

2015

Mississippi Statewide Accountability System: A Measure Of Academic Attainment Or Other Factors

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MISSISSIPPI'S ACCOUNTABILITY SYSTEM: A MEASURE OF ACADEMIC
ATTAINMENT OR OTHER FACTORS

A dissertation
presented in partial fulfillment of requirements
for the degree of Doctorate of Philosophy
in the Department of Educational Leadership and Counseling
The University of Mississippi

by

Eddie De Anderson

May 2015

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ABSTRACT

This quantitative study analyzed the construct validity of the Mississippi Statewide Accountability System through an analysis of the relationship between teacher, financial, socio-economic, and social characteristics and the Quality of distribution index of public school districts in Mississippi. This study sought to determine if there were constructs outside the control of schools and districts that significantly correlated to outcomes of the Mississippi Statewide Accountability System that were not accounted for in the calculations. Educational leaders, communities, and other educational stakeholders have paid close attention to the Mississippi Statewide Accountability System as legislators have chosen to use it to rank schools and districts from A-F.

The major component of the Mississippi Statewide Accountability System is the Quality of Distribution Index which is based on student test scores. This research used the Quality of Distribution Index results from 148 public school districts from SY 2011-2012 as the dependent variable. Data was collected from reputable sources from SY 2011-2012 for twelve independent variables, not in control of school personnel that were a part of all school districts. Correlations were determined using a Pearson Product Moment Correlation Coefficient and a Coefficient of Determination at the .01 level (two tailed) of significance.

The research findings indicated a significant correlation between Quality of distribution index and eleven of the twelve constructs and thus: The Mississippi Statewide Accountability System has issues with construct validity.

DEDICATION

This dissertation is the product of a wife, Cerita, who has spent countless hours encouraging her husband and for that, I am and will be forever grateful. Thank you for just being the beautiful person you are, inside and out. Jason and Daniel, and Sierra, you have always been the motivating factor for my work, my prayers, and my dedication. I thank God for my family. This document is as much yours as it is mine.

I would be remiss, if I did not dedicate this document to a mother of 14 who greatly loved each of her children, Eddie Mae Anderson. She believed in us and she and God are the reason why all of her children are successful.

ACKNOWLEDGEMENTS

I extend my thanks to Dr. Douglas Davis who guided me from day one until the very last day of this process. I thank you for allowing me to complete a dissertation that was important to me, as an educator. I thank you for encouraging me when I was not progressing as quickly as I would have liked. I also thank the other members of my committee for your patience and encouragement: Dr. Joe Blackburn, Dr. Dennis Bunch, and Dr. Cecil Weeks.

Special thanks go to Dr. Debra Petty, an outstanding educator, who encouraged me to continue my education and the Lord blessed her to always call, email, or drop by when I was at my lowest. Your belief will always be remembered.

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CHAPTER I

Introduction

Accountability is not a new concept in education; rather, the practice of holding educators and schools responsible for student knowledge, behaviors, and college preparedness began as early as the early nineteenth century (Kirst, 1990). During the early 1800's, teachers were paid according to student success on standardized tests. Regardless of the early beginnings, performance-based pay and accountability systems have not gained a prominent role in American educational policy until recent reform policies encouraged at the federal level. Currently, test-based accountability, teacher evaluation, and pay-for-performance systems are established or being established in almost every state in the United States as a result of No Child Left Behind (No Child Left Behind, 2002), and President Obama's "Race to the Top" (2008). Given the current rapid expansion of performance-based policies, serious issues of fairness and equity among professional educators are raised if an educator is held accountable for test-based measurements of which he or she may have limited or no influence or effect. The primary issue addressed in this research is the construct validity of the Mississippi Statewide Accountability System (MSAS). Construct validity is defined as the degree to which a test measures the specific construct for which the assessment was intended (Cronbach & Meehl, 1955; Cook & Campbell, 1979). Based on the characteristics of the Mississippi Statewide Accountability System as implemented in SY 2011-2012, the standardized state assessments, Mississippi Curriculum Tests, second edition (MCT2) and Subject Area Tests, second edition (SATP2), were used as a measure of teacher quality and professional performance. The current MSAS system

uses an outcome measure of student performance, school and district Quality of Distribution Index (QDI) scores to grade the performance of schools and districts. Nonetheless, existing research indicates many other variables teachers or schools have little or no control over correlate to student performance indices such as the QDI (Baker, et al., 2010). The existence of possible covariates to student achievement unrelated to teacher classroom performance pose possible fairness and equity issues related to the validity of the Mississippi accountability policy's use of curriculum-based criterion reference test scores to assess the quality of educational services schools and teachers provide. The purpose of this research is to assess the construct validity of the 2011-12 Mississippi Statewide Accountability System (MSAS).

Statement of the Problem

Policymakers continuously strive to design accountability systems to accurately measure the educational attainment of students and the effectiveness of teachers and educational leaders. These systems are defined in many ways and include various facets of the educational process. Educational accountability systems are different across states but have common characteristics which typically include rewarding schools and professional educators for good student performance and punishing schools, and often individual educators, for poor performance. The ultimate goal of accountability systems is improved teaching and learning. Performance-based policies seek to measure the extent to which students have acquired knowledge and skills, how much students have learned when compared to others, which teachers and schools performed well and which performed poorly, which states are performing well, whether students developed critical and creative thinking skills, and whether students achieved projected levels of growth in learning curriculum objectives (Lingenfelter, 2003). Regardless, accurate measurement of

student learning combined with a clear relationship between the quality of teaching and learning processes, and student performance are necessary for a valid and equitable performance-based accountability system. However, when significant correlations exist between the outcome measures, in this case performance, and other variables that are not recognized in the assessment process (e.g. socioeconomic status), the construct validity of the assessment system becomes questionable. If the system has high construct validity, possible extraneous covariates should have low correlations with the outcome, or dependent variable, of student achievement on a criterion assessment.

Given the complex social/cultural history and high levels of poverty in Mississippi, there are multiple areas of concern regarding construct validity and the MSAS process. In other words, if social and economic variables show a high mathematical relationship to a district's QDI, the use of standardized assessments to provide a numerical rating that purports to indicate the quality of professional services provided by educators in a classroom, school, or district is an important policy consideration.

Education Reform in America

Modern education reform began in America following World War II. The first round of national reform, The National Defense Education Act of 1958 (NDEA) was passed in response to the Soviet Union putting a satellite into space (Pulliam & Van Patten, 1995). President John F. Kennedy further emphasized the national need for improved education with a declaration that the United States would be the first to put a man on the moon. Kennedy recognized that this could only be done through a better educated populous. After the assassination of President Kennedy, a former teacher, Lyndon Johnson, signed into law the Elementary and Secondary Schools Act of

1965 (ESEA). This legislation was called the most sweeping federal education bill ever passed and ESEA became a key component of Johnson's "War on Poverty" (Robelen, 2005). The ESEA was designed to help children from disadvantaged homes take advantage of an educational system which could positively change every facet of their lives. Yet, almost fifty years later, there has been little progress in reducing the achievement gap between high and low SES students, and white students and students of color.

There have been significant changes in the ESEA since its inception in 1965 and, arguably, none more sweeping than the changes mandated under the No Child Left Behind Act (NCLB, 2002). President George W. Bush argued too many of our neediest children were being left behind and noted that it was time for a system of accountability, choice, and flexibility in Federal education programs (Paige, 2008). The NCLB law required each state to establish guidelines to determine what levels of measured performance students would have to achieve to be labeled proficient at different grade levels. States were then required to ensure that all students receive the educational services to achieve at the proficient level. Mississippi's Statewide Accountability System was developed in response to NCLB and is currently used to determine school and district ratings.

Current United States Secretary of Education Arne Duncan suggested the retooling of NCLB or the ESEA in the United States (Klein, 2009). Duncan advocated removing the principal of any school in the bottom five percent of schools in each state. His plan also included the possibility of replacing all teachers in a failing district and essentially starting over. This recommendation impacted Mississippi when former Mississippi State School Superintendent, Tom Burnham, suggested the State Board of Education be allowed to consolidate failing districts

with high-performing districts or even creating charter schools to replace failing schools (Harrison, 2009). These consequences will be enforced with the assumption that school and district QDI scores accurately reflect the performance of educators. Removing teachers from classrooms, principals from schools, superintendents and school board members, and consolidating schools is based on data from a system that has been established by legislators through a political process. Regardless, there is a lack of data that shows that the testing system actually measures what it is designed to measure. There is no accounting in the MSAS for other factors, or covariates, outside of direct school control, that may significantly correlate to levels of student achievement.

Recent Education Policy in Mississippi

In 2012, Harrison chronicled efforts in Mississippi to pass legislation intended to dramatically transform public schools with the passage of a charter school bill by the senate. This measure died in committee and never reached the full house. Shortly after the Mississippi House of representatives killed the charter schools bill of 2012, Senate Bill 2776 (SB 2776, 2012) was introduced which revised the school accountability system to an A-F system. Senate Bill 2776 modified state code directing the Mississippi Department of Education and the State Board of Education to change the existing performance levels for schools and districts from the current seven tiered system from high to low of Star, High Performing, Successful, Academic Watch, Low Performing, At-Risk of Failing, and Failing to a five tiered system from high to low of A-Star, B-High Performing, C-Successful, D- Academic Watch, and F- encompassing Low Performing, At-Risk of Failing, and Failing. The rankings for high schools in Mississippi were based on student test scores on the state's exit exams in Algebra I, Biology I, English II, and U.S.

History. Elementary and middle schools' performance levels were based on the second phase of the Mississippi Curriculum Tests (MCT2). Students in grades three through seven were tested in the areas of math, reading, and grammar. Student test scores were divided into four different subsets, or quartiles, that were based on cut scores established by the state department and the testing agency. A growth factor is included which could allow a school or district to move up a level if growth is met. A Quality of Distribution Index (QDI) was established based on the following formula: $QDI = \%basic + (2 \times \% proficient) + (3 \times \% advanced)$. One quickly notes that only three quartiles are awarded points. Schools received no points for students who are minimal, no matter how close one is to the cut score, or how much the child has improved during the past year. Anything below a QDI of 165 is considered as being less than successful. Schools or districts having a QDI of 200 or more had to have a graduation rate of 75% or more to be rated an "A" or "B" (Keifer, 2010). No consideration was given for factors that may impact the child's learning which are out of the control of educators. The lack of tools within the system to account for external factors further heightens the need to assess the construct validity of the MSAS.

The push to develop charter schools to improve Mississippi schools continued the following year when Governor Phil Bryant emphasized charter schools in his State of the State address in January, 2013 (Solis, 2013). Governor Bryant's plan included merit pay, more emphasis on reading in early grades, setting higher standards for students who want to become teachers and charter schools free of many of the regulations faced by public schools (Solis, 2013). Much of the governor's package was passed by the 2013 legislature which included House of Representatives Bill 369 (Charter Schools Act, 2013) which was better known as "The

Charter Schools Act of 2013.” Charter Schools now have their own governing board, and must have permission of the district to locate in A, B, or C district initially will have five year terms, students will not be able to cross district lines, and enrollment must reflect no less than 80% of the demographics of the existing district (Charter Schools Act, 2013). The Charter Schools are not subject to the rules and regulations adopted by the State Board of Education or the local School Board, 75% of teachers must be licensed but no administrators are required to be licensed, and charters will be eligible for state and local funding. A maximum of 15 charter schools will be established each year, with the first to open in the fall of 2014. Charter Schools are officially with us although the Center for Research and Education Outcomes of Stanford University proclaimed that only 17% of charter schools significantly outperform traditional schools and approximately 47% perform significantly worse (CREDO, 2009).

The same year, Mississippi Governor, Phil Bryant, asked the legislature to adopt a performance based compensation system rather than continuing to raise the pay for all teachers through its seniority and education level system (Harrison, 2012). Bryant’s wish was granted through the “Mississippi Education Works Program” (SB 2658, 2013) which included language to establish a pilot system in four school districts for evaluating the performance of teachers and administrators for the purpose of performance based compensation. If implementation is successful in these districts then it will be expanded throughout the state after two years. Bryant’s merit pay system would be by and large based on student improvement on state tests.

The passage of the new A-F rating system, the charter school legislation, and a performance-based teacher evaluation system established the need for a valid assessment system. Given the potential impact of these new policies, the validity of the measurement instrument

used to determine the ratings is critical to the success of Mississippi's accountability system. In fact, there is a likelihood that a lack of construct validity of an instrument/policy rating educational performance such as the Mississippi Statewide Accountability System may harm the very school district it was intended to help.

Studies That Have Addressed the Problem

The validity of measurements and procedures used in high stakes accountability policies have been the subject of considerable research and commentary since the inception of NCLB in 2002. Robert Linn (2006) clearly articulated the conceptual framework utilized in this research by stating:

Grading, sanctioning, or rewarding schools based on test results used in an accountability system, presupposes that differences test-based accountability results reflect differences in school quality... Evaluating the validity inferences about the quality of schools from test-based accountability results requires the elimination of potential explanations of the observed student test results other than differences in school quality. (8)

Based on Linn's argument, if strong correlations are found between "other potential explanations" of a district's QDI, then there is evidence that Mississippi's Statewide Accountability System does not meet reasonable standards of construct validity from which to make inferences about the quality of job performance of professional educators in a district.

The key issue to be addressed in this research is the construct validity assumed between measures of student performance and actions of personnel accountability embedded within Mississippi's (and most other state's) educational accountability system. According to William (2010), there are two clear inferences necessary to ensure the validity of performance measures

common in accountability policies. First, the ability of tests to assess what schools are expected to provide students. This is simple content validity and addresses the level that tests are actually measuring what they purport to measure, usually a state's adopted curriculum. Second, there is a need "to ensure that variance in test scores is related to differences in the quality of schooling received, rather than differences in the students' aptitude, socioeconomic status, and so on" (William, 2010, pg. 110). This is the type of construct validity to be examined in this research.

William quotes Messick (1989) to provide an understanding of the meaning of construct validity within the context of accountability measures. According to Messick (1989), construct validity is "an integrated evaluative judgment of the degree to which empirical evidence and theoretical rationales support the adequacy and appropriateness of inferences and actions based on test scores or other modes of assessment" (13). As an example, using a measure of construct validity based on the level of variance in student test scores accounted for by between-school differences (total variance minus within-school variance), the Program for International Student Assessment's (PISA) (OECD, 2004) found that no more than 8% of the total variance of mathematics scores of 15-year-olds in the United States is accounted for by the quality of education provided by the schools. According to William, a high level of between-school variance is an indication of valid assessment systems because this number indicates the ability of the assessment indicators to represent the quality of education provided by each school or district. Unfortunately, the small number of comparison grade-level schools within most districts in Mississippi, prevent the use of this method for assessing the validity of the Mississippi School Accountability System. This research will explore the same concerns using multiple correlations of variables independent of classroom instruction.

There has been much examination of the use of standardized tests to rank schools, quantify teacher quality, determine pay raises for teachers, and even determining student graduation. The question is often raised whether it is reasonable to use test data as the main, and sometimes, the only factor used in determining school rankings or ratings. Tashlik (2010) stated that the numerical results of standardized tests have become synonymous with performance assessment as Secretary of Education Arne Duncan, governors, and many other stakeholders call for teacher and school accountability. Regardless, there are many factors related to an individual's education over which teachers or schools have no control.

Schlechty (2001) argued against performance-based sanctions and asserted that an unfortunate consequence of ranking schools is too much attention paid to test scores and not enough attention to overall student learning. Still, the need remains to remediate the ongoing negative impact of the prevalence of low student achievement among low socioeconomic status (SES) students. Sadly, in spite of ten years of performance-based accountability policies in the United States, there is little evidence of overall improvement in student achievement or the reduction in the achievement gap between low and high SES students (Derthick & Dunn, 2009).

An additional concern with construct validity of standardized assessment policies is the tendency for public misunderstanding of the data. Bracey (2008) highlighted this concern using the "A Nation at Risk" (USDOE, 1983) report as an example. Bracey pointed out that one variable, 17 year old science scores, was the only one of nine variables tested where the United States tested lower than international comparisons; yet, this was the report used to start a testing frenzy that has only intensified over the years. Boyle and Bragg (2009) deduced that rating schools by tests scores was a waste of money. They concluded that when using multiple

regression modeling statistics to analyze variables in predicting or explaining testing outcomes, the socioeconomic status of a school significantly impacted test performance.

According to Noguera (2009), with NCLB, President George W. Bush drew attention to education and especially the achievement gap between subgroups but provided schools with little if any guidance, support, or resources needed to help improve learning or reduce the achievement gap. Noguera explained that No Child Left Behind, with its view of testing as the salvation of schools, merit pay for teachers, charter schools, and other schemes may encourage teaching to the test and discourage teachers from working in schools where the poverty level is high and thus inhibit the ability to make gains in achievement. The use of testing continues at all levels of education raising questions of when the improvement will happen for children who are from impoverished backgrounds.

