R^2 = .42), which was significantly different from zero (F=70.78, p<.00).

For the three English language arts models run, of the five predictor variables, the per pupil spending and instruction and percent of students economically disadvantaged in the district were the only significant variables for both 5th and 11th grade; only spending on instruction and demographic status was significant for these models. Per pupil spending was not a significant predictor of percent proficient/advanced at the 8th grade levels – only demographic status (i.e., economically disadvantaged). The findings were consistent for the three mathematics models; only per pupil spending on instruction and percent of economically disadvantaged students were significant the 5th and 11th grade assessments and only economically disadvantaged was significant at the 8th grade level.

Table 15: M-STEP English Language Arts Correlation Coefficients for Economically-Disadvantaged Populations

	5th Grade				**8th Grade**				**11th Grade**			
	R^2 squared =.514; adjusted R^2 = .509				*R^2 squared =.515; adjusted R^2 = .510*				*R^2 squared =.349 ; adjusted R^2 = .342*			
	B	β	*p* value	partial	*B*	β	*p* value	partial	*B*	β	*p* value	partial
PPE Instruction	1.57E-05	0.09	0.03	0.10	1.31E-05	0.08	0.06	0.09	2.87E-05	0.15	0.00	0.15
StudentTeacher Ratio	0.00	0.02	0.65	0.02	0.00	0.01	0.72	0.02	0.01	0.07	0.11	0.07
City	-0.03	-0.05	0.16	-0.06	-0.01	-0.02	0.61	-0.02	-0.03	-0.04	0.26	-0.05
Suburban	0.01	0.02	0.52	0.03	-0.02	-0.06	0.11	-0.07	-0.03	-0.10	0.01	-0.11
% Economically Disadvantaged	-0.52	-0.70	0.00	-0.70	-0.52	-0.72	0.00	-0.71	-0.44	-0.58	0.00	-0.58

** Dependent variable: % of all proficient/advanced*

Table 16: M-STEP Math Correlation Coefficients for Economically-Disadvantaged Populations

	5th Grade				**8th Grade**				**11th Grade**			
	R^2= .413; adjusted R^2 = .407				*R^2 = .515; adjusted R^2 = .510*				*R^2= .427; adjusted R^2 = .421*			
	B	β	*p* value	partial	*B*	β	*p* value	partia l	*B*	β	*p* value	partial
PPE Instruction	1.62E-05	0.09	0.04	0.09	1.32E-05	0.08	0.06	0.09	1.92E-05	0.11	0.01	0.12
StudentTeacher Ratio	0.00	0.03	0.57	0.03	0.00	0.01	0.72	0.02	0.00	0.03	0.49	0.03
City	-0.004	-0.01	0.86	-0.01	-0.01	-0.02	0.61	-0.02	0.00	0.01	0.81	0.01
Suburban	0.00	0.01	0.89	0.01	-0.02	-0.06	0.12	-0.07	0.00	-0.02	0.70	-0.02
% Economically Disadvantaged	-0.45	-0.64	0.00	-0.63	-0.52	-0.72	0.00	-0.71	-0.44	-0.65	0.00	-0.65

** Dependent variable: % of all proficient/advanced*

Summary

The purpose of this study was to determine the association between per pupil spending on instruction and M-STEP outcomes in the State of Michigan. The statistical findings from the models report a significant relationship between spending on instruction and outcomes on 5th, 8th, and 11th grade ELA and mathematics test. However, while significant, per pupil spending was not impactful in a practical sense. The effect size on the model was less than .00002 for all of the models even when considering socioeconomic status; for even increase in dollars spent, the percent of the district proficient when up less than .00002. Subject, grade level, students/teacher ratio, district type, and racial composition all proved to be significant predictors of the percent of students in a district who scored proficient/advanced on the assessments. Racial composition of a district (i.e., percent of White versus non-White students) had the largest effect size on the models accounting for most of the variance in scores. Per pupil spending on instruction had the least amount of impact on the models. Students at every grade level performed higher on the ELA assessment than the mathematic test. Type of district (e.g., rural, urban, suburban) and spending on instruction only proved to be significant on proficiency when student/teacher ratio and racial composition of the district were accounted for and included in the models. These findings suggest that the combination of school district type, spending, school size, and racial composition of a district can all serve as predictors to students' proficiency scores. These models ranged from 14-20% in their accounting of variance.

A supplementary analysis of the data was also run to explore the impact of socioeconomic status on M-STEP outcomes. These findings of this exploratory analysis

suggest that models that account for the socioeconomic status of children account for nearly 50% of the variance in scores given the grade levels and subject areas tested. Chapter five revisits the conceptual framework for this study helping to being the context around the finds. It also provides a discussion of the outlined statistical finding based on the research questions as well as provides recommendations for policy makers and the education communities serving Michigan student populations.

CHAPTER FIVE: DISCUSSION, SUMMARY, AND RECOMMENDATIONS

This chapter focuses on the discussion of the data findings in context of the conceptual framework and research questions. The purpose of this study was to explore the association between M-STEP test proficiencies and per pupil spending on instruction. The hypothesis tested for this study was: per pupil expenditures on instructional services will be associated with M-STEP test proficiency rates. The hypothesis was sustained based on the outputs of the models. The following section discusses the statistical findings and their applicability to the three research questions in detail. This chapter begins with a discussion of the conceptual framework used to frame this study which includes principles from both critical theory and social dominance theory. Then, to best understand the findings from chapter four, the implications of each research question is discussed. Lastly, this chapter concludes with recommendations for both education stakeholders and policymakers, particularly those serving this studies population, and an outline of best practices for communities currently who also serve large populations of children living in poverty.

Discussion of Conceptual Framework

Critical theory and social dominance theory were used as the conceptual framework to investigate the research questions. Critical theory involves the scrupulous process of investigating human social behaviors with intentions of better understanding oppression and structural barriers for marginalized groups (Bohman, 2005; Corradetti, 2012). Critical theory is used to investigate the position of marginalized and oppressed populations which in this study includes school districts serving high populations of minorities and high populations of students living in poverty. In this context, critical

theory guided the literature review on the topic of wealth inequality in American history as well as the development of the research questions. Both the literature review and the research questions call into question race and oppressive structural systems in American society. The literature review offers a summary of the economic and social conditions of African Americans and impoverished populations in contexts of the education. The research questions seek to critically understand the impact of local school finance structures on academic achievement and to investigate the racialized outcomes of students in contexts of socioeconomics. Critical theory informs the guiding epistemology behind this study's review of past literature and the discussion of the results with a critical analysis at its foundation.

Social dominance theory suggests a deterministic view of societal that posits a social hierarchy as a necessity. In this study, social dominance theory is most evident in the overall premise of the literature review as well as in the understanding of implications the findings. In this study, the economic context of the education is most important as socioeconomic status has the largest impacting factor on student achievement.

The American capitalist system impacts education reform because of the structure of public school funding and the compulsory nature of K12 schooling for all American children. Education is also important to note in the conversation of economics as it impacts an individuals' opportunities for income stability and, often times, even social mobility. American capitalist is present in all sociopolitical systems in the country and directly impacts the growth and evolution of free quality public school for all children. Both theories, critical and social dominance theories, are relatively neo-Marxism and, thus, the notion of capitalism as an economic system is heavily present in both

philosophical foundations. If capitalism is to be critical understood, it can be characterized as relatively parental and naturally exploitative, as commonly referenced by Karl Marx and other seminal economic philosophers (Morrison, 2005). Capitalism economically embodies social dominance theory requiring a hierarchy of income and resource distribution. It then becomes necessary to explore whether capitalism is the most beneficial economic system for a society given that it has produced growing income and wealth disparities.

Given the finding of this study, it becomes necessary to offer recommendations for both education and public policy as we ultimately need them both to work together to satisfy the needs of America's children. The statistically findings of this study suggest that socioeconomics and per pupil spending on instruction were significant contributors to academic outcomes given the predictor variables. When socioeconomic status was not included in the model, the racial composition of the district as well as the other predictor variables accounted for more of the variance. With this understanding, future research should seek to explore the impact of social and political systems on race relations and education outcomes. The following sections apply of the notions of these two theories to this studies' research questions and findings.

Discussion of Research Questions

The research questions are as follows:

(1) To what extent are per pupil expenditures on instructional services associated with academic outcomes on M-STEP 5^{th}, 8^{th}, and 11^{th} grade English Language Arts proficiency?

(2) To what extent are per pupil expenditures on instructional services associated with academic outcomes on M-STEP 5th, 8th, and 11th grade math proficiency?

(3) Is there an association between race, school district, per pupil expenditures on instructional services, and M-STEP academic outcomes?

The findings from this study show that there does exist a positive relationship with per pupil spending on instruction and academic outcomes on M-STEP test. Three models were run to answer the first questions, one for each grade level, and the average account of variance was 17%. The findings suggest that scoring proficient on the M-STEP ELA is positively associated with per pupil spending on instruction, student/teacher ratio, suburban-dwelling, and a higher proportion of White students in the district. The models suggest that the variables used contribute to the education quality of a district in several ways: per pupil spending on instruction increases the quality of curriculum material used as well as supplements teacher salaries; a modest student/teacher ratio ensures small and more efficient class sizes; living in a suburban district proved to be advantageous to academic outcomes and is commonly associated with reduce crime rates, higher property values, and more affluent residents; a higher proportion of White students had a positive correlation on scores and suggests that an there is an increased benefit of being a White student cultural privileges consistent and persistent across generations.

The findings for the M-STEP mathematics assessments were similar to those for ELA. Three models were run to assess the findings at each grade level. The account of variance averaged at about 15%. Students in districts with a higher proportion of White students performed better on the M-STEP and proficiency was associated with a modest

student/teacher ratio and living in a suburban district. The proportion of White students in the district had the largest effect size on all the models, both ELA and mathematics; per pupil spending on instruction had the smallest effect size. The racial makeup of the surrounding communities determines the racial composition of a school; most of the predominantly White communities were in rural/town areas, then suburban areas with cities having the lowest proportions. Living in a city negatively impacted proficiency and, in most cases, spending on instruction increased with city-living compared to rural/town and spending.