The Economic Institute (Baker, et al., 2010) reported that there is little evidence that teachers perform better or student learning improved just because teachers are rewarded for test score gains. Baker and her colleagues reported using test scores as a single variable to determine teacher effectiveness is not valid or reliable. This research showed that teachers who were in the top 20 percent of effectiveness one year often were not recognized as such the next year and one third of them moved to the bottom 40 percent. Factors that influence student test score gains attributed to individual teachers could easily be the result of previous teachers' influences, current teachers of other subjects, experiences at home, experiences during summer, community involvement, and many other factors of which teachers have no control. Baker et al. found that 75 percent of schools listed as being in the bottom 20 percent are only listed because differences in learning outside of school had not been taken into account. Baker and his colleagues, all

recognized national leaders in the field of measurement and assessment, concluded the potential consequences of inappropriate uses of test-based evaluation include narrowing of the curriculum, inaccurate personnel decisions, and teacher loss to the profession. Some politicians who support merit pay based on test results say this will help low performing schools; yet, these experts in measurement argue performance-based system based on instruments like the QDI, will likely cause talented teachers to avoid high needs students and schools altogether in an effort to increase their professional reputations and salaries.

Rothstein (2004) presented a similar argument as Baker et al. (2010) but goes a step further in his conclusion in his book *Class and Schools*. Rothstein discussed the achievement gap of the haves and the have-nots, and between blacks and whites. Rothstein exclaimed that testing will not close the achievement gap. He concluded that in order to close the achievement gap, we must be willing to make tough choices about social class differences. Rothstein's study included information from the 1970's study of Coleman (1983) who authored the now famous Coleman Report. Coleman's research concluded that family history, social class, and socioeconomic status were crucial variables in determining success in schools. Rothstein concluded that things such as parent's social class, education, and occupation also affect a child's learning. Rothstein also added health and housing as factors impacting a child's learning thus highlighting the importance of programs such as federally funded free and reduced-cost breakfast and lunch programs at school. Rothstein does not say nor insinuate that eliminating the achievement gap is impossible; rather, he points to it being difficult and costly. Rothstein noted that if low income students are to enter school as well prepared as those from affluent backgrounds, then we will have to find ways to give them access to similar reading materials at

age appropriate times. He supports having schools provide more early childhood learning, more summer programs designed to reduce loss of learning, provide experiences similar to those of their more affluent classmates, and provide healthcare services that reduce and sometimes eliminate barriers to student learning. Rothstein argued that schools cannot change or significantly reduce the achievement gap without changing the circumstances of the low income or less fortunate population. Viable solutions have been articulated by Coleman and Rothstein but will we seek to make the difference or will we continue to judge teachers and schools by their economically disadvantaged population and punish teachers, schools and districts on the basis of a system which is very possibly invalid?

This section summarized highlights of a large and significant body of research, much of it presented by leaders in the field of educational assessment and measurement, questioning the validity and policy implications of performance-based accountability and pay systems based on student test scores. This research seeks to determine if the MSAS is a valid policy instrument to effectively measure teacher, school, or district effectiveness.

Significance of the Study

Regardless of the concerns, state legislatures and governors across the country continue to develop and expand policies based on measurement instruments such as the Mississippi Statewide Accountability System with questionable construct validity based on an inability to capture the full complexity of student learning. This study will build on this extensive body of research through an assessment of the construct validity of the MSAS and QDI ratings, a measurement instrument that has not been examined for construct validity. Further, the unique race-based social, economic, and historical context of Mississippi provides the potential of this

research to support an argument that current policy in Mississippi is, perhaps unintentionally, continuing to reinforce past systems of racial and economic oppression. Simply, the use of QDI scores with possible issues of construct validity such as used for the SY 2011-2012 MSAS process may unfairly make it difficult for districts labeled “D” or “F” to attract top teachers and administrators, lower the market wage value of current teachers and administrators, and severely damage levels of trust and confidence by the public for the public schools in a community. .

Purpose of the Study

The purpose of this research is to examine the relationship between the Quality of Distribution Index (QDI), a measure of overall student academic performance of school districts in Mississippi, and a range of possible covariates including socio economic characteristics, teacher characteristics, school finance characteristics, and social historical characteristics within each public school district in Mississippi. The purpose is to interpret relationship among these variables and district’s QDI ratings to examine construct validity inferences assumed in policy development and aims. The data analyzed will identify correlations between community and school characteristics and performance outcomes. Specifically, what do these correlations mean and what are their implications in regard to Mississippi school and educator accountability policies (and similar policies in place in states across the United States)?

Pilot data show a strong negative correlation (-.833) in Mississippi between district-level QDI and percent of students receiving free or reduced school lunch (a measure of the overall economic status of students in a district), and a high positive correlation (.841) between percent of African American students and percent of students receiving free or reduced school lunch. On

the other hand, pilot data show low correlations between average teacher salary in a district and QDI, percent of African American Students, and percent of students receiving free lunch.

These pilot data suggest a strong relationship between students in Mississippi who are poor, many of whom are African American, and who perform poorly on measures of academic progress. While there is temptation and some logical support to infer a causal relationship among these variables, this research will not assume causality. Rather, this research seeks to explore the complexity of the relationships between the variables to be examined from both an economic and a sociological perspective. This type of analyses is relevant because accountability policies in Mississippi hold educators accountable for student performance regardless of a student's economic status, the experience and diversity of district teachers, levels of school finance in a district, and levels of public school attendance within a district. Thus, educators in Mississippi (and throughout the United States) serving African American and/or low income students may be held accountable for overcoming existing racial and economic achievement gaps strongly related to the performance of students in all districts in Mississippi. The pilot data suggest that educators in Mississippi are making little progress with children in poverty even in relatively high performing districts. If this data is confirmed in the larger study, there will be strong evidence teachers in Mississippi, as a whole, are not overcoming barriers faced by its socioeconomically challenged students.

The pilot data implies that current accountability policies in Mississippi reward and sanction educators for "results" highly related to economic status. The problem is we do not know enough about the relationship between these variables to ascertain the reasons for the high

correlations and the relative ability of professional educators to positive influence these socially and economically based correlations.

As practicing professionals providing a service through publicly funded institutions, it is appropriate and reasonable for educators to be held accountable for the quality of services provided. Given this assumption, the challenge is to develop accountability policies that accurately assess the quality of service provided. The problem is most educational accountability policies in practice today are based on outcome measures, most commonly standardized tests that fail to discriminate between potential causal variables. In other words, when one look at a test score, one has no way of knowing what portion of the score is a result of factors over which individual or collective professional educators have influence. The result of this is educators are being held accountable for outcomes that may or may not accurately reflect the quality of an individual educator's, or collective educators', quality of practice.

Research Questions

To assess the construct validity of the Mississippi School Accountability System, this research will examine the following research questions:

Central Question: What internal and external district characteristics relate (correlate) to Mississippi school district's QDI rating on the Mississippi School Accountability System?

Sub Questions:

How do teacher characteristics in a school district relate to a district's QDI?

How do school finance characteristics in a school district relate to a district's QDI?

How do socio-economic factors in a school district relate to a district's QDI?

How do social, cultural, and historical factors in a district relate to a district's QDI?

These questions will be explored using an explanatory research design (Creswell, 2008).

Explanatory research is a method of non-causal correlational research that examines the relationship between two or more variables. While causal relationships will not be inferred in this research, it will be assumed that variables independent of classroom teaching and learning to be examined in this research found to highly correlate to a district's QDI, will be an indication of possible construct validity issues within the Mississippi School Accountability System.

The subsequent hypotheses will be used to examine the questions and sub questions:

H₀1: There is no significant correlation between the QDI of each Mississippi school district and average teacher salary in each district.

H₀2: There is no significant correlation between the QDI of each Mississippi school district and the average years of experience of teachers in the district.

H₀3: There is no significant correlation between the QDI of each Mississippi school district and the percent of nationally board certified teachers in the district.

H₀4: There is no significant correlation between the QDI of each Mississippi school district and the teacher diversity index of the district.

H₀5: There is no significant correlation between the QDI of each Mississippi school district and the per pupil expenditure in the district.

H₀6: There is no significant correlation between the QDI of each Mississippi school district and the taxes levied per student in the district.

H₀7: There is no significant correlation between the QDI of each Mississippi school district and of per student level of Title I funding in the district.

H₀8: There is no significant correlation between the QDI of each Mississippi school district and the assessed property value per student in the district.

H₀9: There is no significant correlation between the QDI of each Mississippi school district and the percent of students receiving federal free lunch in the district.

H₀10: There is no significant correlation between the QDI of each Mississippi school district and the attendance index for the district.

H₀11: There is no significant correlation between the QDI of each Mississippi school district and the White Flight Index for the district.

H₀12: There is no significant correlation between the QDI of each Mississippi school district and the number of students attending school in the district.

Limitations

Any generalizations from this study should be made with the knowledge of the following limitations:

1. This research is not generalizable beyond the state of Mississippi because the methods of rating school are different in other states. Regardless, given the potential of this research to expose construct validity concerns with a system that uses criterion-referenced measures to assess educator performance, this research will have some potential power to raise concerns with similar assessment systems in other states.
2. Causal inferences should not be based on the results of this study. While this research does identify predictor (independent) and criterion (dependent) variables, this identification is based on the assumption that the data represented by independent measures existed prior to the state assessments that established the dependent QDI

measure. Nonetheless, the concern previously raised that accountability policies with poor construct validity actually serve to harm low scoring school districts is based on an assumption of complex causality. For example, a low District Attendance Index (meaning a large percentage of 5-18 year old individual living in a district boundary are attending private school, attending out of district, or home schooled) may either cause schools to perform lower because of a loss of resources or loss of potentially high performing students; or, cause parents to remove kids from public schools.

3. This study will utilize Pearson product-moment correlation analysis as a technique for understanding the complex relationships among a large number of independent variables, the large number of independent variables (12) examined in this research, makes it difficult to understand the multiple possible relationships between the variables.

Definitions

Adequate Yearly Progress (AYP) is continuous and substantial yearly improvement of each school and local education agency sufficient to achieve the goal of all children meeting the state's proficient and advanced levels of achievement and is sufficiently rigorous to achieve the goal within an appropriate timeframe (Goertz, 2001).

Content validity is the quantitatively based judgment of all the aspects of the measurement process that can affect the obtained data of an assessment instrument are relevant to and representative of the targeted construct for a particular assessment purpose (Haynes et al., 1995).

Construct validity is established by presenting correlations between a measure of a construct and a number of other measures associated with or independently of it. The aim of construct validity

is to establish a relationship to other variables with it should be associated positively, negatively, or not at all (Westen & Rosenthal, 2003).

Elementary and Secondary School Act (ESEA) is the federal legislation designed to address the inequities in education. The law was intended to meet the special educational needs of children of poverty who typically performed poorly in school.

Mississippi Curriculum Tests (MCT) are the end of course criterion referenced tests given to students in grades 3 through 8 in mathematics and language arts. These test results are used to determine QDI in grades 3-8 (MDE, 2002).

National Assessment of Educational Progress - The National Assessment of Educational Progress (NAEP) is a congressionally mandated project under the U.S. Department of Education's National Center for Education Statistics that collects and reports student performance in the United States. Commonly referred to as the nation's report card, NAEP includes information on reading, mathematics, science, writing, history, and geography for elementary and secondary school students who attend both public and private school (<http://www.education/national-assessment-of-educational-progress>).

No Child Left Behind (NCLB) - is the reauthorized Elementary and Secondary Education Act that was enacted in 2001 as the Improving the Academic Achievement of the Disadvantage Act as part of Public Law 107-110 (NCLB, 2002)

Sample group - is made up of selected members of a defined population who represents that population (Gall, Gall, & Borg, 2007).

Socioeconomic Status (SES) is the hierarchical rank of an individual in a community or society. SES includes characteristics such as educational attainment, occupation of parent, place of

residence, and community standings. SES also includes simple assets which include money, wealth, home ownership, and property ownership. High SES refers to the upper quarter, middle SES refers to the two middle quartiles and lower SES refers to the lower quartile (Davis, 2010).

Subject Area Testing Program (SATP) – The battery of tests given to high school students in the areas of Biology I, Algebra I, English II, and U.S. History. Scores are used to compute the QDI at the state level in Mississippi and AYP at the national level.

Quality of Distribution Index (QDI) – is the system used by the state of Mississippi to calculate performance by schools and districts. The equation is: $QDI = \% \text{ Basic} + (2 \times \% \text{ Proficient}) + (3 \times \% \text{ Advanced})$.

Summary of Study

Chapter I introduced the need to examine the validity of Mississippi's School Accountability System and whether the QDI rating system is actually measuring what it designed to measure. Included were a general introduction, statement of the problem, studies that have addressed the problem, significance of the study, purpose of the study, limitations, and definition of terms. In Chapter II the related research literature presented and discussed. Chapter III provides details of the research design, including the population, and methods of data collection, and methods of data analysis. Chapter IV will include the presentation of the findings from the data gathered by the researcher. Chapter V will conclude this research with a summary of the findings, discuss policy implications of the findings, articulate how the research adds to the body of knowledge on statewide educator performance systems, and make recommendations for further research.

CHAPTER II

Literature Review

Chapter two examines related research and literature on the use of end of course tests as the major tool to determine school, district, and/or teacher effectiveness in providing educational attainment. This chapter surveys literature that included socioeconomic status and its impact on student attainment and how it further impacted an accountability system. There is a body of literature presented that relates to the use of student test scores to determine how effective a teacher has been at imparting knowledge and preparing students to be college ready. The purpose of this chapter is to examine the literature related to student and school success and the factors which lead to success or failure. Although different, most of the research was analogous when discussing outcomes, using standardized test scores as the major basis for student success, school ranking, or levels assigned to districts. Chapter II discusses research from the international, national, state, and local levels to get varying viewpoints of how student test data has been used to determine effectiveness of educational professionals and whether this is a measure of student attainment or determined by the demographics of the school or district.

School Performance Level

Ranking Schools by performance levels is not a new concept. As early as the nineteen seventies, the Singapore government started to transform secondary education by developing Special Assistance Plan Schools, independent schools and autonomous schools in the nineties (Cheo, 2009). Cheo added that newspapers started printing the top 50 Special/Express schools

in the Special/Express stream and the top 40 Normal schools. The people of England are more accustomed to “league tables,” which are based on test scores that are published annually (Leckie & Goldstein, (2009). These tables are printed to inform parents of the best secondary schools. These two nations are examples of policies based on performance levels, and school rankings. These nations are an indication of how the education environment has moved toward rating schools, teachers, and districts.

Marc Tucker (2011), in his book “Surpassing Shanghai,” concentrated on what high performing states and nations did to drastically improve education. In the 2009 Programme for International Student Assessment (PISA) data, Shanghai outperformed all nations in reading by 20 points, in math by almost 30 points, and in science by more than 20 points. Tucker identified the factors that made the most important contributions to their superior academic attainment. Tucker points to equitable funding, additional resources for needy students, competitive teacher pay, high quality preparation, professional learning communities, and a curriculum focused on problem-solving and critical thinking. Tucker acknowledged that the high achieving nations did not rely on high stakes tests tied to rewards or punishment of students, teachers, and/or schools. Tucker declared that the knee-jerk reaction to establish charter schools, alternative routes to teaching, and firing teachers whose scores are lowest were not a part of any of the high performing nations educational system. Tucker concluded that Mississippi, the United States, or any other group interested in increasing educational attainment for all children should replicate what works and not what one thinks will work.

In a quantitative study of the New Hampshire school rankings (Toutkoushian, & Curtis, 2005), researchers sought to show how school rankings would be substantially different when

five major factors of SES are taken into account because of the significant relationship between SES and school rankings. These authors took into account data showing strong correlations between student, and thus school outcomes that relate to SES levels. More specifically, they pointed to studies which used statistical models to compare schools with and without the consideration of the school's SES. These authors were concerned that the information obtained from these ratings would be used to discredit or terminate teachers and administrators working in low SES areas for doing a poor job, simply based on the numbers. Data used was taken from all 73 public high schools in New Hampshire supplied by the New Hampshire Department of Education. They used the average mean-scaled score on the tenth grade English and math state tests for the two-year periods of 1999-2000 and 2000-2001 as dependent variables. The percentage of seniors attending a four-year college or university, the percentage of students who enrolled in any postsecondary institution, and the proportion of students who took the Scholastic Aptitude Test (PctSAT) were computed as an average over the two-year period and used as dependent variables. They used three independent variables of which schools have no control: unemployment rate, percentage of adults with at least a bachelor degree, and percentage of students who were eligible for free or reduced-priced meals. Pearson correlations between annual dropout rates, selected outcomes and socioeconomic factors were calculated (Toutkoushian & Curtis, 2005). The z score for each school was computed and the results used in a regression equation to determine the rankings of schools with and with SES being considered. The researchers found that results supported the literature that SES factors have a strong relationship on student and school performance. When the equations using the SES factors were used to rank schools, the overall rankings of schools changed significantly. The school that was ranked #1 by

state rankings became #32 when SES factors were considered, #5 moved to #40, and #6 moved to #62, #21 moved to #7, and a school tied at 22, moved to #2. Significant changes when accounting for when considering SES.