An exploratory analysis of the demographic variable *economically disadvantaged* findings revealed that being classified in this demographic group has a negative correlation with academic outcomes in Michigan state public schools and proved to have more predictive power that racial composition. In contexts of these findings, the following recommendations seek to address the education and performance concerns of school districts who currently serve large populations of economically disadvantaged students. The first section of recommendations offers models of success and highlights strategic practices that can be implemented in school districts seeking to improve the academic outcomes of children living in poverty. The concluding section of recommendations offers Michigan state policymakers solutions to better balance wealth and income disparities across city and district lines. The hope with these recommendations is to offer a potential solution to holistically address the compounded issues faces academic success across the state of Michigan as well as to offer a critical lens to better explore the current state of both education and public policies.

Recommendations for Urban Policy and Communities in Poverty

Solutions and recommendations are outlined below to address the economic concerns of urban cities in Michigan with high-populations of residents living in poverty. Education is merely a byproduct of the resources available to a given community and schools are typically no better than the living conditions in which they operate. Because my research study yielded results that depicted socioeconomic status and race as a primary contributor to academic achievement, it is necessary that recommendations for solutions include the living conditions of children and their families as the sociopolitical landscape predicts much of the educational opportunities in a given city. Several studies, such as the *Coleman Report*, revealed relatively similar findings, but concluded family background as the major contributor; in this context, children's socioeconomic status is the models' largest predictor. This section will outlines potential policy and government considerations for the State of Michigan that may help in aiding impoverished communities establish economic sustainability and provide more funding for K12 instruction. The idea of city-county consolidations is introduced and explored through this section in terms the following benefits to financial-stressed urban communities. The topics of consolidation outlined include: municipal cost savings, increased efficiency, improved resource base, enhanced planning capacity, and increased accountability.

City-County Consolidations: A Brief Overview

City-county mergers are explicit and intentional consolidations of local political governments to achieve a desired community outcome or objective specifically for populations experiencing financial or resource stress. Cain (2009) explains a city-county consolidation as "merging separate governments into a single government with the hope

of eliminating the duplication of services, improving efficiency, and reducing costs" (p.1). Most often, consolidations occur when one particular local entity is in need of services or support that a nearby municipality may be able to provide either directly (e.g., the services) or indirectly (e.g., financial support). Cross-county and intra-governmental partnerships are not foreign to local or domestic governments in America; they are most obviously demonstrated during natural disasters that often call upon resources that even require collaborations across state jurisdictions (e.g., medical relief and disaster cleanup). (Vogel & Harrigan, 2007).

For example, in Southeast Michigan, two neighboring counties tell two vastly different story of Michigan education and economics. These populous Michigan counties are Wayne and Oakland. Wayne country houses the most residents in the state and the largest public school system with approximately 43,000 students, Detroit Public Schools (DPS), and Oakland county houses one of the richest districts, Bloomfield Hills schools (BH), with roughly 5,000 students. Historically, from 1900 to 1930, Detroit, Michigan was the fastest growing city in the world from the then economic boom of the newly emerging car industries (Sansone, 2012; Y.F., 2012). In 1910, Detroit was made up of approximately 99% White Americans (Gibson & Jung, 2005). Its illustrious character brought families with hopes of finding social and economic stability in factory industries from all over the country. By the turn of the century, Detroit's population was over 80% African American. By 2009, the city was still over 80% Black and housed over 50% of its children living in poverty and over 50% of its adults functionally illiterate (Y.F., 2012). Of the nearly 700,000 residents, 28% are under the age of 18 (U.S. Census, 2010). The United Way compared the cost of living to income by U.S. county and determined

that 67% of Detroit residents lived under the federal poverty line. After being titled the fastest growing city in the world in 1930, in 2013, less than a century later, *Forbes* magazine deemed Detroit the #1 most miserable city in America (Badenhausen, 2013). For decades, Detroit has claimed the title of one of the most dangerous cities in America often times taking the number one position (Fisher, 2015). Needless to say, the city has quite a lengthy history of demographic shifts and economic instability. Detroit's unique history includes "White flight" in the 1950's, the mass exodus of White residents to other counties, which led to the more advantageous conditions of nearby suburban cities.

Bloomfield Hills, MI, a major city of Detroit's neighboring county, is over 85% White, with a population of over 41,000 residents and 23% of them under the age of 18 (U.S. Census, 2010). Bloomfield Hills is situated in Oakland County which is the 2nd wealthiest county per capita of counties over one million in the United States, and in 2000, became the first county in Michigan with property wealth exceeding $100 billion; The county's over 53,000 businesses produce a combined annual payroll with a GDP higher than 19 states (i.e. $26.6 billion) (Oakland County Michigan, n.d.). In this instance, it is evident that the racial and economic compositions counter each other dramatically, which has greater social implications than just urban and suburban geographic environments. Urban cities and schools are proven to have less financial support than necessary to ensure equitable conditions in schools in comparison to their suburban counterparts due to numerous financial and structure limitations (Kozol, 2005; Darling-Hammond, 2010; Kohn, 2011). These resource differences and the community environments that result (or maybe even produce them) have grave implications for a county's economic stability as well as its children academic outcomes.