In a study conducted in Illinois, the major goals were to identify significant relationships between school demographic variables and the Illinois Goal Assessment Program (IGAP), assess the ability to control for IGAP achievement score variability, and to determine when controlling for certain variables, stepwise regression analysis could be conducted (Sutton & Soderstrom, 1999). Illinois state test scores for grades three and ten were used to conduct this research. All 3,856 schools in Illinois that reported information for the 1994 tests were used. The information used in this study included the school, district, state, and national levels for student characteristics, instructional setting, district finances, and student performance. A computerized statistical package was used to generate frequency distributions and descriptive statistics for all variables. Other calculations included correlation analyses, bivariate correlations, multiple linear regression, and stepwise multiple regression in an effort to determine which factors were the greatest predictors of achievement scores. Variables included percentage of white students, percentage of low income students, attendance, mobility, dropout, graduation rate, average class size for grade 3 and grade 10, teacher experience, teacher pupil ratio, teacher salary, expenditure per pupil, and IGAP scores. The results of the Illinois study showed Pearson product moment correlations that indicated that as the percentage of whites increased, the IGAP scores increased and that as the percentage of low-income students was associated with a decrease in scores. The strongest relationship was between attendance and achievement, with the relationship going from moderate ($r=.59$ reading, $r=.53$ math) for third graders and strongly correlated at tenth grade

($r=.82$ reading, $r= .72$). Mobility and dropout rates were indirectly related to achievement. High school graduation rates were strongly correlated to achievement and directly related. All other variables were negatively and weakly associated to achievement.

In an effort to analyze the significance of the relationship between student mathematical scores of fourth graders in a low-income county of North Carolina, researchers investigated student achievement scores and how parental involvement, socioeconomic status of parents, and expenditures were related to mathematics achievement (Okpala, Okpala, & Smith, 2001). Data from 4256 students' data from 42 schools were collected during 1995 and 1996. This study included the variables: instructional supplies per pupil expenditure, percentage of students receiving free/reduced-price lunch, and parental volunteer hours per hundred students. The researchers used the average student scale score and the percentage of students in each school that achieved at the proficient level on the state's end of year tests. Their research showed no significant relationship between student mathematical achievement and the amount spent on instructional supplies, nor the number of hours spent volunteering. However, the regression results showed that the percentage of student in free or reduced-price lunch negatively affected math scores.

In England, researchers attempted to show why it is a waste of money when trying to take test data to rank schools without taking into account socioeconomic status of students and schools (Boyle & Bragg, 2009). The researchers took data from 375 state secondary schools from a survey that was conducted in 2005 and used the percentage of pupils eligible for free school meals, percentage of students receiving special education services, and the socioeconomic status of each school as independent variables. Size of school, gender, and religious schools had

to be included in this data because of the large number of schools who were segregated along those lines. These variables were analyzed using multiple regression modeling statistics to determine the variable's significance in predicting outcomes. Regression equations were presented for determining results for English and mathematics. The variables were also tested for multicollinearity to ensure that variables were not too closely related. The researchers concluded that the composition of a school or school type and socioeconomic status of its cohort had a significant influence on test performance. They determined that schools with fewer disadvantaged students by social/cultural circumstances and schools that were allowed to select their students achieved higher test results. The residuals were plotted against the dependent variable, and a normal distribution resulted, which indicated a reliable model. Socioeconomic status was determined to be the major contributing factor to a school's lack of success.

Researchers in China sought to determine the relationship between the socioeconomic status of fifteen-year-old students and student academic performance when they used parents' educational background, occupation, family economic conditions, and other factors to calculate a socioeconomic status index (Xiaofei, & Ke, 2008). This study was relegated to one elementary school in Beijing. These researchers sought to find quantitative differences in performance between student academic gains and family SES. They used ninth grade students and testing results from math and Chinese language. The researchers chose to classify family wealth based on what the family owned. Means were established for math and language. There were a total of 1,919 students included in this research, about evenly split according to gender. These researchers determined that it was better to use the univariate linear regression method to explain the relationship between the academic performance of students and family SES. The researchers

determined that there exists a positive correlation between the students' family SES index and academic performance.

In Australia, the association between academic achievement was studied when both the Australian student and the school socioeconomic status were considered (Perry, & McConney, 2010). They wanted to determine to what degree student achievement increased in a linear fashion as school SES increased. The authors used secondary analysis of the 2003 data from secondary schools' reading and mathematics scores. To determine the student-level SES, they established a composite index of the highest parental occupational status, highest parental educational attainment, and economic and cultural resources in the home. Data was collected from 321 schools, or about 12,500 students. Students were divided into five groups, based on their level of SES. Quintiles cut points were determined on the mean school group SES variable. Twenty-five sub groups were established, which were explained and results presented in several tables. The researchers found that for both reading and mathematics, literacy increased steadily and consistently as school SES increased for each of the student level SES quintiles. The authors reported a moderate relationship between school SES and academic attainment, with the relationship becoming strongly positive as the SES reached the highest quintiles. It was reported that the school groups mattered significantly. They further surmised that the SES context that a student finds him/herself is strongly associated with academic performance across all SES groupings.

In Chile, researchers sought to show measures which produce rankings were very similar to those that would result from simply ordering schools based on their students' socioeconomic characteristics and to determine if the rankings produced by any given measure displayed high

year to year volatility, and thus produced accountability-based rewards that were not better than the results one would achieve in a lottery (Mizala, Romaguera, & Urquiola, 2007). The System of the Ministry of Education of Chile's Learning Outcomes Assessment (SIMCE) is the national test that is given to one grade each year, alternating between fourth, eighth, and tenth graders. A group of 701 schools which included all three grades, 3,331 schools who had fourth and eighth graders, 3840 schools that had eighth graders only, and about 1414 schools with only tenth graders were used in this research sample. Regression equations are developed to help develop a ranking system. The simplest equation only looked at the test scores without consideration of any other factors. The second equation uses a similar equation but sought to account for percentage of SES students. A third equation sought to remove individual background characteristics. School rankings established based on the test scores were very highly correlated to the rankings of schools by SES, with a correlation coefficient of .988. It was shown that simply looking at SES, one could have chosen about 95% of the top schools. It was also determined that there was extreme volatility in this process even when accounting for SES. This data showed that over an eight year period over 80% of schools would have been in the top group at some point, and more than 70% would have been in the top and bottom groups during that period. The regression equations used in the calculations had previously been used in the United States to complete similar studies (Mizala, Romaguera, & Urquiola, 2007).

A meta-analytic review provided a systematic review of the empirical research findings and the impact of socioeconomic status on achievement by examining documents published between 1990 and 2000 (Sirin, 2005). The criteria to be included in this research were SES and academic achievement, statistical quantitative data that could be replicated, sample size evident

and at the k-12 level, published in a professional journal, and used students in the United States. More than 2400 articles were considered but only 58 were selected based on the criteria. The coding procedure, average effect sizes, statistical independence, and fixed and random effect models were all presented as a part of this method. Independent samples in reviews are compared to each other, as are national studies. The overall results of this study reflected a medium level of connection between SES and academic achievement at the student level and a greater degree of association at the school level. These results served to support the findings of most of the research that SES is directly related to student success and school ratings or rankings.

A sample of Oregon students were studied to determine if there was a significant relationship between the Oregon school report card ratings and the schools' socioeconomic rankings. Alternative and private schools were excluded from this study seeing that they were not representative of the state's population. The selected schools are rated on the basis of mobility rate, proportion of economically disadvantaged, proportion of limited English proficient, and attendance rate of students, all of which were used as independent variables in this research. The school rating was the only dependent variable. This study was limited to the 2005-2006 school year. The research used both the univariate regression analysis and a multivariate regression analysis in determining the most significant independent variable. The study supported the literature that advances the perception that a low performing school is directly tied to its low performing SES students. This study showed a strong correlation between a school being ranked or rated at the low end of the Oregon scale and its low SES students. It was further determined that the students' attendance and limited English proficiency rates

produced stronger correlations than the economically disadvantaged, but all showed strong correlations to a school not being successful.

The relationship between student academic achievement and the relationship between a family's social status and student achievement were researched using student data from the state of Louisiana (Caldas, & Bankston III, 1997). Test score data from more than 42,000 tenth graders from the state of Louisiana were used from the 1990 administration of the Louisiana Department of Education. More than 95% of the students who made up the population were either black or white and thus were the only races considered. Special education students test results were not included since the method of testing was significantly different from other students included in the study. Scores from English, social studies and science were used as variables, given that these were the tests taken as tenth graders. The dependent variable was student achievement, which was a composite of all three tests. Independent variables included family poverty status, family social status, peer family poverty, and school level measures of SES. Control variables included race, and school level control variables. Caldas and Bankston found a strong tendency for poor students to attend schools with peers who are excessively poor. The findings supported the importance of taking school characteristics into consideration as significant influences on individual academic achievement.

As noted, rating or ranking schools is not new. The literature review indicated that there are mixed reviews about what causes school failure when test scores are used to determine ratings or rankings. Mississippi only had two districts to reach its highest ranking using 2010 data (Maxey, 2010). The questions linger as to the socioeconomic makeup of these districts and whether other districts would rise to this lofty ranking when SES is considered in the ranking

system. The next section will further explore how student socioeconomic status impacts rankings or ratings.

Teacher Accountability

Fix-the-Teachers is a campaign driven by many facets of the democratic party and virtually all republicans, most education think tanks, nonprofit advocacy organizations, anti-union groups, and many liberal and conservative writers (Barkan, 2011). Barkan reported that reformers' plan to improve teaching and learning based almost solely on a teacher's annual evaluation which is heavily based on student test scores. If the process is not accurate then Barkan pointed to the detrimental effects this could have on the teaching profession by demoralizing teachers and staffs, discouraging potential quality teacher candidates, and narrowing the focus of teachers to the topics to be tested. Most important could be the effect it has on student learning.

Chicago Mayor Rahm Emanuel (Watkins, 2012) emphasized the important thing was student performance on tests and not teachers who were on strike. Emanuel said the important thing was students being able to identify alphabets, reading by third grade, and being able to do basic mathematics by the end of third grade. Mark Naison, Fordham University professor, did not disagree with the importance of knowledge gained by students but countered Emanuel's statement with the idea that rating teachers on student test scores and closing failing schools, students would get a better education was not a correct assumption. Naison agreed putting pressure on teachers to raise student test scores may reduce the performance gap between schools in poor neighborhoods and schools in more affluent neighborhoods. Emanuel and Naison may

disagree but it has become a part of President Obama's and many governors' plan to grade teachers on their students' test scores.

Teacher accountability is being judged more and more by student test scores but questions remain as to whether student test scores can be directly attributed to teacher ability or to other factors of which the teacher has no control. W. James Popham (2007) spoke to the need for instructionally sensitive tests that allow one to distinguish between strong and weak instruction by allowing one to validly conclude that a set of students' scores, whether high or low, are directly attributable to teacher instruction. Popham voiced an extremely important point when he questioned the possible frustrations of teachers when they realized that improved instruction did not necessarily lead to improved test scores. Popham further emphasized that poorly conceived accountability tests can seriously reduce teacher quality. Popham discussed curricular aims assessed, clear assessment targets, items per curricular aim, and item sensitivity must each be a part of any valid teacher accountability system. We have to make sure that the tests measure what the teacher has taught and not a measure of what the student brought to school determined Popham.

In a major policy paper, leading research and measurement experts in the field of education argued that teacher motivation is not in evidence because of monetary compensation. In addition, there is no evidence that student learning improves if teachers are evaluated based on student test scores (Baker et al., 2010). They concluded that teacher effectiveness could not be reliably or validly determined when only using student test scores to measure effectiveness. Statisticians, psychometricians, and economists agreed that this is not valid when only using tests to evaluate, even when using Value Added Measures (VAM). Baker et al. concluded that

previous teachers, other current teachers, school attendance, and other out of school experiences or a lack thereof are all factors of which teachers have no control but affect student academic attainment. They concluded that more than 75% of schools identified in the bottom 20% of schools, based on test scores, would not be included in that group if outside of school learning was taken into account. Baker et al. also concluded that the potential consequences of inappropriate use of test-based teacher evaluation system would hurt the teaching profession and thus hurts children.

There is also evidence that teacher accountability, when mostly based on student test scores, impacts or exacerbates the teacher shortage. The number of Californians seeking to become teachers decreased from almost 80,000 in 2001-2002 school year to slightly more than 40,000 in 2008-2009 (Freedberg, 2010). This occurred at the same time that the number of public school students increased by more than 230,000. Not to this degree, but inverse proportions between the number of teacher candidates and student enrollment persists throughout the United States. Freedberg stressed that teacher pay reductions, larger class sizes, increased health care premiums, schools of education forced to reduce numbers because of budget cuts, and teachers having to do more with less has all lead to this shortage. Tyrone Howard (2003) questioned who received the short end of the stick when there is a shortage of teachers. Howard purported that research revealed that low income areas experienced greater teacher shortages than any other type of school. Thus, in schools where teachers are needed most to help underachievers, they lack a full array of qualified teachers. Teacher accountability is not something teachers are against but one has to pay attention to other factors that may be negatively impacted by teacher accountability being based solely on student test scores.

Success beyond Socio-Economic Factors

Although there is much research that indicates that low socioeconomic status is a significant contributor to a student's lack of academic success; there are exceptions. A longitudinal study conducted by Anderson and Keith (1997) asserted ability; quality of schooling, student motivation, and enrollment in academic coursework makes important contributions to the academic success of at-risk students. Anderson and Keith's study is important to this research because it showed what can be accomplished by the low SES student and because it was based on previous theories and research on school learning. The study included over 8000 minority and low socioeconomic status secondary students from across the nation. Tenth grade students with composite SES score that fell within the bottom quartile of the total sample were chosen for the study. One thousand sixteen high schools were chosen and 36 students randomly selected from each. Standardized test data for students included in the study was used from the period of 1980 to 1982. Final results showed the importance of ability as the strongest indicator of low socioeconomic status student success. Another example of schools whose practices and instructional programs impact student learning of low socioeconomic status students to the point where they reflect their more affluent counterparts (Steel, 2009) occurred in California. Steel conducted a study of an Orange County, California School with more than 78% of its population receiving free or reduced priced lunches, yet has exceeded the California Academic Performance Index for each of the past three years. The components of the case study included: a staff survey; administrator and teacher interviews; observations; and a review of documentation. Steele (2009) concluded that leadership was a key component to changing the mindset of the organization and thus improving scores for all students. When teachers and

students were made to feel like they were important, then test scores improved. System wide change was listed as a method to decrease the achievement gap between the low and high socioeconomic status students.

A study was conducted to determine factors that lead to a comprehensive urban high school in California with more than 40% of its students with low SES outperforming schools with significantly lower numbers of at-risk students (Hernandez, 2009). The second reason for this study was to determine the link between student engagement and student achievement in this school which consistently outperformed others. A ten-member team of doctoral candidates was used to collect data over a 14-month period. The school studied was composed of approximately 2300 students with more than 50% of them receiving free lunch. This school was chosen for its diverse population (50% Latino, 25% African-American, and 25% White) and its demographic similarities to other schools in California and because its results on state tests were continually better than schools with less than 20% of its students getting free lunch. An example of the questionnaire was included in the dissertation. The research team created questions that were used to interview each group of stakeholders. The group used Creswell's six steps to data analysis to examine the data. Hernandez (2009) determined that reform efforts, guided by constructivist practices, teacher stability, collegiality, hiring, and retaining quality teachers, a strong curriculum, and innovative practices all led to increased educational attainment. Students believed their teachers and administrators cared about them, the leadership team promoted change, and the students and staff felt safe.

Another example of what can happen to students, a school, and even a district when the right things are changed was exhibited in a study that indicated how a district changed when it

integrated high-quality early learning across the system as part of a comprehensive reform plan (Marietta, 2010). Almost 32 thousand elementary students in a school district in Maryland achieved outstanding academic results although it is composed of 90% minority students, 29% English language learners, and 51% of its students are eligible for free lunch. This author showed how this district studied the data that related to its past and established five goals to help change the deficiencies that were evident. They aligned early learning programs with the integrated K-12 strategies and lengthened the school day for Head Start and Preschool students. Marietta concluded that the percent of third graders reading at the proficient level or higher increased almost 20 percentage points for African-Americans and Hispanics while whites and Asian Americans increased almost 15 percentage points. Marietta's research showed how carefully orchestrated change can impact learning of all groups.

Change is not the enemy, but change without proper research and the willingness to employ the necessary changes can be disastrous. This is not a disaster the education community can afford. We must learn from schools, states, and countries that have put in place a system that moves all children forward. This section has noted success stories. We must take the "best practices" from these success stories and compare them to those countries that have excelled in the education arena in an effort to improve learning.

Summary

In Chapter II, the literature on school, teacher, and district accountability was examined on the international, national, and state level. Particular attention was paid to how rankings would change as socioeconomic factors were accounted for in the regression equations or other methods. Any state considering establishing or changing an accountability system has to

consider factors mentioned throughout this chapter if they want to be fair. When considering teacher accountability, the research showed the significant impact teacher termination based on scores alone could have on education. These factors must be considered when establishing a quality accountability system.

CHAPTER III

Methodology

Introduction

Research is defined by Gall, Gall, and Borg (2007) as inquiry where concepts and procedures are defined so inquiry can be replicated or possibly refuted, errors and bias are minimized, generalizability limits are vividly clear, and results are clear as to how they add to the existing body of knowledge. This chapter provides details of the research design, including the population, sample selection and size, the research design, measurement of dependent and independent variables, the hypotheses questions, and methods of data analysis. The purpose is to provide an overview of the quantitative methods to be used in this research.