In regard to school finances, expenditures, and overall academic achievement BH has 12 total schools and according to the state, 80% of the students in the district are considered proficient in math and/or reading and the annual budget is over $100 million; the graduation rate is 96% which is 6% higher than the national average (i.e. 82.2%); 8% of the school district receives free or reduced lunch (Niche, 2016a). DPS has 97 schools and according to the state, only 30% of the students in the district are proficient in math and or reading (Niche, 2016b). The annual budget for DPS is over $1.2 billion; 82% of students are receiving free or reduced lunch and the graduation rate is 65% (Niche, 2016b). According to the Mackinac Center for Public Policy (2016), the total expenditure for education per pupil in DPS 2014 - 2015 was $16,347.83 and for BH, $29,921.54 — a 45.4% difference. Annual state and federal revenue provided per pupil is similar in both districts ($18,602 in DPS; $18,032 in BH), however, the non-instructional services, such as food operations and other uses, takes up 494% more of the budget for DPS than BH ($5,077 per pupil compared to $855, respectively); Food operations has the higher difference of 126% ($941 per pupil in DPS and $416 per pupil in BH) (Mackinac Center for Public Policy, 2016). The knowledge of demographic and educational conditions in these district helps to create a greater understanding of the implications of city-county cooperation. It is necessary to call into question the actions of state and federal policymakers in regard to whether or not real equitable outcomes are actually being pursued: are federal, state, and local governments really attempting to positively affect urban communities through appropriate legislation? what are the goals of public schools absent district lines and what policies can we make that can help to dissolve these district divisions that are causing inequitable financial allocations? Detroit is not the only

metropolitan in Michigan experiencing the impact of suburban and county politics; other urban centers include Flint and Lansing, most notably. The following recommendations about city-county consolidation seek to do just that – inform public policy to better improve education practice.

Recommendations for Public Policy

Cost savings. Research has proven that most consolidated governments make significant economic gains post-consolidation. This is attributed to many of the factors including: better resource base for planning with creates more efficiency—and thus, increased cost savings. Two successful cases often noted are Kansas City (1997) and Louisville (2000). The county arguments suggest that a direct link between a city's increased economic stability and a recent city-county consolidation is too hard to draw given all the variables and factors to consider. Most research seems to support the stabilizing impact of a consolidation and further analysis would help support the detail of both claims.

Cost savings can be understood as the long-term financial benefits gained from the short-term investments into government consolidation. The formula for what has shown to produce city-county mergers most often includes a "crisis climate" within a city. Several characteristics of a crisis climate include: rapid change in population or demographic of a city, dramatic change in ethnic and social status of demographic, physical blight in core city, or loss of a city's economy base. These factors led suffering cities to contract services from private and nonprofit sectors along with contracting with neighboring municipalities for rates typically higher than they can afford. Camarillo,

California has become known as a "Contract City" due to this occurrence—major public service contracts with multiple neighboring counties (Cain, 2009).

Increase efficiency. Efficiency, in regard to city-county consolidations, addresses the most resourceful use of both financial and human capital for economic growth and development. Supporters suggest that reducing economies and bureaucracies to scale creates greater operating efficiency, thus reducing the burden on more financially challenged cities. For instance, the initial investment in tax-based consolidation has shown to have increased cost initially for a city with long-term decreases in overall spending. In Athens-Clark County, Georgia, there was a 10% cost reduction in general government spending after the transitional period of city-county consolidation subsided (Cain, 2009). Yet despite the cost, there are several benefits that can be realized in both the short- and long-term including: upgrades in quality of services provided, increases in salaries and benefits of all government employees, and significant economic benefits from improved economies of scale.

An example of government inefficiency leading to a city-county consolidation is the Indianapolis-Marion County merger in Indiana in 1969. Marion County's inability to provide for its jurisdiction resulted in a crisis of sorts leading residents to report the government as "inefficient, ineffective, and unresponsive" (Leland & Thurmaier, 2006). The local structure was too fragmented with approximately 60 local governments making it unable to effectively mobilize and address key concerns of its residents. The goal of this city-county merger was to increase the resource base for services needed. There are never cons to greater efficiency, only limitations in that it must be accompanied with goals of effectiveness and equity.

Improve resource base. Because most consolidations are a result of a city's inability to meet the needs of its residents, one major benefit traditionally included in the plan in an improvement in its resource base, which speak directly to this study's concerns with education. A city-county consolidation has the potential to increase political and legal power due to a consolidated constituency. Consolidations can increase a municipality's voting power in state legislation and ability to annex sprawling suburban areas (Cain, 2009). The City of Charlotte and Mecklenburg County, North Carolina, is an example of one community that has aggressively pursued functional consolidation (Leland & Thurmaier, 2006). They consolidated 22 services including: planning and zoning, police, solid waste disposal, public transit, water and sewer, animal control, community relations, parks and recreation, building inspections, elections, purchasing, and tax administration, only to name a few.

By reducing overlapping responsibilities, funds and local governments are able to tackle duties more efficiently, and thus more effectively. Cooperative agreements allow communities to aggregate their capital-intensive, high fixed-cost services (e.g., fire, police, and rescue services) while allowing individual local governments to management labor-intensive services such as economic development and revitalization.