Research Design

This quantitative research utilized an explanatory correlation design developed to assess the relationships between a variety of independent constructs and the resulting performance levels of school districts based on student data from state tests in Mississippi. The design features a correlational approach that used Mississippi's school Quality of Distribution Index (QDI) scores from the 2011-12 school year (SY) as a dependent variable to measure the relationship between the independent variables. District teacher characteristics were examined and include average teacher pay, district average years of teacher experience, district percent of National Board Certified teachers, and district teacher diversity. District school finance characteristics are comprised of district per pupil expenditure, district taxes levied per student, and district Title I

funding per student. Included in district socio-economic characteristics are district property assessed value per student and the percent of students receiving free lunch. District social characteristics incorporate district attendance index, district white flight index, and number of students in the district. The data from the combined characteristics will give one an opportunity to see significant, external to school control, factors that either negatively or positively impact student learning.

Population, Sample, and Subjects

School and district's QDI scores were based on SATP and MCT2 data collected annually by the Mississippi Department of Education. QDI data from all public school districts in the state of Mississippi was used; therefore the population for the study was all districts in the state of Mississippi and the sample included 148 districts in the state. Because this research compared school performance to a variety of independent demographic, economic, and social variables, similar relationships may exist between external conditions and school district performance in districts across the nation. This research, however, is not able to make this inferential leap and the results only reflect school districts in Mississippi. This study utilized the SY 2011-2012 QDIs of all Mississippi public school districts as the dependent variable and four categories of independent variables; District Teacher Characteristics; District School Finance Characteristics; District Socio-Economic Characteristics; and District Social, Cultural and Historical Characteristics (See Table 1).

Table 1

Data for Correlation

Independent Variable Category	Independent Variable	Variable Type	Range	Source
District Teacher Characteristic	District Average Teacher Salary	Continuous	36,542 – 48,687	2013 Superintendent's Annual Report Mississippi Department of Education (MDE)
	District Average Years of Teacher Experience	Continuous	(5-20 years)	Mississippi Department of Education
	District Percent of Nationally Board Certified Teachers	Continuous	(0-100)	Mississippi Department of Education
	District Teacher Diversity Index	Continuous	(0-0.5)	Mississippi Department of Education
District School Finance Characteristics	District Per Student Expenditure	Continuous	6,933.81 – 15,195	2013 Superintendent's Annual Report (MDE)
	District Taxes Levied Per Student (District Tax Effort Per Student)	Continuous	(26.69 -74.99 mills)	2013 Superintendent's Annual Report (MDE)
	District Title I Funding Per Student (Level of Federal Funding)	Continuous	0 – 12.000	Joint Legislative Committee on Performance Evaluation and Expenditure Review (PEER)
District Socio-Economic Characteristics	District Property Assessed Value Per Student (District Tax Capacity)	Continuous	4,000 – 14,000	Mississippi Department of Education
	District Percent of Students Receiving Federal Free Lunch (Economically Disadvantaged)	Continuous	(0-.99)	Mississippi Department of Education
District Social Characteristics	District Attendance Index (Level of public school attendance)	Continuous	(0-.99)	Mississippi Department of Education
	District White Flight Index (Level of White Flight)	Continuous	(0-.99)	United States Census (2010)
	Number of students in District (size based on ADA)	Continuous	260.66 – 30,649	2013 Superintendent's Annual Report (MDE)

Independent variables in this study include each district's teacher characteristics. Michele McNeil (2014) spoke of the importance of teachers and having the most effective teachers

educate students with the greatest needs. McNeil argues there is an inequitable distribution of the nation's best teachers. Given the critical role of teachers to the success of the education process, the relationship between broad measures of teacher characteristics within a district and student achievement as measured by district QDI are of interest in this study. While an individual teacher has control over his or her own teaching behavior, there is no control over average teacher salary in the district other than obtaining advanced degrees or becoming National Board Certified, average years of experience in a district, percent of Nationally Board Certified in the district, or the level of diversity among teachers in the district. On the other hand, building and district level administrators do potentially have some control over these variables; however, these broad measures of the characteristics of teachers are also heavily influenced by the history and current social and cultural context of the district. In short, it is assumed in this research the quality of a teaching staff in a district is determined by factors that current administrators have some control and some factors they do not have control.

Although causality is not assumed in this research, teacher characteristics are viewed as the independent variable because these characteristics are assumed to have existed prior to the student assessments used to produce district QDI ratings. Correlating average teacher salary in a district to district QDI, and average teacher experience to district QDI, provides a valuable indication of the construct validity of the Mississippi School Accountability System. If district QDI's are reflected by average teacher salary or average years of experience, this indicates that levels of teacher salary and experience are related to achievement in the district; therefore, a valid accountability system would need to account for this relationship. In a similar line of reasoning, to be a National Board Certified Teacher, a teacher must demonstrate outstanding

teaching ability. The National Board for Professional Teaching Standards (2004) believes its teachers advance the quality of teaching and learning by maintaining meticulous standards for what teachers should know and be able to achieve. Given the high standards for National Board Certification, the percentage of NBC teachers per district may be a factor in student achievement and therefore similar to salary and experience as a variable correlating student achievement.

Another teacher characteristic studied in this research is the relationship between levels of teacher diversity in a school district and district QDI. Research provides evidence of the importance of racial diversity in schools. Ulrich (2011) reported minorities made up less than 20 percent of the teacher work force yet students of color needed teachers of color as role models and students of color do better on a variety of academic outcomes when taught by teachers of color. The Teacher Diversity Index (TDI) was determined by subtracting the number of majority race teachers divided by the total number of teacher from 1. Thus, if a district has 85 percent White teachers, the TDI will be as be .15 ($1 - .85 = .15$); or, if a district has 55 percent African American teachers, the TDI will be .45 as follows ($1 - .55 = .45$).

Although there are many teacher variables that could be examined, the four selected for this research measure a variety of characteristics that may relate to achievement including salary, experience, certification, and diversity. These variables were selected because the data is readily available, they provide a broad picture of a teaching force in a district, and they are variables individual classroom teachers have little control over, and building and a district administrators have limited control over especially in the short run. The relationship between these district teacher variables will provide a better understanding of the ability of the Mississippi School

Accountability System to validly assess the performance of teachers and administrators in Mississippi.

The characteristics of a district's ability and effort to adequately finance schools may also be relevant to the performance of students. School finances are heavily influenced by local and state economic conditions; and, local, state, and federal governing bodies. This research examined the relationship between several financial variables including per student expenditure, district tax levy per student, and levels of federal Title I spending per student. Per student expenditure includes all local, state, and federal funding received to educate each child in a district. For the 2011-12 school year, per student expenditure in Mississippi ranged from a low of \$6933.81 per student in North Pike School District to \$15,195.74 in Montgomery County School District (Mississippi Legislature, PEER Report #587, November 12, 2013). Further, according to the Children's Defense Fund (2011), Mississippi ranked 46th among all states in per pupil expenditure. Given the extreme variation in per student funding across districts and the relatively low level of public school support provided in Mississippi, a high correlation between per student funding and district QDI is an additional source of data that may provide evidence of the validity of the Mississippi Accountability System.

In addition to overall funding, a district's millage rate is a measure of the local tax effort in financing public schools. Mississippi school districts may tax its local citizenry at a maximum rate of 55 mills (MS Code 37-57-104). The amount of mills is left to the discretion of local school boards but significantly impact a district's ability to fund its schools. Total levels of local funding provided schools districts is a function of the assessed mill rate and the total tax capacity of the district (total assessed property values). Federal funding also has an impact on student

funding and the major source is Title I (Scott, 2011). Title I was established as a part of the Elementary and Secondary Schools Act (ESEA, 1965) to improve educational attainment in schools with high concentrations of economically disadvantaged students. These variables combine to provide an overview of school finance which includes spending per student, local tax effort, and level of federal support. As a group, these variables provide an indication of the level to which characteristics of school financing relate to district QDI scores. For this research, it is assumed a high correlation between finance characteristics and QDI would raise further concerns of the validity of the Mississippi School Accountability System to accurately measure the performance of teachers and school leaders.

We know from research (Zeisler, 2012) socio-economic factors impact student outcomes. The percent of students receiving free lunch was used in this research as a measure of the overall socio-economic level of students in each district. This variable was correlated to district QDI's to determine the relationship between student economic conditions and district QDI scores. The assessed value per student in each district, a level of overall economic activity and wealth per student in a district, was a second socio-economic measure to be correlated to district QDI to determine the relationship between the wealth of a district and district QDI.

The final area of focus for this research is historically situated in social, cultural, and political conditions in Mississippi. It is assumed current racial and economic demographic characteristics of school districts are a product of racial and economic conditions and events in Mississippi's past. Specifically, over 50 years of racial segregation of public schools in Mississippi beginning with the US Supreme Court's *Plessy v. Ferguson* (*Plessy v. Ferguson*, 1896) in 1896 declaring equal segregation constitutional and ending with the *Brown v. Board of*

Education (Brown v. Board, 1954) decision in 1954, was followed by a tumultuous period of integration imposed externally by federal courts following the Brown decision and the Civil Rights Act of 1964 (Civil Rights Act of 1964, 1964). These events led to the creation of a large number of private schools in Mississippi, so called “segregationist academies” (Nevin & Billis, 1976) during the 1960s and 70s. Regardless of the term, segregation of many school districts in Mississippi failed because communities essentially created an alternative “private” school system that served primarily white and economically privileged students. The effects of these historical decisions are evident in the demographic characteristics in many Mississippi districts. There are over 25 (Southernecho, 2010) districts in Mississippi with over 95% of the student population African American and 90% or more of students living in poverty. Clearly, the entire population within these district’s boundaries are not reflected in the demographic characteristics of the students. The question of concern for this research is whether current demographic conditions represented by differences in demographic characteristics of people living within a school district’s boundary and the characteristics of students attending a school district are related to the performance of the district. Two variables were used to measure the level of this relationship, a district attendance index and a district white flight index.

District attendance indexes were calculated for each district by dividing the number of students in district schools by the number of 5-17 year old individuals living within the district boundaries. Thus, a district with 500 students attending its schools and 600, 5-18 year old individuals living within the district’s boundary would have an attendance index of .833 ($500/600 = .833$). White Flight Indexes (WFI) was calculated for each district by dividing the percent of white students in the district by the percent of white individuals living within the

district's boundary. For example, a district with a white student percentage of 40 percent and a white population living within the district's boundary of 60 percent would have a White Flight Index of .67 ($.4/.6 = .67$)¹. In addition to these two measures, the size of school districts is another social, cultural, and political variable relationship examined in this research. Districts in Mississippi serving students from kindergarten through graduation range from a size of 260 in the Benoit School District to 30,649 in Desoto County School District (Superintendent's Annual Report, 2013). The average district size in Mississippi is 3,031 (2011-12, PEER Report #578). A high correlation of any of these three variables to QDI will provide evidence of construct validity problems with the Mississippi Accountability System based on relationships between social conditions within a district and the performance of students as measured by the QDI.

Data Analyses

The primary method for studying construct validity traditionally involves patterns of correlations among scores believed to measure similar or dissimilar constructs (Campbell & Fiske, 1959; Cronbach, 1957, Strauss & Smith, 2009). This research is built on the assumption the Mississippi School Accountability System as it was structured and operated during SY 2011-2012, utilizes district QDI scores as a measure of the quality of professional performance of district teachers and administrators. Thus, the district level independent variables examined in this research are viewed as dissimilar constructs from QDI as they are seen to be unrelated to profession performance. As a result, for district QDI scores to validly measure the performance of professional educators in a district, there should be little or no correlation between dependent and independent variables examined in this research.

¹ Note: The District Attendance Index and the White Flight Index are both inverse relationships, lower numbers for the District Attendance Index indicate a higher level of non-public or out-of-district school attendance, and a lower White Flight Index indicates a higher level of white flight from the district.

Data from this research was analyzed using Pearson product-moment correlation analysis. According to Gall, Gall, and Borg (2007). For this research, the 12 variables defined as district characteristics teachers and administrators have little or no control over are viewed as the predictor variables. District QDI scores are viewed as the criterion or dependent variable. While this is not a predictive study, the predictor variables are appropriate because the conditions measured are assumed to have existed prior to the assessments which determined each districts QDI. Pearson Product-moment correlation is a valuable statistical tool because “it provides estimates both of the magnitude and statistical significance of relationships between variables” (Gall, Gall, and Borg, 2007, 353).

The following null hypotheses were examined using Pearson Product-moment correlation:

H₀1: There is no significant correlation between the QDI of each Mississippi school district and average teacher salary in each district.

H₀2: There is no significant correlation between the QDI of each Mississippi school district and the average years of experience of teachers in the district.

H₀3: There is no significant correlation between the QDI of each Mississippi school district and the percent of nationally board certified teachers in the district.

H₀4: There is no significant correlation between the QDI of each Mississippi school district and the teacher diversity index of the district.

H₀5: There is no significant correlation between the QDI of each Mississippi school district and the per pupil expenditure in the district.

H₀6: There is no significant correlation between the QDI of each Mississippi school district and the taxes levied per student in the district.

H₀7: There is no significant correlation between the QDI of each Mississippi school district and of per student level of Title I funding in the district.

H₀8: There is no significant correlation between the QDI of each Mississippi school district and the assessed property value per student in the district.

H₀9: There is no significant correlation between the QDI of each Mississippi school district and the percent of students receiving federal free lunch in the district.

H₀10: There is no significant correlation between the QDI of each Mississippi school district and the attendance index for the district.

H₀11: There is no significant correlation between the QDI of each Mississippi school district and the White Flight Index for the district.

H₀12: There is no significant correlation between the QDI of each Mississippi school district and the number of students attending school in the district.

Procedures

The researcher utilized the Mississippi Department of Education's website, www.mde.k12.ms.us, to collect SATP and MCT data. The United States Department of Education's website, <http://www.ed.gov/>, was used to collect demographic information. Census data was collected using the 2010 census, http://proximityone.com/s&o/profiles/040_28_s&o_profile.htm, and other U.S. census sites. The researcher used other sites to collect data re to the constructs being used in this research.

Summary

The methods used in the collection and analysis of data for this research was described in this chapter. Dependent variable data (QDI scores) from SY 2011-2012 was collected from 148 school districts in the state of Mississippi. Data for the independent variables was collected for each district. A description and rationale for each of the twelve independent variables is provided. Following data collection, correlations between the variables were calculated using Pearson Product-moment correlation. The explanation of the variables was followed with the hypotheses tested with this research.

CHAPTER IV

Data Analysis

The validity of using results from state tests to determine how schools should be rated was investigated. The major question was whether the Mississippi Statewide Accountability System (MSAS), which uses the Quality of Distribution Index (QDI) to rank schools, is an accurate measure of the quality of educational services districts provide students. This chapter presents data in response to the central questions for this study: What internal and external district characteristics relate (correlate) to Mississippi school district's QDI rating on the Mississippi Statewide Accountability System? In addition, four sub-questions are addressed:

- How do teacher characteristics in a school district relate to a district's QDI?
- How do school finance characteristics in a school district relate to a district's QDI?
- How do socio-economic factors in a school district relate to a district's QDI?
- How do social, cultural, and historical factors in a district relate to a district's QDI?

The results indicate a significant positive or negative relationship between a districts' QDI and all but one of the characteristic variables measured. The correlations range between weak and moderately strong. These results provide robust evidence of issues with the construct validity of the MSAS.

Validity is generally defined as the extent to which a scale measures what it alleges to measure. Validity is critically important when using any measurement tool, but when an assessment system uses test scores to rate or rank the quality of schools, districts, administrators,

or teachers, invalid measures may negatively impact the professional careers of educators and the ability of educators to improve the quality of education children receive. In Mississippi, the Mississippi Statewide Accountability System (MSAS) was developed to assess the academic achievement level of elementary and secondary students in schools and districts across the state. While MSAS is used for its designed purpose to assess academic performance, subsequent state policies also use MSAS to make judgments related to the professional performance of educators in districts and schools across the state. Specifically, the MSAS is used to rate each teacher, school, and district in the state on an A-F scale, and for schools and districts, ratings are made publically available. The result is educators in schools and districts labeled “D” or “F” are often viewed as having failed in the performance of their professional duties. This labeling occurs even though there was no evidence validating the use of the MSAS instrument as a measure of teacher or administrator performance.

The purpose of this research was to assess the construct validity of the SY 2011-2012 version of the Mississippi Statewide Accountability System. A measurement with high construct validity evaluates the magnitude of all the characteristics and only the characteristics of the construct it is professed to assess (Peter, 1981). This research examined the relationship between the Quality of Distribution Index (QDI), a measure of overall student academic performance of school districts in Mississippi, and a range of possible covariates. The possible covariates are divided into four categories, including socio economic characteristics, teacher characteristics, school finance characteristics, and social historical characteristics of each district. A score for district’s QDI ratings as a dependent variable to examine construct validity inferences assumed in state policy initiatives. The data analyzed identified correlations between community and each

characteristic was identified for 148² public school districts in Mississippi for SY 2011-2012. The purpose was to examine the relationship among these independent variables and school characteristics and performance outcomes. While QDI is the dependent variable, the research examined relationships among variables with no assumption or attempts to identify causation.

Null Hypotheses and Statistical Tests

The central question for this research was: What internal and external district characteristics relate (correlate) to Mississippi school district's QDI rating for the SY 2011-2012 Mississippi Statewide Accountability System? The following null hypotheses were used to identify the level of relationship between teacher, finance, socio-economic, and historical contexts in each district to the district's QDI:

H₀1: There is no significant correlation between the QDI of each Mississippi school district and average teacher salary in each district.

H₀2: There is no significant correlation between the QDI of each Mississippi school district and the average years of experience of teachers in the district.

H₀3: There is no significant correlation between the QDI of each Mississippi school district and the percent of nationally board certified teachers in the district.

H₀4: There is no significant correlation between the QDI of each Mississippi school district and the teacher diversity index of the district.

² Four districts in SY 2011-2012 were either special districts agricultural high schools or a very small district in the process of merging with a larger district. These districts did not have full data sets for the independent variables; thus, data from these districts was not analyzed for this research.

H₀5: There is no significant correlation between the QDI of each Mississippi school district and the per pupil expenditure in the district.

H₀6: There is no significant correlation between the QDI of each Mississippi school district and the taxes levied per student in the district.

H₀7: There is no significant correlation between the QDI of each Mississippi school district and of per student level of Title I funding in the district.

H₀8: There is no significant correlation between the QDI of each Mississippi school district and the assessed property value per student in the district.

H₀9: There is no significant correlation between the QDI of each Mississippi school district and the percent of students receiving federal free lunch in the district.

H₀10: There is no significant correlation between the QDI of each Mississippi school district and the attendance index for the district.

H₀11: There is no significant correlation between the QDI of each Mississippi school district and the White Flight Index for the district.

H₀12: There is no significant correlation between the QDI of each Mississippi school district and the number of students attending school in the district.

The results 11 of the 12 null hypotheses indicate a statistically significant relationship between districts' QDI scores and the contextual variables used in the research. No evidence of a correlation was found for null hypothesis eight which tested for a relationship between assessed property value per student in the district and the QDI of the district.

District Teacher Characteristics

The first four null hypotheses measured the relationship between district teacher characteristics and district QDI ratings. Means and standard deviations for district teacher characteristics are provided in Table 2.

Null hypothesis one assumed there is no significant correlation between the QDI of each Mississippi school district and average teacher salary in the district. Table 3 provides the results of the correlation between district QDI and average teacher salary used to test this null hypothesis. The research used average district teacher salary data from the 2013 Mississippi Superintendent's Annual Report (2013) which reported data from SY 2011-2012. The average district salary ranged from \$37,565 in the Quitman County School District to \$48,687 in the Biloxi Public School District. Salary differences for teachers are, for the most part, a function of several factors: years of experience, academic degree level (bachelor's, master's, specialist's, or doctorate), and the level of district supplement. The results of the correlation of the average teacher salary and QDI from 148 school districts in Mississippi for SY 2011-2012 resulted in Pearson $r = .382$, Sig. (2-tailed) at $.000$. Thus, the null-hypothesis is rejected. There is a significant positive correlation between QDI and average teacher salary among Mississippi school districts. According to Dancey & Reidy (2004), a correlation between $.3$ and $.7$ is a "moderate relationship" indicating some interconnection between variables.

Null hypothesis two assumed there is no significant correlation between the QDI of each Mississippi school district and the average years of teaching experience of teachers in the district. Table 4 provides the results of the correlation between district QDI and average teacher experience used to test this null hypothesis. The research used a list of all teachers in each school

Table 2

Descriptive statistics for district QDI and district teacher characteristics

	Mean	SD	N
Quality of Distribution Index	154.92	24.299	148
Average Teacher Salary (dollars)	41,486	2089	148
Average Teacher Experience (years)	11.82	1.98	148
Percent of NBCT	6.4	5.24	148
Teacher Diversity Index (.0-.5)	.193	.146	148

Table 3

Correlation between district QDI and mean teacher salary

		QDI	Mean Teacher Salary
QDI	Pearson <i>r</i>	1	.382**
	Sig. (2-tailed)		.000
	N	148	148
Mean Teacher Salary	Pearson <i>r</i>	.382**	1
	Sig. (2-tailed)	.000	
	N	148	148

district and the corresponding number of years of experience acquired from the Office of Public Reporting of the Mississippi Department of Education (Haynes, email, Feb 19, 2015). The data was checked to make sure no name was duplicated. The remaining list was used to determine the

average number of years of teacher experience in each district. Average years of experience ranged from 8.03 in Durant to 21.4 in Montgomery County. The results of the correlation of the average years of teacher experience and QDI from 148 school districts in Mississippi for SY 2011-2012 resulted in Pearson $r = .375$, Sig. (2 tailed) of .000. Thus, the null-hypothesis is rejected. There is a significant positive correlation between QDI and average years of experience among Mississippi school districts. The correlation is rated as “weak” (Dancey & Reidy, 2004). The result indicates a “weak relationship” with limited interconnectivity between teaching experience and QDI. On average, across Mississippi, districts with more senior teaching staffs perform slightly better.

Null hypothesis three asserts there is no significant correlation between the QDI of each Mississippi school district and the percent of Nationally Board Certified Teachers (NBCT) in the district. Table 4 provides the results of the correlation between district QDI and percent of

Table 4

Correlation between district QDI and average teacher experience (N = 148, $\alpha = .05$)

		QDI	Mean Teacher Experience
QDI	Pearson r	1	.375**
	Sig. (2-tailed)		.000
	N	148	148
Mean Teacher Experience	Pearson r	.375**	1
	Sig. (2-tailed)	.000	
	N	148	148

Null hypothesis three asserts there is no significant correlation between the QDI of each Mississippi school district and the percent of Nationally Board Certified Teachers (NBCT) in the district. Table 5 provides the results of the correlation between district QDI and percent of NBCTs. The number of NBCTs for each district in SY 2011-2012 was obtained from the Children's First Annual Report (2012) provided by the Mississippi Department of Education for each school district. The percent for each district was determined by dividing the number of board certified teachers by the total number of teachers per district. The range of NBCTs was from zero percent in several districts to 19.33 percent in the South Tippah School District. National Board Certification in Mississippi is encouraged by providing a six thousand dollar supplement per year to NCBTs. The state also provides incentives to banks for providing funding for teachers to complete National Board Certification testing which surpasses the two thousand dollar mark. There is some data that points to students of NBCT's students outperforming the students of their noncertified counterparts (Vandevooort & Berliner, 2004) which provides rationale for providing extra funding. The results of the correlation of the percent of NBCTs and QDI from 148 school districts in Mississippi for SY 2011-2012 resulted in Pearson $r = .609$, Sig. (2-tailed) of .000. Thus, the null-hypothesis is rejected. There is a significant positive correlation between QDI and percent of Nationally Board Certified Teachers among Mississippi school districts. This result indicates a correlation at the high end of the "moderate relationship"

Table 5

Correlation between district QDI and NBCT's (N = 148, $\alpha = .05$)

		QDI	Percent NBCTs
QDI	Pearson <i>r</i>	1	.609**
	Sig. (2-tailed)		.000
	N	148	148
Percent NBCTs	Pearson <i>r</i>	.609**	1
	Sig. (2-tailed)	.000	
	N	148	148

(Dancey & Reidy, 2004) range between the percent of NBCTs in a district and the district's QDI rating. Given the assumption of indeterminate causality with this research, it remains unclear if high performing districts are prone to encourage more teachers to participate in NBCT, or if more NBCT teachers increases performance; nonetheless, the relationship between QDI and percent of NBCTs is robust.

Null hypothesis four asserts there is no significant correlation between the QDI of each Mississippi school district and the teacher diversity index of the district. Table 6 provides the results of the correlation between district QDI and district teacher diversity index. Teacher diversity, for this research, is defined as one minus the percent of majority race teachers, thus the teacher diversity will range from 0 to .50. The race of teachers was provided by the Office of Public Information of the Mississippi Department of Education for SY 2011-2012 (J.C. Haynes, email communication, Feb 19, 2015). The results of the correlation between teacher diversity and QDI from all 148 school districts in Mississippi for SY 2011-2012 resulted in a Pearson $r = -.684$, Sig. (2 tailed) of .000. Thus, the null hypothesis is rejected. There is a significant negative correlation between QDI and Teacher Diversity Index among Mississippi school

Table 6

Correlation between district QDI and teacher diversity (N = 148, $\alpha = .05$)

		QDI	Teacher Diversity Index
QDI	Pearson <i>r</i>	1	-.684**
	Sig. (2-tailed)		.000
	N	148	148
Teacher Diversity Index	Pearson <i>r</i>	-.684**	1
	Sig. (2-tailed)	.000	
	N	148	148

districts. The strength is based on the absolute value of the Pearson *r*, and thus Creswell (2008), would call this a very good correlation. Thus, as the level of diversity among district teaching staffs increases, the districts tend to have a lower QDI. As with percent of board certified teachers, this relationship, albeit negative, is robust.

District Finance Characteristics

Null hypotheses five through seven measured the relationship between district finance characteristics and district QDI ratings. Means and standard deviations for district finance characteristics are provided in Table 7.

Null hypothesis five assumes there is no significant correlation between the QDI of each Mississippi school district and the per pupil expenditure in the district. Table 8 provides the results of the correlation between district QDI and per pupil expenditure. The total per pupil expenditure in each district was garnered from the PEER (2012). The results of the correlation

Table 7

Descriptive statistics for district QDI and district teacher characteristics

	Mean	SD	N
Quality of Distribution Index	154.92	24.3	148
Per Pupil Expenditure (dollars)	9469	1659	148
Within District Taxes Levied per Pupil (dollars)	2576	1102	148
Per Pupil Federal Funding (dollars)	2039	1011	148

Table 8

Correlation between district QDI and per pupil expenditure (N = 149, $\alpha = .05$)

		QDI	Per Pupil Funding
QDI	Pearson <i>r</i>	1	-.390**
	Sig. (2-tailed)		.000
	N	148	148
Per Pupil Funding	Pearson <i>r</i>	-.390**	1
	Sig. (2-tailed)	.000	
	N	148	148

per pupil expenditure among Mississippi school districts. This “moderate” (Dancey & Reidy, 2004) negative correlation must also be viewed with no assumption of causality. It is not clear if

the relationship is an indication of low performing districts receiving additional resources through programs such as Title I, or if additional resources are somehow leading to lower performance.

Null hypothesis six assumes there is no significant correlation between the QDI of each Mississippi school district and the taxes levied per student in the district. Table 9 provides the results of the correlation between district QDI and per pupil expenditure. This data was collected from the State Superintendent's Annual Report (2013). Taxes levied per student at the district level are based on the millage rate per district established by the local School Board, total assessed property value in the district, and the number of students in the district. Thus this variable is a measure of a combination of the wealth of the district and the tax effort (Cohn & Geske, 2004) in the district. Taxes levied per student were determined by dividing the total assessed property value of the district by the number of students multiplied by the millage rate for the district. The results of the correlation of taxes levied per student and QDI from 148 school districts in Mississippi for SY 2011-2012 resulted in a Pearson $r = .202$, Sig. (2 tailed) of $.007$. Thus the null hypothesis is rejected. There is a significant "weak" (Dancey & Reidy, 2004) correlation between QDI and taxes levied per student at the district level.

Null hypothesis seven assumes there is no significant correlation between the QDI of each Mississippi school district and of the per-student level of federal funding in the district. Table 10 provides the results of the correlation between district QDI and per pupil expenditure. Federal funding is provided to districts based on the percent of students who live below the poverty level within a school district primarily through federal Title I programs (Irwin, 1992).

Table 9

Correlation between district QDI and taxes levied per student (N = 149, $\alpha = .05$)

		QDI	Taxes Levied Per Student
QDI	Pearson <i>r</i>	1	-.162*
	Sig. (2-tailed)		.05
	N	148	148
Taxes Levied Per Student	Pearson <i>r</i>	-.162*	1
	Sig. (2-tailed)	.05	
	N	148	148

Table 10

Correlation between district QDI and federal funding per pupil (N = 149, $\alpha = .05$)

		QDI	Federal Funding Per Student
QDI	Pearson <i>r</i>	1	-.625**
	Sig. (2-tailed)		.000
	N	148	148
Federal Funding Per Student	Pearson <i>r</i>	-.625**	1
	Sig. (2-tailed)	.000	
	N	148	148

The amount of federal funding was acquired from the Children's First Annual Report for SY 2011-2012. The results of the correlation between per student level of federal funding and QDI from 148 school districts in Mississippi for SY 2011-2012 resulted in a Pearson $r = -.625$, Sig. (2-tailed) of .000. Thus the null hypothesis is rejected. There is a significant "moderate" (Dancey & Reidy, 2004) negative correlation between QDI and per student level of federal funding in Mississippi school districts. Higher performing districts tend to receive lower levels of federal funding.

District Socio-Economic Characteristics

Null hypotheses eight and nine measured the relationship between district socio-economic characteristics and district QDI ratings. Means and standard deviations for district socio-economic characteristics are provided in Table 11.

Null hypothesis eight assumes there is no significant correlation between the QDI of each Mississippi school district and the assessed property value per student in the district. Table 12 provides the results of the correlation between district QDI and assessed property value per district. Assessed property value is a measure of overall wealth in a school district. This data was obtained from the State Superintendent's Annual Report of 2013. The assessed property value

Table 11

<i>Descriptive statistics for district QDI and district socio-economic characteristics</i>			
	Mean	SD	N
Quality of distribution index	154.92	24.30	148
Assessed Property Value/Pupil (dollars)	51,137	21,534	148
Student Poverty Level (percent)	77.8	15.36	148

per student was calculated as the product of assessed property value divided by the number of students in the district. The results of the correlation between assessed property value per student in the district and QDI from 148 school districts in Mississippi for SY 2011-2012 resulted in a Pearson $r = .082$, Sig. (2 tailed) of .321. Thus there is insufficient evidence to reject

the null hypothesis. There is insufficient evidence of a correlation between QDI and assessed property value per student among Mississippi school districts.

Table 12

Correlation between district QDI and assessed property per pupil (N = 149, $\alpha = .05$)

		QDI	Assessed Property Value Per Student
QDI	Pearson <i>r</i>	1	.082
	Sig. (2-tailed)		.321
	N	148	148
Assessed Property Value Per Student	Pearson <i>r</i>	.082	1
	Sig. (2-tailed)	.321	
	N	148	148

Hypothesis nine assumes there is no significant correlation between the QDI of each Mississippi school district and the percent of students receiving federal free or reduced priced lunch in the district. Table 13 provides the results of the correlation between district QDI and assessed property value per district. The percent of students receiving free lunch was obtained from the Children’s First Annual Report for SY 2011-2012. A significant number of school districts are listed at the 95 percent level because the state department does not list districts surpassing that level so as not to identify any students. It is possible some districts approach the one hundred percent level for free and reduced lunch but the research is based on the most accurate data available. The results of the correlation between percent of students receiving federal free lunch per district and QDI from 148 school districts in Mississippi for SY 2011-2012 resulted in a Pearson $r = -.850$, Sig. (2 tailed) of .000. Thus the null hypothesis is rejected. There is a significant correlation between QDI and the percent of students receiving federal free

or reduced priced lunch among Mississippi school districts. Creswell (2008) considers correlations in this range to be very high. While this is not a study that predicts causation, the correlation is high enough to predict with a high degree of certainty the QDI level a school district in Mississippi will achieve, simply based on the percentage of students receiving free lunch.

District Social, Cultural, and Historical Characteristics

Null hypotheses ten through twelve measured the relationship between district social, cultural, and historical characteristics and district QDI ratings. Means and standard deviations for social, cultural, and historical characteristics are provided in Table 14.

Table 13

Correlation between district QDI and percent of students receiving free lunch (N = 149, α = .05)

		QDI	Percent of Students Receiving Free Lunch
QDI	Pearson <i>r</i>	1	-.850**
	Sig. (2-tailed)		.000
	N	148	148
Percent of Students Receiving Free Lunch	Pearson <i>r</i>	-.850**	1
	Sig. (2-tailed)	.000	
	N	148	148

Hypothesis ten assumes there is no significant correlation between the QDI of each Mississippi school district and the attendance index for the district. Table 15 provides the results of the correlation between district QDI and the district attendance index. The district attendance index is a measure of the percentage of school age children living within a district’s boundary who attend public school. The index is calculated by dividing the number of students not

Table 14

Descriptive statistics for district QDI and district social, cultural, and historical characteristics

	Mean	SD	N
Quality of Distribution Index	154.92	24.30	148
District Attendance Index	.029	.534	148
District White Flight Index	.346	.820	148
District Student Attendance	3304	4166	148

attending public school in the district by the number of federal census projected student in the district. The results of the correlation between attendance index of school districts and QDI from 148 school districts in Mississippi for SY 2011-2012 resulted in a Pearson $r = -.247$, Sig. (2 tailed) of .002. Thus the null hypothesis is rejected. There is a significant “weak” (Dancey & Reidy, 2004) negative correlation between QDI and the attendance index among Mississippi school districts. Keeping in mind a low index means a higher percentage of local children attend public school, the slight negative correlation indicates a small relationship between rates of public school attendance and QDI scores. Further, the number of students in some districts actually exceeded federal census projections resulting in a negative index. One explanation is some districts have students attending who may live in other school districts.