Enhance planning capacity. Collaboration between city and county governments increases the ability to develop a comprehensive plan that benefits the economy and constituents of multiple sectors, both public and private. When exploring consolidations and partnership agreements, planners should identify areas where cost efficiencies or improved service delivery can be achieved and determine the willingness of the various local governments to participate (Vogel & Harrigan, 2007). Without full participation, the

desired benefits will not be realized as a true and honest agreement of terms have not been met – desired outcomes are not aligned. Research has shown that the pros of economic development to be the best motivating factor behind consolidation and not the potential increased outcomes in racial equity or even improved efficiency. Intergovernmental partnerships with increased capacities allow for better planning in all challenge areas: racial and social equity, efficiency, and urban economic growth. With proper representation and focused-skilled sets, a more comprehensive and inclusive government can produce more comprehensive and inclusive results.

Increased accountability. Increased accountability reduces the potential for conflict and territorial debates, ultimately encouraging more bi-partisanship. An increase in accountability benefits the residents of a community most as its government is now more expansive with supportive partnership other local entities. The exemplar city of Louisville, KY provides a model for increased equity through accountability across city limits. Louisville created a city-county merger that revitalized and sustains its most disadvantaged population: its children. The city-county system illustrates some of the most consistently positive reform in public schools in the country (Leland & Thurmaier, 2006). In 1972, Louisville established a city-county model where adjoining counties support one another through funding and inter-county bussing; these were the same doctrines of those fighting in favor of *Milliken v. Bradley* in Detroit, MI. However, Louisville was able to establish a city-county district, while Detroit split into two racially divided halves (Semuels, 2015). In 2010, these two cities had the same percentage of Black residents, yet, the average black Detroit student went to school with less than two percent white students, while in Louisville, the average black student went to a school

that was half white. In 2011, 62 percent of Louisville fourth graders were at or above proficiency in math, with only 31 percent of Detroit's students at or above proficiency (Semuels, 2015). Notably, the county of Detroit City Schools borders Oakland County, MI whose GDP is higher than 19 states (Oakland County Michigan, 2017). The point here is not that the presence of White children is a prerequisite to academic improvement, but rather that intentional political and organizational structures are necessary to better academic proficiency for all students. Further examination is needed in regard to spending and achievement as research results have been inconclusive in recent studies; nevertheless, money as a factor can never really be excluded from the conversation.

Solutions to address crisis and poverty related municipal challenges must include legislative support and inclusion of stable surrounding cities and counties. In order to gain the necessary momentum behind this cause, all stakeholders must agree that it is the most vulnerable's best interest that we serve, and this, in turn, truly is in the best interest of everyone.

Recommendations for Urban Schools Serving Impoverished Communities

Social and economic changes are necessary to create the lasting success that school reform initiatives are attempting because the weak links are systemic. In the meantime, there has been research on urban schools that are succeeding and ultimately beating the odds against them. Recent literature and education research has begun to document schools labeled as "90/90/90" schools (Kearney, Herrington, & Aguilar, 2012; Reeves, 2003), which were originally coined by Douglas Reeves in 2003. The characteristics of these schools are: more than 90 percent of the students are eligible for free and reduced lunch, a commonly used reference indicative of low income families;

(2) more than 90 percent of the students are from ethnic minorities; (3) and more than 90% of the students met or achieved high academic standards, according to an independently conducted test of academic achievement. This section will review studies that have highlighted urban school success and emphasize replicable strategies that can be implemented at similar schools.

In the original study, Reeves (2003) performed a comprehensive review of high-performance high-poverty school analysis data from more than 130,000 students in 228 buildings. His findings suggest that academic success has a strong relationship with the following characteristics in a school: a focus on academic achievement, clear curriculum choices, frequent assessment of student progress, multiple opportunities for improvement, an emphasis on nonfiction writing, and collaborative scoring of student work. All of these factors together have shown consistent success and replicable effects on students living in poverty (Hampton, 2016; Meyer, 2012; Reeves, 2003)

Rigor and Accountability. The tenets outlined by Reeves's study and several similar studies (Chenoweth, 2009; Kearney, Herrington, & Aguilar, 2012; Ladson-Billings, 1995) demonstrate several distinct principles: a focus on academic achievement, a clear curriculum with a literacy focus, explicit collaboration of teachers and administrators and communal decision-making, and rigorous tracking of student work with purpose and intentionality. Throughout his analysis and explanation of 90/90/90 schools, Reeves noted that students were able to see their growth and frequent assessments visually on display boards and that multiple opportunities for improvement on these assessments allowed for a safe and nurturing environment for this open tracking of students. Reading and writing was the core of the curriculum, sometimes with limited

academic time for other subjects. This emphasis on literacy takes the "coverage model" approach to teaching and learning by understanding that reading and writing are "wraparound" skills that are being tested in on content area assessments (Reeves, 2003). Again, Ladson-Billings (1995) made groundbreaking contributions to the field in regard to linguistically-affirming curricula for students of color living in poverty. In addition, cooperative scoring of teachers created a unifying culture throughout the school and helped better align curriculum goals and standards across content area and grade levels. Reeves reported consistently high success rates within schools practicing these tenets and recorded that at most 90/90/90 schools in the country, 100% of students met their academic benchmarks and many progressed more than two years under these intense monitoring and advising standards. While these schools' academic successes may be against the commonly held beliefs about race, class, wealth, and competency, the sentiments stand true that, when given the same opportunities for success equally, it is proven that all children can and will learn.