Table 15

Correlation between district QDI and student attendance index (N = 149, $\alpha = .05$)

		QDI	Student Attendance Index
QDI	Pearson <i>r</i>	1	-.247**
	Sig. (2-tailed)		.002
	N	148	148
Student Attendance Index	Pearson <i>r</i>	-.247**	1
	Sig. (2-tailed)	.002	
	N	148	148

Null hypothesis eleven assumed there is no significant correlation between the QDI of each Mississippi school district and the white flight index for the district. Table 16 provides the results of the correlation between district QDI and the district white flight index. The white flight index was calculated by dividing the percent of white students attending district schools by the percent of white population living within the district's boundary. The percent of white students within the district was gathered from the Children's First Annual Report for SY 2011-12 and the percent of white population within the district was taken from US Census (CITE) data from 2010. The calculated white flight index should be from zero to one. One would mean all white students within the district are attending the school within the district while zero would mean no white students within the district are attending the public school in that district. The results of the correlation between per pupil expenditure per district and QDI from 148 school districts in Mississippi for SY 2011-2012 resulted in a Pearson $r = -.371$, Sig. (2 tailed) of .000. Thus the null hypothesis is rejected. There is a significant "moderate" (Dancey & Reidy, 2004) correlation between QDI and the white flight index among Mississippi school districts.

Communities where white students attend public school, and thus a low white flight index, tend to have a higher QDI than where they attend separate non-public schools.

Hypothesis twelve assumed there is no significant correlation between the QDI of each Mississippi school district and the number of students attending school. Table 17 provides the results of the correlation between district QDI and the number of students attending the district. This null hypothesis examines the relationship between the number of students in a district and the district’s QDI. The number of students per school district was collected from the State Superintendent’s Annual Report of 2013. The result of the correlation between the number of students attending school districts and QDI from all 148 school districts in Mississippi for SY 2011-2012 resulted in a Pearson $r = .259^{**}$, Sig. (2 tailed) of .001. Thus the null hypothesis is rejected. There is a significant positive “weak” (Dancey & Reidy, 2004) correlation between

Table 16

Correlation between district QDI and white flight index (N = 149, $\alpha = .05$)

		QDI	White Flight Index
QDI	Pearson r	1	-.371**
	Sig. (2-tailed)		.000
	N	148	148
White Flight Index	Pearson r	-.371**	1
	Sig. (2-tailed)	.000	
	N	148	148

QDI and the number of students attending school among Mississippi school districts. The small correlation indicates a slight positive relationship between the size of a district and the district’s QDI score.

Table 17

Correlation between district QDI and total number students (N = 149, $\alpha = .05$)

		QDI	Total Number of Students
QDI	Pearson <i>r</i>	1	.259**
	Sig. (2-tailed)		.001
	N	148	148
Total Number of Students	Pearson <i>r</i>	.259**	1
	Sig. (2-tailed)	.001	
	N	148	148

Collinearity

Gall, Gall, and Borg (2007) define collinearity as: “The overlap between two predictor variables, that is, the extent to which they correlate with each other” (p. 358). While this is not a predictive correlational research study, collinearity is an issue of concern in regard to using a series of independent correlations to assess the validity of an accountability system. In order to understand collinear relationships between the variables used in this research, a cross correlation of all 12 variables was conducted to identify variables with high levels of collinearity with other independent variables. Collinear variables with “moderate” or “strong and high moderate”

Table 18.

Strong and high moderate collinear relationships (Pearson $r > .6$, N = 148, $\alpha = .05$)

Independent Variable One	Independent Variable Two	Person <i>r</i>	Sig. (2-tailed)
Mean Teacher Salary	Mean Teacher Experience	.637	.000
Percent NBCTs	Poverty	-.675	.000
Teacher Diversity Index	Poverty	.679	.000
Per Pupil Expenditure	Federal Funding/Student	.813	.000
Taxes/Student	Assessed Property/Student	.878	.000
Federal Funding/Student	Poverty	.738	.000

Table 19

Moderate collinear relationships (Pearson r between .3 and .6, $N = 148$, $\alpha = .05$)

Independent Variable One	Independent Variable Two	Person r	Sig. (2-tailed)
Mean Teacher Salary	Taxes/Student	.356	.000
Mean Teacher Salary	Federal Funding/Student	-.327	.000
Mean Teacher Salary	Assessed Property Value	.409	.000
Mean Teacher Salary	Poverty	-.381	.000
Mean Teacher Experience	Percent NBCTs	.370	.000
Mean Teacher Experience	Teacher Diversity Index	-.320	.000
Mean Teacher Experience	Federal Funding/Student	-.383	.000
Mean Teacher Experience	Poverty	-.410	.000
Percent NBCTs	Teacher Diversity Index	-.510	.000
Percent NBCTs	Per Pupil Expenditure	-.394	.000
Percent NBCTs	Federal Funding/Student	-.545	.000
Percent NBCTs	White Flight Index	-.415	.000
Teacher Diversity Index	Per Pupil Expenditure	.482	.000
Teacher Diversity Index	Federal Funding/Student	.565	.000
Teacher Diversity Index	White Flight Index	.394	.000
Per Pupil Expenditure	Taxes/Student	.451	.000
Per Pupil Expenditure	Assessed Property/Student	.506	.000
Per Pupil Expenditure	Poverty	.550	.000
Federal Funding/Student	White Flight Index	.325	.000
Federal Funding/Student	Size	-.313	.000
Student Attendance Index	Poverty	.322	.000
White Flight Index	Poverty	.446	.000
Size	Poverty	-.354	.000

correlations are briefly discussed. Table 18 presents variables with a “strong or high moderate” collinear relationship. Table 19 presents variables with a “moderate” collinear relationship.

The results of the cross correlation revealed some “strong” and many “moderate” collinear relationships among the 12 independent variables. There is some logic and possible explanations of these relationships which are discussed in Chapter V. The strongest correlate to QDI was the percent of students receiving free lunch with a Pearson r value of $-.850$. This rating of free and reduced lunch among students in a district had a strong or moderate positive

correlation with levels of federal funding per student, teacher diversity, levels of school age children in the district and not attending their local public schools, and levels of white students living in the district and not attending public schools. Poverty also has a strong or moderate negative collinear relationship with the percentages of NBCT's, average teacher salary, average teacher experience, and number of students in the district. The variable measuring levels of teacher diversity in the district had moderate positive collinear relationship with per pupil expenditure, Title I funding per pupil, percent of NBCT's, and the white flight index. The percent of Nationally Board Certified Teachers also had moderate negative collinear relationships with per pupil expenditure, per pupil Title I funding, and the white flight index. The level of federal funding per pupil had a strong positive correlation to per pupil spending and a moderate negative correlation with the white flight index and the number of students in the district. The strongest collinear relationship found was between assessed property value per pupil and taxes levied per pupil. Additional low moderate and weak collinear relationships were found indicating a complex relationship among multiple contextual variables which combined are shown to have a strong relationship to the Quality of distribution index of individual school districts in Mississippi.

Summary of Results

The results of this research are based on data analyzed using the Pearson product-moment correlation to test 12 null hypotheses assuming no relationship between the QDI of school districts in Mississippi and contextual ratings for each of the 12 independent variables. The Pearson coefficient measures the strength and direction of a linear association between two variables. A Pearson correlation indicates how well individual data points adhere to a regression

line of best fit (Hinkle, Wiersma, & Jurs, 2003). The research used the statistics package SPSS to calculate a Pearson r for all independent variables with the dependent variable. Mean and standard deviations were also calculated for each pair of variables. The results are based on data collected from 148 public school districts in Mississippi in SY 2011-2012. The independent variables were grouped according to district teacher characteristics, district financial characteristics, district socio-economic characteristics, and district cultural, social, and historical characteristics.

The research rejected the null hypothesis for 11 of the 12 independent variables. Table 20 summarizes the results from each independent variable category. In the category of district teacher characteristics, a high moderate positive relationship was found between percent of NBCT's and QDI and high moderate negative relationship was found between the teacher diversity index and QDI. Low moderate positive relations were found between QDI and both average teacher salary and average years of teacher experience.

Among the district financial characteristic variables, a high moderate negative relationship was found between per pupil level of federal funding and QDI. A low moderate negative relationship was found between average per pupil funding and QDI. A low weak positive relationship was found between taxes levied per pupil and QDI.

The results for the district socio-economic characteristic variables were mixed. No significant relationship was found between assessed property value per pupil and QDI. In contrast, a strong negative relationship between percent of pupils receiving federally funded free lunch and QDI was found. Percent of students receiving free lunch was used as a measure of

poverty in this research and it was notable that most of the variables indicating a moderate relationship to QDI have moderate collinear relationships with district poverty levels.

Table 20

Summary results of the 12 null hypotheses tested in the research by category of variable

Category of Variable	Independent Variable	Pearson <i>r</i>	Sig. (2-tailed)	N
District Teacher Characteristics	Average Teacher Salary	.382	.000	148
	Average Years Teacher Exp.	.375	.000	148
	Percent of NBCTs	.609	.000	148
	Teacher Diversity Index	-.684	.000	148
District Financial Characteristics	Per Pupil Funding	-.390	.000	148
	Taxes Levied Per Pupil	.162	.050	148
	Federal Funding Per Pupil	-.625	.000	148
District Socio-economic Characteristics	Assessed Property Value Per Student	.082	.321	148
	Percent Free Lunch (poverty)	-.850	.000	148
District Social, Cultural, and Historical Characteristics	District Attendance Index	-.247	.002	148
	White Flight Index	-.371	.000	148
	Numbers of Students (size)	.259	.001	148

A low moderate negative relationship was found between the white flight index and QDI. A weak negative relationship was found between district attendance index and the QDI, while a weak positive correlation was found between the size of the district (number of students) and QDI.

Table 21 displays each of the independent variables in order of the strength of the correlation. The combination of the relationships to QDI and contextual variables indicate the Mississippi Statewide Accountability System is an invalid instrument to accurately measure the

Table 21

Summary results of the 12 independent variables in order of strength

Correlation Strength	Independent Variable	Pearson <i>r</i>	Sig. (2-tailed)	N
Strong				
	Percent Free Lunch (poverty)	-.850	.000	148
High Moderate				
	Teacher Diversity Index	-.684	.000	148
	Federal Funding Per Pupil	-.625	.000	148
	Percent of NBCTs	.609	.000	148
Low Moderate				
	Per Pupil Funding	-.390	.000	148
	Average Teacher Salary	.382	.000	148
	Average Years Teacher Exp.	.375	.002	148
	White Flight Index	-.371	.000	148
Weak				
	Numbers of Students (size)	.259	.001	148
	District Attendance Index	-.247	.002	148
	Taxes Levied Per Pupil	.162	.050	148
No Significant Correlation				
	Assess Property Value Per Student	.082	.321	148

performance of professional teachers and school administrators. The high level of correlation between free and reduced lunch level among students in a district and the QDI rating school districts receive, and the strength and consistency of the overall data from the research, suggest it

is unlikely professional educators have the ability to achieve a short-term impact on the relationship between free and reduced lunch level and school achievement in a district.

The nine variables with “strong” or “moderate” collinear relationships with free and reduced lunch present a picture of what poverty looks like in the context of different characteristics in a district. School districts with high percentages of students receiving free or reduced priced lunch tend to have much lower percentages of NBCT’s, lower average teacher salary and experience, and fewer students in the district. High poverty districts also tend to have much higher levels of federal funding per student, and diversity among the teaching staffs. These high poverty districts also tend to have higher levels of school-age children living in the district and not attending public school in the district, and a still higher percent of white students living in the district and not attending public school. Assuming the rating a school district receives impacts its ability to hire and retain professional educators in the teacher labor market, this data provides conclusive evidence the MSAS unfairly harms the very school districts it purports to support by, in effect, making high poverty districts unattractive places to work. Chapter 5 provides an interpretation of the meaning of the results, a discussion of implications for policy, and recommendations for further research.

CHAPTER V

Discussion

Introduction

During a recent conversation, a superintendent of a small, high poverty, rural school district, a district which has made moderate and steady progress in improving student achievement scores over the past several years but continues to receive low ratings from the state accountability system, was asked about difficulties in making rapid improvement in scores of assessments measuring overall student learning. The superintendent said:

One of my biggest challenges is the inability of our district to retain high performing teachers. Every time we have a teacher who produces dramatic improvements in student assessment scores, we lose the teacher to a wealthy district with high performance ratings from the state. We are held accountable for closing a poverty achievement gap high-rated, lower poverty districts are also not closing. The new A-F rating system makes our district unattractive to the best teachers and provides incentives for our high quality teachers to seek jobs in other districts. The policy creates a situation where an outstanding teacher risks his or her career by remaining in a low performing district.

(Anderson, personal communication, January, 2012)

This statement by the author of the study in an early conversation with his dissertation advisor, prompted the design, data collection, data analysis, and now, the interpretation of the data of this research study.

In order to objectively assess the merit of this concern, a research design was developed with a premise supported by a set of assumptions. The central premise guiding the research is the Mississippi Statewide Accountability System (MSAS) has unacceptable construct validity as a measurement instrument to be a fair and effective policy tool to ensure professional accountability. The first assumption guiding this research is the MSAS is, based on its creation and use of numerical ratings, a measurement instrument and thus appropriately subject to validity assessments. The second assumption is the instrument is invalid because of a lack of alignment between what the MSAS as a measurement instrument actually measures, what it purports to measure, and how the results are used in policy implementation. A third assumption assumes a correlation between historical and cultural contextual variables over which educational professional in each district have limited or no short term control over and the performance rating of a district. The final assumption guiding the design of the research, based on research and theory on teacher labor markets (Guarino et al, 2006), is a teacher will select, depending on a variety of variables and individual needs and values (level of compensation, working conditions, levels of administrative support, future career opportunities, location, and desire to promote a social good), the best employment option available.

This research focused on collecting and analyzing objective data related to the third assumption in an effort to provide evidence in support of the second assumption. In considering the relationship between the MSAS process, what the MSAS policy purports the data to mean, and how the MSAS uses the data for accountability, this research sought to identify and support relationships between measures of broad cultural and historical contextual variables, and the Quality of distribution index (QDI) scores produced by the MSAS. To be clear, this research did

not assess the content validity of the MSAS as a measure of the current academic achievement level of students; although, this could also be an issue. Rather, this research sought to collect objective evidence questioning the construct validity of the MSAS as a policy tool used to hold professional educators accountable for the level of academic attainment of students. This research does not question the need to hold educational professional accountable for the performance of their duties and results obtained; instead, this research questioned whether the MSAS instrument in practice measures contextual variables educational professionals have limited or no control over.

To achieve this purpose, this research examined the relationship between the QDI, a measure of overall student academic performance of school districts in Mississippi, and a set of four categories of possible covariates. The possible covariates were divided into four categories including district socio economic characteristics, district teacher characteristics, district school finance characteristics, and district social, cultural, and historical characteristics. Data was collected and analyzed to determine the relationship between district QDI ratings and a range of independent variables. In addition to measuring the level of correlation between district QDI and the 12 contextual variables, collinear relationships were also measured between all of the independent variables.

This research assessed QDI results from the SY 2011-2012 version of the MSAS and district context data derived, depending on the variable, between 2010 and 2012. Data from 148 school districts was analyzed to identify the Pearson r value and corresponding p value using SPSS. The results are reported in Chapter IV. The Mississippi Department of Education reported the MSAS results for 148 districts for SY 2011-2012 (CITE). Four districts were removed from

the study because of a lack of valid context data. Forrest Agricultural District, Coahoma Agricultural District, and Hinds Agricultural District were removed because these districts consist of a single agricultural high school and thus they do not have a defined consistent geographical boundary from which to obtain contextual data. The Drew School District was also not included in the research because a limited amount of data was available. In 2012, the Drew School District consisted of a single elementary school and was near the end of a process of being consolidated with the Sunflower County School District. The removal of these districts eliminated four small schools and approximately 1100 students from the research population. Nonetheless, the population used in the research consisted of 148 public schools districts, over 33,000 teachers, and over 490,000 students in the state.

The explanatory correlational research design (Creswell, 2009) used in the research made no assumption of causation. Regardless, interpretation of data from variables designed to measure district historical and cultural contexts requires some subjective interpretive analyses regarding the meaning of the relationships identified from the data. Thus, the following interpretation of the results should be viewed as possible explanations of identified relationships based on consistencies with historical accounts and narrative descriptions of cultural context of public education in Mississippi.

Summary of Results

Overall, the number of identified statistically significant correlations between district QDI scores and contextual variables provides strong evidence of construct validity problems when used to measure the performance of professional teachers and school administrators in order to hold these professional educators accountable. Simply, this research provides evidence

the MSAS is an inaccurate measure of the performance and results of professional public educators in the state. This claim is based on the affirmative answer to the central research question; yes, there is a relationship between internal and external characteristics of a district and the district's rating from the MSAS. The scope and strength of the correlations suggest professional educators have real contextual constraints in efforts to achieve a short-term impact on QDI accountability ratings. While the evidence suggests there are obstacles to improvement in high poverty districts, it is important to note some high poverty districts are showing rapid improvement and some are performing above average in the state.

The results also indicate evidence for an affirmative response to the four sub-questions. Statistically significant relationships were found between district QDI and all four of the district teacher characteristics, all three of the district finance characteristics, one of the two district socio-economic characteristics, and all three of the district social, cultural, and historical characteristics. Levels of strength of the significant correlations ranged from a Pearson's $r = .162$ ($p .05$) between QDI and taxes levied per pupil, and a Pearson's $r = -.850$ ($p .000$) between poverty (percent of free or reduced lunch). While no significant relationship was found between the district socio-economic variable of assessed property value per student and QDI, the $-.850$ correlation between the other socio-economic variable, poverty, supports an affirmative response to the third research sub-question.