Models of success. Success with similar principles has repeatedly been seen in urban schools across the country and over decades. In 1974, New York's Office of Education Performance Review board conducted a study that surveyed two urban schools both serving predominantly poor students; regarding academics, one school was high achieving and the other was low-achieving (Edmonds, 1979). "Both schools were studied in an attempt to identify those differences that seemed most responsible for the achievement variation between the two schools" (p. 16). The study yielded the following results: (1) differences seemed to be attributed to factors under the schools' control, (2) administrative practices, policies, and attitudes appeared to have a significant impact, (3)

high-achieving schools appeared to have an administrative team who possessed a good balance between managerial and instructional skills, (4) the administrative teams in high-achieving schools had plans to address literacy and implemented it effectively, (5) low-achieving schools often had instructors who attributed children's reading problem to non-school factors and were pessimistic about the children's ability to learn, and (6) children responded to unstimulating learning experiences as expected—as apathetic, disruptive, and absent (pp. 16-17).

The high-achieving school in New York also had rigorous reporting of students' progress and collective goals set as a staff. The school placed a greater emphasis on reading and teachers held high expectations of their students. Edmonds (1979) points out that the high-achieving school was not afraid—and even eager—to adapt new curricular strategies in place of old ineffective ones. In summation, Edmonds notes that "indispensable characteristics" of high-achieving urban school included: rigorous instruction, without oppression; strong administrative leadership; school resources directed to fundamental objectives; and high-expectations of students (p. 22). Other studies cite teacher relationships as well as collaboration between colleagues. Chenoweth (2009) adds that "teachers who work collaboratively help guard the quality of the teaching in ways that are impossible when teacher work in isolation" and "schools that successfully teach students of poverty and students of color assume that they must teach what they want their students to know" (Chenoweth, 2009, pp. 39-40). The school and teachers work together to create curricula relevant and necessary to the students' lives while maintaining rigor. Chenoweth discusses attributes of successful schools, stating:

> They begin by figuring out what children need to know and be able to do; they assess what their students already know and are able to do; they figure out how to move students from where they are to where they need to be; and then they analyze what students have learned and whether they need further instruction. They do this systemically grade by grade, class by class, student by student, month by month, and day by day, carefully and relentlessly. (2009, p. 40)

This is not the level of instruction received or provided to all of the nation's children.

I**nternational principles.** The Institute for Research and Reform in Education (IRRE) (2003) explains seven critical features considered both nationally and internationally in regard to school-wide improvement:

1. Greater continuity of care for students
2. Lower student/adult ratios and increased instructional time
3. High, clear, and fair standards
4. and enriched opportunities for students
5. Equip, empower, and expect staff to improve instruction
6. Flexible allocation of resources
7. Collective responsibility of adults

Continuity of care for students is setting high standards with increased instructional time for students "to learn," "to perform," and "to be recognized" for strengths and individual creativity. Research suggests that students develop and keep learning communities throughout their schooling. Autonomy in school reform addresses student and parent input and feedback about "high, clear, fair," and relevant curricula and assessment or helping to make the material culturally relevant. Lastly, the features suggest that the most impactful quality in a school is teachers who are actively involved in building community partnerships with families, who hold one another accountable for student performance, and

who are supported and respected by officials.

Internationally, widespread school initiatives in Finland and Singapore, among other developing countries, also provide insight into the impact that these variables can have on student achievement. Finland and Singapore both support a model of teaching and learning that value the collaboration and feedback of teachers (Darling, Hammond, 2010)**.** Ideally, initiatives would include less assessment and more informal evaluations that are performed by the teachers every day and used continuously to better shape the learning environment.

Reported by the National Education Association, in top-performing countries like Finland, Singapore, and Canada, teachers' input is "respected, valued and considered a vital part of education policy" (Logan & Walker, 2011, p. 3). In the article, Singapore's senior minister of state for education, Iswaran, explains:

> high quality teachers has been the lynchpin of his country's status as one of the world's highest performing education systems. In building its education reforms, Singapore identified teacher quality as key to improving outcomes and the government aggressively promotes and fosters teaching talent. (Logan & Walker, 2011, p. 2)

The systemic shortcomings are constant underpinnings to school success and if lasting changes are expected in urban schools serving low-income communities, intentional and explicit efforts must be made to (1) set high expectations of the students, (2) collaborate across content areas and with administrative teams to approach foundational goals together, (3) diligently monitor and review student achievement with both the students and other school faculty members, (4) adopt a "wraparound" model for learning that

makes literacy education its core, and (5) advocate for policy changes that require equitable distributions of school resources to effectively address student performance needs. This would be a starting place to an evidence-based urban education reform movement.

Recommendations for Practice and Future Research

The recommendations above can be applied to most urban communities serving highly-diverse populations across the country. Like most American states, Michigan experiences residential segregation based on race and income due to our country's complex history of politics and legislation. In order to address the education disparate, the economic polarities must be taken into account as education is funded by local and state tax revenues. National-level representative can consider policy reforms that limit the fractioning of districts particularly near urban centers such as Detroit, Lansing, and Flint. Divisions created by districts ultimately isolate funding sources providing more and less for others in regard to the quality of public services. Funding for education resources are also being drained for the tax-revenue resources as charter school numbers continue to increase virtually unregulated. Additionally, the Michigan Department of Education should maintain control of districts in financial crisis in order to better stimulate the reform necessary to positively and economically impact that community. Communities experiencing chronic poverty and academic underachievement should seek support from their counties and neighboring communities by campaigning for cooperative economic politics. A data-driven education system has recently been established as a culture throughout Michigan public schools creating a more hopeful future for the state's most vulnerable children.

The current research available on the per pupil spending and academic outcomes occasionally creates a hazy and complex picture of what needs to be done to improve education conditions. Coleman (1966), Wenglinsky (1997), and Hanushek (2016), among others, each explored the relationship between spending and outcomes and suggest that more research be done to provide the most accurate picture of what is happening at the school level. Financial structures must be evaluated not just for impoverished school producing academic underachievement, but investigations into the financial structures for impoverished schools that are producing high academic outcomes. Future research should consider the long-time implications of city-county consolidations for municipal and education purpose. An investigation into the financial structures of counties that house high-poverty cities can be explored to better understand the chronic inability of some cities to escape poverty. It is necessary to continue the conversations about per pupil spending, school finance structures, and public policy as the impact illustrated through this studies analysis proved to be too large to be ignored. Lastly, great value would come from understanding an expenditure threshold; future statistical analysis should consider the possibility of uncovering the amount necessary to spend per pupil to most positively impact student achievement.

Conclusion

Despite the many advantages noted in the above section regarding city-county mergers and high-poverty, high-achieving schools, the original causality of crisis and high poverty in urban cities is a hindrance to equitable resource and wealth distribution; an individualistic interests and the institutionalized racism continue to divide us. Historically, consolidations only become necessary due to financial stress and economic

hardships experienced by a city and cross-county partnerships are considered a political gesture of compassion. However, what seems to be unequivocal is that governance tends to lean more toward politics than ethics, and cost and efficiency often outweigh human value and equity. Too often when the preservation of dignity and quality of life should be a main concern, the financial bottom line is the priority. All levels of government should seek to secure the following, as it essentially exists to do: "to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty"—it was intentional that the American Preamble does not include "secure the economy," as to not confuse making a living with the actual quality of one's life.

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APPENDIX A: 5th GRADE ENGLISH LANGUAGE ARTS CORRELATION TABLE

5th Grade English Language Arts Univariate Correlation Coefficients

		allpp	PPE instruction	Student TeacherRatio	City	Suburb	whiteprop
Pearson Correlation	allpp	1.00	0.05	0.08	-0.09	0.19	0.28
	PPEinstruction	0.05	1.00	-0.60	0.21	0.07	-0.19
	StudentTeacherRatio	0.08	-0.60	1.00	-0.08	0.20	-0.02
	City	-0.09	0.21	-0.08	1.00	-0.17	-0.46
	Suburb	0.19	0.07	0.20	-0.17	1.00	-0.23
	whtprop	0.28	-0.19	-0.02	-0.46	-0.23	1.00
Sig. (1-tailed)	allpp	.	0.16	0.04	0.02	0.00	0.00
	PPEinstruction	0.16	.	0.00	0.00	0.06	0.00
	StudentTeacherRatio	0.04	0.00	.	0.04	0.00	0.33
	City	0.02	0.00	0.04	.	0.00	0.00
	Suburb	0.00	0.06	0.00	0.00	.	0.00
	whtprop	0.00	0.00	0.33	0.00	0.00	.

**Dependent variable: % of all proficient/advanced*

APPENDIX B: 5th GRADE MATHEMATICS CORRELATION TABLE

5th Grade Mathematics Univariate Correlation Coefficients

		allpp	PPEinstruction	Student TeacherRatio	City	Suburb	whtprop
Pearson Correlation	allpp	1.00	0.07	0.04	-0.06	0.16	0.25
	PPEinstruction	0.07	1.00	-0.60	0.21	0.07	-0.20
	StudentTeacherRatio	0.04	-0.60	1.00	-0.08	0.19	-0.02
	City	-0.06	0.21	-0.08	1.00	-0.16	-0.44
	Suburb	0.16	0.07	0.19	-0.16	1.00	-0.24
	whtprop	0.25	-0.20	-0.02	-0.44	-0.24	1.00
Sig. (1-tailed)	allpp	.	0.07	0.19	0.11	0.00	0.00
	PPEinstruction	0.07	.	0.00	0.00	0.06	0.00
	StudentTeacherRatio	0.19	0.00	.	0.04	0.00	0.37
	City	0.11	0.00	0.04	.	0.00	0.00
	Suburb	0.00	0.06	0.00	0.00	.	0.00
	whtprop	0.00	0.00	0.37	0.00	0.00	.