In regard to the null hypotheses, 11 of the 12 were rejected resulting in statistically significant evidence of a relationship between district QDI and the 11 independent variables (see Table 20, p. 74). A strong relationship between poverty and QDI was found. A high moderate positive relationship was found between QDI and percent of NBCTs. A high moderate negative

relationship was found between QDI, and the teacher diversity index and per pupil level of federal funding. Low moderate positive relationships were found between QDI, and average teacher salary and average years of teacher experience. A low moderate negative relationship was found between QDI, and average per pupil funding and white flight index. A low weak positive relationship was found between QDI, and the district attendance index and taxes levied per pupil. A weak positive correlation was found between the size of the district (number of students) and QDI. No significant relationship was found between assessed property value per pupil and QDI.

Context Analyses

As a whole, the research data presents a picture of a low performing district in the state of Mississippi. This picture, based on correlational relationships resulting from a population of 148 districts, reflects consistencies across the population; thus, the characteristics of individual low or high performing districts may not fit this holistic profile. Nonetheless, the data does show the characteristics low performing districts tend to have and the strength of the overall tendencies relative to high performing districts in the state. A poor performing district in the state of Mississippi is likely to have a much higher percent of students living in poverty. The district will typically have a higher level of diversity among its teachers and level of federal funding per student. It will also typically have a lower level of National Board Certified Teachers. A low performing district will tend to have an overall per pupil spending and white flight index somewhat higher than high performing districts while its average teacher salary and average years of teacher experience will be slightly lower. At a minimal level, the low performing

districts will tend to have fewer students and fewer taxes levied per student and a higher district attendance index than high performing districts.

Interpretation

This interpretation focuses on poverty, the variable with the strongest correlate to district QDI. Nine of the remaining 11 independent variables had significant collinear relationships with poverty. Only property tax levied per pupil and average assessed property value per student showed no significant relationship to district poverty. Federal funding per pupil showed a strong correlation and the other nine variables showed a strong or moderate correlation to poverty. In addition to poverty, the other strong and relevant collinear relationships will be discussed. This discussion is prefaced with recognition of assumptions of causality within the interpretation of historical and contextual data. Regardless, any interpretation of what this data means in regard to policy implications and recommendations requires some level of rationale causal speculation on how the variables with strong correlations may relate to school district performance.

The strongest correlate to district QDI in Mississippi is poverty measured as the percent of students in the district receiving free or reduced price lunch. The Pearson r value for the poverty variable of $-.850$ has an $r^2 = .723$ indicating 72.3% of differences in district QDI scores can be accounted for by differences in the percent of students living in poverty. Table 22 indicates the effect this correlational relationship has on the ratings for high poverty districts and districts with lower poverty³. The poverty result is consistent with existing research on the effects of poverty on learning (Jensen, 2013) and the relationship between poverty and measures

³ Note, the term “lower poverty districts” is used, these districts also have a relatively high poverty rate.

of student learning (Snyder, 2013). In 2013, 57.5% of Mississippi residents were White and 37.4% African American (Spotlight on Poverty, 2015). The poverty rate in the state was 22.7% (Kaiser, H.J., 2013), the highest poverty rate in the nation. The poverty rate for Mississippi’s

Table 22

QDI Ratings for High Poverty Districts and Lower Poverty Districts in Mississippi (SY 2010-11)

Level of Poverty	Mean QDI	Poverty Range	Mean % AA Students	Number A Districts	Number B Districts	Number C Districts	Number D Districts	Number F Districts
High Poverty Districts N = 40	132.75	>90%	93.11%	0	1	10	14	15
Lower Poverty Districts N = 37	182.4	<60%	25.85%	3	31	2	1	0

Source (Southern Echo-CITE)

white population of 11% was below the national average and only one percent above the national average of white residents. A very high 40% of Mississippi’s African American residents lived in poverty.

Clearly, poverty data for Mississippi is reflected in district QDI scores. In addition, the divergent levels of poverty between the state’s white and African American population suggest the achievement gap, and the corresponding high correlation between poverty and QDI in Mississippi is related to both economic and racial contexts within the district. The historical nature of this relationship is consistent with the contextual histories of low performing districts.

A brief historical overview of public education in Mississippi following the civil war begins with efforts to establish a system of education for freed slaves collapsing with the end of radical reconstruction during the 1870’s (Butchart, 2004). In 1896, the US Supreme Court, *Plessy v Ferguson* decision allowing “separate but equal” provision of public services led to the

development of a dual system of education which was separate but certainly never equal. The early twentieth century was a period characterized by rigid political, economic, and social control and segregation of African American citizens in the state under Jim Crow (Jim Crow Laws, 2011) laws and reinforced by lynching and KKK activity (Oppenheimer, 2014). The great depression of the 1930's and the Second World War began a massive migration of African Americans from the state. The war also led to a large number of African American citizens returning to the state with high expectations for change resulting from military training and education, and exposure to race relations in other parts of the country and world. The mass migration continued after the war as technology dramatically reduced the need for agricultural labor. Also related to changing technology and an intentional systemic backlash to the civil rights movement, over 90% of landowning African American farmers lost their farms between 1950 and 1970 (Daniel, 2013) as a result of discrimination and corruption in the implementation of federal agricultural policies. During this time of the civil rights movement, a staunch resistance to change led to the creation of the Mississippi Sovereignty Commission, and local citizens' councils. This state agencies and local groups actively sought to maintain racial segregation and the disenfranchisement of African American voters through a coordinated effort to marginalize African Americans economically and politically. Mississippi schools did not integrate until 1970 and the racial integration of many districts was followed by the creation of white segregation academies and withdrawal of all or most of the white children from the public schools. Today, many school districts remain either all or mostly African American students. The data attempts to capture the relationship between these districts and QDI with correlations with district white flight index. The state made a positive step forward in 1973 with the passage of the

Mississippi Adequate Education Program (MAEP); however, this program has rarely been fully funded and in the recent budget cycle, the Mississippi Legislature underfunded the MAEP by \$206 million. In addition, universal kindergarten was not available in Mississippi until passage of the Educational Reform Act of 1982 (Nash & Taggert, 1992) led by Governor William Winter.

The preceding historical summary provides a contextual summary of some of the reasons why the poverty rate in Mississippi is extremely high, especially among African Americans, and why this rate impacts the ability of communities to provide effective educational services. Several of the collinear relationships between the independent variables revealed by the analyses indicate the complexity of these contextual variables and the relationships between effective education and contextual poverty. The correlation between poverty and percent of Nationally Board Certified Teachers (NBCTs) is $r = -.675$, $r^2 = .455$. Assuming NBCTs are an indication of teacher quality, this results suggests poor performing districts have fewer numbers of high quality teachers. This assumption is supported by the correlation between poverty and teacher experience ($r = -.410$, $r^2 = .168$) and teacher salary ($r = -.381$, $r^2 = .145$). The high collinear relationship between teacher experience and salary ($r = .637$, $r^2 = .406$) likely reflects the impact of the step pay increase system used throughout the state linking pay to experience; nonetheless, the data does indicate poor performing school districts tend to have less experienced teachers. Level of teaching experience is also related to the teacher diversity index ($r = .320$, $r^2 = .10$). Interestingly, poverty correlated highly with the teacher diversity index ($r = -.679$, $r^2 = .461$). This relationship may be explained by the impact of several programs including the federal school loan forgiveness program (Federal Student Aid, 2011) which grants loan forgiveness to

teachers working in high poverty schools for five years, and Teacher for America (Kopp, 2009) and Mississippi Teacher Corps (McConnell, 2005) programs. This assertion is supported by evidence of the relationship between the teacher diversity index of the district and the level of federal funding per student ($r = .565$, $r^2 = .319$). An issue with all of these programs is teachers typically leave a high poverty district following the completion of program obligated teaching tenures. These results all provide evidence in support of a connection between school performance and the teacher labor market.

High poverty districts have much higher federal funding per student ($r = .738$, $r^2 = .545$), a higher student attendance index ($r = .322$, $r^2 = .104$), and a higher white flight index ($r = .446$, $r^2 = .199$). The level of federal funding per student is reflective of federal Title I programs to address issues of poverty in education and this likely contributes to high collinear relationship with district overall expenditure per student ($r = .550$, $r^2 = .303$). The relationship between federal expenditure per student and teacher salary ($r = -.327$, $r^2 = .107$) suggests that while districts in poverty receive additional federal funds, this money may not be used to augment teacher salaries. In contrast, the lack of evidence of a relationship between teacher salaries and expenditure per student ($r = .041$, $p = .618$) indicates high poverty districts may be augmenting teacher salaries with state funding. This assertion is further supported by the correlation between mean teacher salary and local taxes levied per student ($r = .356$, $r^2 = .127$). The higher performing districts may be augmenting teacher salaries with local tax effort.

Causality is vague concerning the relationship between poverty and the two attendance indices. Both indices measure levels of students living in a district not attending public schools. The correlation may be explained by the motivation effect of low performance on parents to

locate or create other educational options for their children; or, by the effect of parents choosing not to send their children to public schools for racial and cultural reasons on levels of community support and levels of poverty among students in the district. High poverty districts also tend to be smaller ($r = -.354$, $r^2 = .125$).

The two remaining strong collinear relationships both indicate a high level of similarity between the respective variables. The relationship between district per pupil expenditure and federal funding per student ($r = .813$, $r^2 = .66$), and between local taxes levied per student and assessed property value per student ($r = .878$, $r^2 = .685$), both suggest a high level of collinearity between these pairs of variables. Other moderate collinear relationships are consistent with differences between relatively low poverty and high poverty districts. The percent of NBCTs correlated moderately and consistently with low poverty districts in relations with the teacher diversity index, per pupil expenditure, federal funding per student, and the white flight index. The teacher diversity index correlated moderately and consistently with high poverty districts in relation to district per pupil expenditure and white flight index. Per pupil expenditure correlated consistently with high poverty districts in taxes levied per student and assessed property value per student. And federal funding per student correlated positively with the white flight index and the negatively to the size of the district.

In conclusion, the data presents a complex picture and interpretation is limited by issues of causality and other limitations of explanatory correlational research. Nonetheless, the data does provide evidence in support of an affirmative answer to the general research question, the four sub-questions, and 11 of the 12 null hypotheses.

Recommendations

The following recommendations are premised with a list of policy implications of statewide accountability systems this research does not address. First this research does not suggest public school teachers and administrators should not be held accountable for job performance and results. Data from this research does not suggest any children are unable to learn at high levels. The data also does not suggest any districts are unable to improve and perform at high level. Thus, the following policy recommendations based on these research results center on suggestions for improving the capacity of public school districts to meet the learning needs of all students. These suggestions also tend to support high poverty districts in efforts to increase the quality of teachers.

First and foremost, data from this research reveals a need to make changes in the MSAS. During the 2014 Mississippi legislative session, the state did modify the QDI formula to increase the relative weight of measures of ability and growth of low performing students. Regardless, there are limitations to the validity of any accountability system based solely on student test scores. Systems, like the SY 2011-2012 MSAS, using student scores on criterion referenced tests have limited ability to measure levels of learning over the past year, or account for differences in ability to learn, or metacognition. Value-added assessment systems (Kersting, et al., 2013), which cost more, do provide a much better job of measuring the impact of teachers and schools; however, these systems also have difficulty fairly accounting for differences in rates of student learning. There is an option to mathematically adjust ratings based on formulas designed to adjust for contextual differences; however, these adjustments effectively lower

performance expectations for high poverty districts. Admittedly, the 2014 changes in the MSAS are a huge improvement over the system examined in this research. Holding all districts accountable for the performance of their lowest performing students along with reducing the relative weight of the performance of the highest performing districts, mitigates some of the construct validity concerns raised in this research. Nonetheless, the 2014 MSAS remains committed to the use of student test data to rate the performance of school districts. Benefits of this system are simplicity and cost.

Although the 2014 changes in the MSAS likely improved the construct validity of the system, the changes did not address the impact of low ratings. The purpose of the ratings is to inform the public of levels of performance and to provide internal and external political pressure to motivate educational professionals to improve. While the motivation effect is likely high, the results of this study suggest low performing districts may confront issues of capacity rather than motivation. When teachers and administrators lack the capacity (Fullan, 2009) to improve student learning, policies designed to motivate will have little impact on results.

Thus, in order to address issues of professional capacity, it is recommended states adopt a more holistic and complex accountability system for administrators and teachers. While these types of systems tend to be much more expensive, especially in regard to training costs, and personnel costs, state-of-the-art teacher and administrator evaluation systems are now available designed to identify areas of improvement necessary to increase the capacity of educators to perform at high levels. Ideally, this system would be formative in tone, include multiple types of data, use value-added tools to measure growth in student learning, capable of assessing the complex knowledge and skills necessary to effectively lead schools or teach in the classroom

(NEPC and Strong). Teachers and administrators need to be held accountable, but much more valid and formative tools are available to evaluate performance and productive.

A reduction in emphases on test scores to evaluate professional educators should be combined with policies to limit the level of testing, and preparation benchmark testing, used in schools. There is a need for measurements of levels of student learning; however, a reduction in the summative use of this data would allow districts to significantly reduce practice benchmark tests designed to mimic the year-end state assessments. Instead, schools and districts could develop and utilize in-class progress monitoring assessments linked to curriculum objectives. The increased use of focused and in-class progress monitoring would free up valuable instructional time. Districts in Mississippi spend an average of \$9,469 a year per student (see table 6). Assuming a school year of 180 days, each district spends an average of roughly \$52.60 per day to educate each student. If a district of 1000 students reduces the number of testing days by five per year, the district will have an additional \$263,000 worth of instructional time to devote to student learning. Statewide, a reduction of 5 days of testing for the over 490,000 students in the state will provide an additional \$128.87 million worth of instructional time to public schools. The additional time will increase the instructional capacity of schools. In addition, this savings in the value of student time could offset the cost of more expensive systems of professional accountability.

Mississippi funding per pupil in 2012 was \$8,164 (Public Education Costs, 2014). The 2012 level of funding placed Mississippi 46th of 50 states in level of per pupil funding. Unfortunately, in a high poverty state such as Mississippi, increased resources are needed to provide schools the capacity to meet the needs of all students. While Mississippi has a funding

system, the Mississippi Adequate Education Program, designed to address equity and adequacy in state funding, the MAEP is chronically underfunded. According to the Parents Campaign (Parent's Campaign, 2015), the MAEP appropriation was underfunded by \$206 million for SY 2015-2016 during the 2015 legislative session. Mississippi can increase the capacity of its schools to improve instruction and hire and retain high quality teachers by adhering to its own law and fully funding the MAEP.

While Head Start and minimal state sponsored early childhood programs are making a difference, there is still need to expand these programs to ensure all students enter kindergarten with cognitive skills development necessary for success. There remains a need to increase and improve early childhood education programs in the state.

Based on the data from this research, high poverty schools have difficulty hiring and retaining high quality teachers. Not only should monetary incentives be available to reward long term commitment to teaching in high poverty districts, but efforts should be made to improve other variables identified by Guarino et al. (2006) as influences on schools teacher select to work for; working conditions, administrative support, future career opportunities, and desire to promote a social good. Policies should ensure all teachers and administrators have comfortable and safe working environments, have the resources and support need to perform at high levels, are not held accountable for things they have little or no control over, and have a genuine opportunity to make a difference in student learning.

Finally, Mississippi is not preparing enough high quality educators to meet the needs of its schools. While state colleges and universities are producing many high quality administrators and teachers, the state also relies on large number of alternate route administrators and teachers,

a large number of Teacher for America and Mississippi Teacher Corps teachers, and a large numbers of educators certified after attending out-of-state online programs. Regardless of the need, teacher and administrator preparation programs in state institutions of higher learning struggle with inadequate faculty and resources. For a relatively small investment, the state could increase the capacity of state colleges and universities to prepare more high quality educators from Mississippi who are much more likely to remain in the state.

As a whole, this set of policy recommendations focuses on shifting the emphases of state policy while also increasing the level of state commitment of resources to schools. Mississippi's education system is similar in many ways to a high poverty district. Given Mississippi has the highest poverty level (U.S. Census, 2012) and the lowest level of school performance (Quality Counts, 2015) in the nation, there is vital need for the state to increase the productive capacity of its educational systems. Increasing Mississippi's educational capacity will require both a change in policy emphases and an increased commitment of resources. Of course, this is a political issue the voters and elected representatives of the people of Mississippi will decide. It ultimately seems a question of the collective value of public education for the people of Mississippi.

Limitations

Correlational research has multiple limitations including a limited ability to identify and understand collinear relationships. Nonetheless, high r values found in many of the cross correlations suggest issues with collinearity in the data.

The educational policy milieu is rapidly changing. Mississippi has significantly changed the Mississippi Statewide Accountability System since the data was collected in 2012. How

districts' low performing students score on state tests is weighted more and the scores of high performing students, less. The state no longer calculates a Quality of Distribution Index.

This research was conducted with a sample of Mississippi school districts and therefore the results are not generalizable to districts outside of Mississippi. Nonetheless, the results of this research may raise construct validity concerns with similar systems used in other states.

Opportunities for further research

The data set in the study needs further analyses. Multi-linear Regression or Factor Analyses may provide a much clearer picture of the collinear relationships among the variables. Additional variables may also be included such the teacher student ration in each district, measures of performance growth, per capita family income in the district, percent of teachers participating in the federal loan forgiveness program, Teach for American, or the Mississippi Teacher Corps.

Focused research on the teacher labor market in Mississippi, and other states, would likely support this research by informing policy makers of potential factors influencing the quality of teachers available to low performing, high poverty districts, in isolated rural areas. An analysis of conditions in the teacher labor market may also identify incentives to keep high quality teachers in high poverty districts.

The results of this study raise a need to better understand the educational contexts, cultures, systems, processes, in the highest and lowest performing districts. Using mixed methods similar to the effective schools research (Teddlie), intensive qualitative analyses would provide thick description of similarities and differences between high and low performing districts in the state.

Conclusion

This research provides evidence a system designed to improve schools such as the Mississippi Statewide Accountability System may have severe unintended consequences. The data presented here suggests educators in low performing schools are held accountable for contextual factors they have limited or no control over. While this research did not seek to provide evidence related to why teachers are leaving low performing districts, the evidence does indicate low performing schools utilize less experienced and less qualified teachers. Based on the results, and argument was presented recommending a shift in state policies away from test based summative assessment systems to more holistic and formative accountability. The goal of state policy should be focused on increasing the capacity of all districts to provide educational services. Primary policy tools for these results are policies designed to increase teacher and administrator quality in all Mississippi schools.

LIST OF REFERENCES

REFERENCES

- A nation at risk: The imperative for educational reform; A report to the nation and the secretary of education, United States department of education / by the National Commission on Excellence in Education. (1983). Washington, D.C.: National Commission on Excellence in Education: [Supt. Of Docs., U.S. G.P.O. distributor].
- Anderson, E. S., & Keith, T. Z. (1997). A longitudinal test of a model of academic success for at-risk high school students. *Journal of Educational Research*, 90(5), 259.
- Anne, T. S. (2012). Mississippi legislature considers charter schools. *Jackson Advocate*. Retrieved from <http://search.proquest.com/docview/927748119?accountid=14588> at-risk high school students.
- Baker, E.L., Barton, P.E., Darling-Hammond, L., Haertel, E., Ladd, H.F., Linn, R. L., &... Economic Policy, I. (2010). Problems with the use of student test scores to evaluate teachers. EPI Briefing Paper #278. Economic Policy Institute.
- Barkan, J. (2011). Got dough?. *Dissent* (00123846), 58(1), 49.
- Boyle B, Bragg J, (2009). What a waste of money! *Education Journal*. (114), 44-46.
- Bracey, G. W. (2008). Disastrous legacy: Aftermath of a nation at risk. *Dissent* (00123846), 55(4), 80-83.
- Brown v. Board of Education, 347 US. 483 (1954).

- Butehart, R.E., & Rollen, A.F. (2004). Secondary education and emancipation: Secondary schools for freed slaves in the American south, 1862-1875. *Paedagogica Historica*, 40(1/2), 157-181. [Loi:10.1080/00309230310001649243](https://doi.org/10.1080/00309230310001649243)
- Caldas, S., & Bankston III, C. (1997). Effect of school population socioeconomic status on individual academic achievement. *Journal of Educational Research*, 90(5), 269.
- Campbell, D., & Fiske, D. (1959). Convergent and discriminant validation by the multitrait-multi method matrix. *Psychological Bulletin*, 56(2), 81-105.
- Cheo, R. K. (2009). Ranking and school autonomy: Efficiency effects of new initiatives on the singapore education system. *Singapore Economic Review*, 54(2), 197-215.
- Civil Rights Act of 1964 § 7, 42 U.S.C. § 2000e et seq (1964).
- Cohn, E., & Geske, T. G. (2004). *The economics of education*. 3rd ed. Mason, Ohio: Southwestern College Publishing.
- Coleman, J.S., Pettigrew, T. F., Sewell, W. H., & Pullum, T. W. (1973). Review symposium. *American Journal of Sociology*, 78(6), 1483.
- Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation; Design & analysis issues for field settings*/Thomas D. Cook, Donald T. Campbell; [project editor, Gayle Fankhauser; cover illustrator, Arles Day]. Chicago, IL: Rand McNally College Pub. Co.
- Creswell, J. W. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (3rd ed.). Upper Saddle River, N.J: Pearson/Merrill Prentice Hall.
- Cronbach, L. J. (1957). The two disciplines of scientific psychology. *American Psychologist*, 12(11), 671-684.

- Cronbach, L., & Meehl, P. (1955). Construct validity in psychological tests. *Psychological Bulletin*, 52(4), 281-302.
- Dancey C., Reidy J. (2004). *Statistics without math for psychology: Using SPSS for windows*. London: Prentice Hall
- Daniel, P. (2013). *Dispossession: Discrimination against African American farmers in the age of civil rights*. Chapel Hill, NC: University of North Carolina Press.
- Davis, R. (2010). Socioeconomic status (SES). In K. Lomotey (Ed.), *Encyclopedia of African American education*. (pp. 586-591). Thousand Oaks, CA: SAGE Publications, Inc.
- Derthick, M., & Dunn, J.m. (2009). False Premises: The accountability fetish in education. *Harvard Journal of Law & Public Policy*, 32(3).
- Federal Student Aid, (2011). Stafford loan forgiveness program for teachers. *Federal Student Aid, US Department Of Education*.
- Fleming, M.(1994). Brown v. Board turns 40. Hispanic (serial online); 7(4):8, Available from: MAS Ultra-School Edition, Ipswich, MA.
- Fullan, M. (2009). *The challenge of change: Start school improvement now*. Thousand Oaks, California: Corwin.
- Gall, M., Gall, Joyce, & Borg, W. (2007). *Educational research: An introduction* (8th ed.). Boston, MA: Allyn and Bacon.
- Goertz , M. E. (2001, September). *The federal role in defining "adequate yearly progress:" The flexibility/accountability trade-off*. Consortium for Policy Research in Education.
- Guarino,C.M., Santibane, L. & Daley, G.A. (2006). Teacher recruitment and retention: A review of the recent empirical literature. *Review of Educational Research*. 76(2). 173.

- Harrison, B. (2009, December 28). Burnham: Give board consolidation authority. *Northeast Mississippi Daily Journal*. (Tupelo, MS).
- Harrison, B. (2012, July 28). Bryant urges merit pay for teachers. *North East Mississippi Daily Journal*.
- Harrison, B. (2012, April 4). Charter bill dies in House. *Northeast Mississippi Daily Journal* (Tupelo, MS).
- Haynes, S. N., Richard, D.S., & Kubany, E.S. (1995). Content validity in psychological assessment: A functional approach to concepts and methods. *Psychological Assessment*, 7(3), 238-247.
- Hernandez, J. (2009). Factors that may lead to an urban high school's outperforming status: A case study of an institution's achievement in the age of accountability. Ed.D. dissertation, University of Southern California, United States – California.
- Hinkle, D.E., Wiersma, W., & Jurs, S.G. (2003). *Applied statistics for the behavioral sciences*. 5th ed. Boston: Houghton Mifflin.
- Howard, T. C. (2003). Who receives the short end of the shortage? Implications of the U.S. teacher shortage on urban schools. *Journal of Curriculum & Supervision*, 18(2), 142.
- Irwin, P.M., & Library of Congress, W.S. (1992). Elementary and Secondary Education Act of 1965: 1993 Guide to Programs. CRS Report for Congress.
- Jennings, J. (2015). ESEA at 50. *Phi Delta Kappan*, 96(7), 41.
- Jensen, E. (2013). How poverty affects classroom engagement. *Educational Leadership*, 70(8). 24.

Jim Crow laws. (2013). *Columbia Electronic Encyclopedia*, 6th Edition, 1. Literary Reference Center, EBSCOhost(accessed April 3, 2015).

Kahlenberg, R.D. (2001, Summer). Learning from James Coleman, *Public Interest*, (144), 54.

Kaiser, H.J., State health facts. Poverty rate by race/ethnicity. Retrieved from <http://kff.org/other/state-indicator/poverty-rate-by-raceethnicity/>.

Kersting, N. B., Chen, M., & Stigler, J. W. (2013). Value-added teacher estimates as part of teacher evaluations: Exploring the effects of data and model specifications on the stability of teacher value-added scores. *Education Policy Analysis Archives*, 21(7).

Kirst, M.W. (1990), *Accountability: Implications for state and local policymakers*, Office of Educational Research and Improvement, U.S. Department of Ed., Washington, D.C.

Klein, A. (2009). ESEA action high priority, Duncan says. *Education Week*, 29(5), 1.

Leckie, G., & Goldstein, H. (2009). The limitations of using school league tables to inform school choice. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 172(4), 835-851. doi:10.1111/j.1467-985X.2009.00597.x

Plessy v. Ferguson, 163 US. 537 (1896).

Lingenfelter, P. E. (2003). Educational accountability. *Change*, 35(2), 18.

Linn, R. L., & National Center for Research on Evaluation, S. A. (2006) *Educational Accountability Systems*, CSE. Technical Report 687. National Center for Research on Evaluation, Standards, and Student Testing (CRESST).

Ma, X. (2000). Socioeconomic gaps in academic achievement within schools: Are they consistent across subject areas? *Educational Research & Evaluation*, 6(4), 337-355.

- Marietta, G. (2010). Lessons in early learning: Building an integrated pre-k-12 system in Montgomery county public schools. *Foundation for Child Development*.
- Maxey, R. (2010, August 21). Mississippi schools make the grade. *Commercial Appeal*, (Memphis, TN), Retrieved from Newspaper Source database.
- McConnell, G. (2005). *The Mississippi Teacher Corps: a descriptive study of former participants' continued commitment to and involvement in education*. 2005.
- McNeil, M. (2014). Placement of teacher gets scrutiny. *Education Week*, 33(21), 1.
- Messick, S. (1989). Meaning and values in test validation: The science and ethics of assessment. *Educational Researcher*, 18(2), 5-11.
- Mississippi Parent's Campaign (2015). Mississippi Adequate Education Program. Retrieved from <http://www.msparentscampaign.org/component/content/article?id=1081>.
- Mizala, A., Romaguera, P., & Urquiola, M. (2007). Socioeconomic status or noise? Tradeoffs in the generation of school quality information. *Journal of Development Economics*, 84(1),
- Nash, J. & Taggart, A. (1992). Education transforms the mississippi legislature. *The Journal of Mississippi History*, (1992). Retrieved from <http://mdah.state.ms.us/new/wp-content/uploads/2013/07/reform.pdf>
- National Board for Professional Teaching Standards, A.V. (2004). Why America needs national board certified teachers. National board for professional teaching standards. National Board for Professional Teaching Standards.
- Nevin, D., & Bills, R. E. (1976). *The schools that fear built: Segregationist academies in the south*, Washington D.C: Acropolis Books.
- No Child Left Behind (NCLB) Act of 2001, Pub. L. No. 107-110, § 115, Stat. 1425 (2002).

- Noguera, P. (2009). The achievement gap: Public education in crisis. *New Labor Forum (Murphy Institute)*, 18(2), 60-69.
- Okpala, C., Okpala, A., & Smith, F. (2001). Parental involvement, instructional expenditures, family socioeconomic attributes, and student achievement. *Journal of Educational Research*, 95(2), 110.
- Oppenheimer, M. (2014). New light on the kkk. *New Politics*, 15(1), 131.
- PEER, (2013). Identifying Options for Improving the Efficiency of Mississippi's School Districts: Phase One. Mississippi Legislature, PEER Report #587, November 12, 2013.
- Perry, L., & McConney, A. (2010). School socio-economic composition and student outcomes in Australia: Implications for educational policy. *Australian Journal of Education*, 54(1), 72-85.
- Plessy v. Ferguson 163 U.S. 537 (1896). United States Supreme Court, May 18, 1896.
- Popham, W.J. (2004) "Chapter 2: Annual Yearly Progress (AYP): Little letters, big impact," *America's "Failing" Schools: How Parents and Teachers Can Cope with No Child Left Behind*.
- Public education costs per pupil by state rankings. (2014). Retrieved from <http://education.cu-portland.edu/blog/classroom-resources/public-education-costs-per-pupil-by-state-rankings/>.
- Robelen, E. W. (2005). 40 years after ESEA: Federal role in schools is broader than ever. *Education Week*, 24(31),1.

- Rothstein, R. (2004). *Class and schools: using social, economic, and educational reform to close the black-white achievement gap*: New York, N.Y.: Teachers College, Columbia University.
- Schlechty, P. C. (2001). *Shaking up the schoolhouse: How to support and sustain educational innovation*. San Francisco, CA; Jossey-Bass.
- Scott, G.A.. (2011). *Disadvantaged students: School districts have used Title I funds primarily to support instruction*. Report to Congressional Committees. GAO-11-595. US Government Accountability Office.
- Sirin, S.R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of educational research*, 75(3), 417-453.
- Snyder, T.D., Dillow, S.A., & National Center for Education Statistics, (ED). (2013). *Digest of Education Statistics, 2012*. NCES 2014-015. National Center for Education Statistics.
- Solis, R. V. (2013). *Bryant focuses on education, job creation, in state of state address*, associated press.
- Spotlight on Poverty and Opportunity. The Source for news and Action. Retrieved from <http://www.spotlightonpoverty.org/map-detail.aspx?state=Mississippi>)
- Steele, T.D. (2009). *Closing the achievement gap: What can be done?* Ed. D. dissertation, University of Southern California, United States – California.
- Superintendent's Annual Report, Mississippi Department of Education (2013). Lynn House, Interim State Superintendent, School Year 2011-12. Retrieved from <https://www.mde.k12.ms.us/docs/mississippi-board-of-education-library/superintendent-annual-report.pdf?sfvrsn=0>

- Sutton, A., & Soderstrom, I. (1999). Predicting elementary and secondary school achievement with school-related and demographic factors. *Journal of Educational Research, 92*(6), 330.
- Tashlik, P. (2010). Changing the national conversation on assessment. *Phi Delta Kappan, 91*(6), 55-59.
- Teddlie, C., & Reynolds, D. (2000). *The international handbook of school effectiveness research*. New York: Falmer Press, 2000.
- Toutkoushian, R., & Curtis, T. (2005). Effects of socioeconomic factors on public high school outcomes and rankings. *Journal of Educational Research, 98*(5), 259-271.
- Tucker, M. S. (2011). *Standing on the shoulders of giants: An American agenda for education reform*. Washington, DC: National Center on Education and the Economy.
- United States. National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform: a report to the Nation and the Secretary of Education, United States Department of Education*. Washington, D.C.: The Commission.
- Vandevoort, L. G., & Berliner, D. C. (2004). National board certified teachers and their Students' achievement. *Education Policy Analysis Archives, 12*(46).
- Watkins, T. (2012, Sept. 11). In teachers' strike, Emanuel pushing democrats' new view. CNN.
- Westen, D. and Rosenthal, R. (2003). Quantifying construct validity: Two simple measures. *Journal of Personality and Social Psychology, 84*(3), 608-618.
- William, D.(2010). What Counts as Evidence of Educational Achievement? The Role of Constructs in pursuit of equity in assessment. *Review of Research of in Education, 34*(1), 254-258.

- Wilson, D. (2004). Which ranking? The impact of a 'value-added' measure of secondary school performance. *Public Money & Management*, 24(1), 37-45. Xiaofei, L., & Ke, L. (2008). Student performance and family socioeconomic status. *Chinese Education & Society*, 41(5), 70-83.
- Zeisler, K. (2012). The impact of resources on education: A position paper on how theories of social capital provide insight on the achievement gap in the united states education system. No Child Left Behind Act of 2001: conference report to accompany H.R. 1, 2001. Washington: US. G.P.O. 2001.

VITA

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Education

Ph.D., Educational Leadership and Administration, The University of Mississippi, Oxford, MS,
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M. Ed., Educational Leadership and Administration, The University of Mississippi, Oxford, MS,
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BS in Physics, Mississippi Valley State University, Itta Bena, MS May 1985

Research Interests

State Accountability Systems and how they impact students from diverse backgrounds, to include race, ethnicity, gender, and socioeconomic status.

What can school administrators do to reduce the achievement gap for students of poverty without reducing the learning curve for other students?

Professional Credentials

Superintendent July 2001-present

Coffeenville School District, Coffeenville, MS

Responsibilities: Guide the school district according to local and state policies. Maintain good public relations and exhibit high moral conduct. Establish a budget based on the needs of the students of the district. Establish a working environment where all personnel understand his/her role and provide needed feedback to help them grow. Ensure that students who leave our district have the best possible foundation for future success.

Assistant Principal July 1997 – June 2001

Grenada High School, Grenada, MS

Responsibilities: Managed fixed assets, evaluated teachers, counseled students, and administered discipline for all students according to the student handbook. Scheduled duties for teachers at sporting events and managed events.

Teacher Aug 1987-Dec 1996

Grenada High School, Grenada, MS

Responsibilities: Provide instructions to students in the areas of Technology Discovery, Pre-Calculus, Geometry, and/or physics. Maintain discipline and provide an environment conducive to learning.

Honors and Awards

Star Teacher: Grenada High School (Twice in my ten years as a teacher)

Member of Board of Directors of Mississippi Association of School Superintendents

Member of Board of Directors of North Mississippi Education Consortium

Professional Membership

Mississippi Association of Educators

Mississippi Association of School Superintendents

Northwest Mississippi Association of School Superintendents