**Dependent variable: % of all proficient/advanced*

APPENDIX C: 8th GRADE ENGLISH LANGUAGE ARTS CORRELATION TABLE

8th Grade English Language Arts Univariate Correlation Coefficients

		allpp	PPE instruction	StudentTeacher Ratio	City	Suburb	whiteprop
Pearson Correlation	allpp	1.00	0.06	0.04	-0.08	0.10	0.35
	PPEinstruction	0.06	1.00	-0.56	0.22	0.08	-0.23
	StudentTeacherRatio	0.04	-0.56	1.00	-0.07	0.19	-0.01
	City	-0.08	0.22	-0.07	1.00	-0.17	-0.46
	Suburb	0.10	0.08	0.19	-0.17	1.00	-0.26
	whiteprop	0.35	-0.23	-0.01	-0.46	-0.26	1.00
Sig. (1-tailed)	allpp	.	0.08	0.21	0.03	0.01	0.00
	PPEinstruction	0.08	.	0.00	0.00	0.03	0.00
	StudentTeacherRatio	0.21	0.00	.	0.05	0.00	0.43
	City	0.03	0.00	0.05	.	0.00	0.00
	Suburb	0.01	0.03	0.00	0.00	.	0.00
	whiteprop	0.00	0.00	0.43	0.00	0.00	.

**Dependent variable: % of all proficient/advanced*

APPENDIX C: 8th GRADE MATHEMATICS CORRELATION TABLE

8th Grade Mathematics Univariate Correlation Coefficients

		allpp	PPE instruction	Student TeacherRatio	City	Suburban	whtprop
Pearson Correlation	allpp	1.000	.056	.032	-.050	.110	.267
	PPEinstruction	.056	1.000	-.559	.216	.081	-.223
	StudentTeacherRatio	.032	-.559	1.000	-.066	.189	-.016
	City	-.050	.216	-.066	1.000	-.168	-.481
	Suburban	.110	.081	.189	-.168	1.000	-.249
	whtprop	.267	-.223	-.016	-.481	-.249	1.000
Sig. (1-tailed)	allpp	.	.104	.240	.134	.007	.000
	PPEinstruction	.104	.	.000	.000	.034	.000
	StudentTeacherRatio	.240	.000	.	.071	.000	.359
	City	.134	.000	.071	.	.000	.000
	Suburban	.007	.034	.000	.000	.	.000
	whtprop	.000	.000	.359	.000	.000	.

**Dependent variable: % of all proficient/advanced*

APPENDIX E: 11th GRADE ENGLISH LANGUAGE ARTS CORRELATION TABLE

11th Grade English Language Arts Univariate Correlation Coefficients

		allpp	PPE instruction	Student TeacherRatio	City	Suburb	whiteprop
Pearson Correlation	allpp	1.00	0.09	0.06	-0.04	0.04	0.27
	PPEinstruction	0.09	1.00	-0.55	0.22	0.12	-0.22
	StudentTeacherRatio	0.06	-0.55	1.00	-0.08	0.17	0.01
	City	-0.04	0.22	-0.08	1.00	-0.17	-0.46
	Suburb	0.04	0.12	0.17	-0.17	1.00	-0.25
	whiteprop	0.27	-0.22	0.01	-0.46	-0.25	1.00
Sig. (1-tailed)	allpp	.	0.02	0.09	0.17	0.20	0.00
	PPEinstruction	0.02	.	0.00	0.00	0.01	0.00
	StudentTeacherRatio	0.09	0.00	.	0.03	0.00	0.42
	City	0.17	0.00	0.03	.	0.00	0.00
	Suburb	0.20	0.01	0.00	0.00	.	0.00
	whiteprop	0.00	0.00	0.42	0.00	0.00	.

**Dependent variable: % of all proficient/advanced*

APPENDIX F: 11th GRADE ENGLISH MATHEMATICS CORRELATION TAB

11th Grade Mathematics Univariate Correlation Coefficients

		allpp	PPE instruction	Student TeacherRatio	City	Suburb	whtprop
Pearson Correlation	allpp	1.00	0.08	0.07	-0.04	0.12	0.26
	PPEinstruction	0.08	1.00	-0.55	0.22	0.12	-0.22
	StudentTeacherRatio	0.07	-0.55	1.00	-0.08	0.17	0.01
	City	-0.04	0.22	-0.08	1.00	-0.17	-0.46
	Suburb	0.12	0.12	0.17	-0.17	1.00	-0.25
	whtprop	0.26	-0.22	0.01	-0.46	-0.25	1.00
Sig. (1-tailed)	allpp	.	0.05	0.05	0.22	0.01	0.00
	PPEinstruction	0.05	.	0.00	0.00	0.01	0.00
	StudentTeacherRatio	0.05	0.00	.	0.04	0.00	0.44
	City	0.22	0.00	0.04	.	0.00	0.00
	Suburb	0.01	0.01	0.00	0.00	.	0.00
	whtprop	0.00	0.00	0.44	0.00	0.00	.

**Dependent variable: % of all proficient/advanced*