2017

The Relationship Between The Mississippi Adequate Education Program And Student Achievement In Mississippi Schools

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THE RELATIONSHIP BETWEEN THE MISSISSISSIPPI ADEQUATE EDUCATION PROGRAM AND STUDENT ACHIEVEMENT IN MISSISSIPPI SCHOOLS

A Dissertation

presented in partial fulfillment of requirements

for the degree Doctor of Philosophy

in the Department of Leadership and Counselor Education

The University of Mississippi

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May 2017

ABSTRACT

The dissertation research examined the effects of school funding upon student achievement in Mississippi public schools from 2011-2012, 2012-2013, and 2013-2014. The detailed description of the MAEP and its relationship to revenues derived from ad valorem taxes and how they explain the primary basis for revenues that support public education in Mississippi. Hence, a secondary problem in this study identified a prediction equation based upon selected school characteristics and derived funding levels (using MAEP data) to predict student achievement. Six hypotheses were examined in the study to determine the effects of school funding upon academic achievement.

The following findings resulted from this study:

1. The MAEP funds used for funding school districts in Mississippi had a direct impact on the education of all students within public K-12 schools in the state.
2. In the three years studied, when all variables were correlated in a Pearson-r matrix, no significant relationship was found between MAEP funds and school achievement following corrections to minimize Type I errors. However, using Standard Multiple Regression, the strongest unique contribution to explaining disaggregated school achievement scores for 2011-2012 and 2012-2013 was the level of school funding. This above technique was able to isolate the influence of school funding on school achievement holding the influence of other variables constant for the 2011-2012 and 2012-2013 school year data. These findings also

agreed with single correlations between school funds and school achievement in school years in 2011-2012 and 2012-2013.

3. In 2013-2014, the results of the Standard Multiple Regression technique indicated that school curriculum characteristics had a significant impact on student achievement to a greater extent than the amount of money received by the school districts within the state. This finding is significant because changing the way school achievement grades were disaggregated (i.e., disaggregating school achievement into three types of A's, B's, C's, D's and F's) fundamentally elevated curriculum characteristics to a higher level of relationship to school achievement scores than the relationship between school funding and disaggregated school achievement scores. Previous results in this study indicated the reverse (i.e., 2011-2012 and 2012-2013). Moreover, the amount of school funds received through MAEP was not found to be significantly related to school achievement when defined using three types of A's, B's, C's, D's, and F's in 2013-2014.
4. For each year of data in this study, a prediction equation was found to predict student achievement for selected school characteristics and levels of school funding.

Further research is suggested to examine more closely district funding issues. This study examined all school districts in Mississippi without looking specifically at each school within any district. Further research is suggested to explore the relationship between how school achievement is defined (i.e., how grades are assigned to schools in relationship to the ways schools are differentiated into categories due to differences in state-defined curricular characteristics).

An additional recommendation following this study is to examine the funding of schools on a differential basis to make schools more equitable in terms of their curricular dissimilarities. This type of study would particularly be focused on making science and math offerings at all schools more similar. A final recommendation addresses a need to study funding and teacher characteristics. Further research involving individual school districts and teacher characteristics may support discovery of ways to address school level achievement across individual school districts. The amount of money provided for teachers in each district is a set amount not accounting for degree level or National Board Certification. Within the scope of curriculum characteristics, teacher characteristics are related to school achievement according to previous research (Coleman Report, 1968; Chetty, Friedman, & Rockoff, 2011; and Hanushek, 2016), but it is not present as a factor in school achievement as defined by the MAEP State Department of Education Information (Mississippi Department of Education, 2014). Teacher characteristics does affect student achievement in the classroom, although there has not yet been an effective way to measure teacher effectiveness in the classroom on student achievement

DEDICATION

My dissertation research study is dedicated to my wife, Vonda, for your continual prayers, support, encouragement, and understanding throughout this process. I appreciate you for always believing in me and my ability to reach this major accomplishment in my life. You have been my biggest supporter even when I got discouraged along the way. Thanks for always reminding me I can accomplish anything as long as I keep God first and apply myself. Second, I dedicate this research study to my two daughters, Alexandrea and Alexis, for your continual support throughout the process. Last, I dedicate my research study to my parents, Alonzo and Dianna Phillips, for continually praying for me and providing me with words of encouragement.

LIST OF ABBREVIATIONS AND SYMBOLS

MAEP- Mississippi Adequate Education Program

ACKNOWLEDGEMENTS

I would like to express my sincere appreciation to my dissertation chair, Dr. Susan McClelland, for your support during this process. Further, I am appreciative to my committee, Dr. RoSusan Bartee, Dr. Larry Hanshaw, and Dr. Cecil Weeks for everything you have done to assist me in completing a life-long dream. Dr. McClelland, you have provided encouragement so many times, offered direct advice, and desired the best for me from the start of this process. You picked me up along the way, and I am appreciative for your desire to serve as my Dissertation Chair. Dr. Bartee, I am forever grateful for the countless times you provided feedback along the way. You have provided a countless number of hours assisting, editing, and providing support during this time. You have taught me a sincere appreciation for setting deadlines and maintaining them. I will carry this skill with me in my professional practice. You encouraged me many times, and I will seek to pay it forward to others in the future. Dr. Hanshaw you have provided me so much support that I cannot speak of what your generosity has meant throughout the process. You have pushed me, encouraged me, listened to me yet kept me focused on the end result. I will always take the thought with me to remember to help someone along the way so that my living will not be in vain. Dr. Weeks, thanks for being the outstanding educator and mentor you have been to me from my Master's program through the completion of my Ph.D. program. You have always encouraged me and believed in my abilities.

Further, I will be forever grateful for all of the friendships formed during this process. I have met outstanding individuals whom I look to continue our professional collaborations in the future.

Above all, I am grateful to God for giving me the mind, the perseverance, and strength to see my dissertation through to the end.

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Chapter I

Introduction

School funding is vital to the teaching and learning process within classrooms in public schools across America. This statement is one most would take for granted in America, but it is not one free of diverse opinions or controversy regarding public school funding and its relationship to student achievement. Hidden beneath the veneer of this statement and at the heart of the controversy is the distinction between "equity (equalization of spending) and adequacy (spending sufficient to produce high level student outcomes)" (Leonard and Box, 2010, p.4). With that distinction in mind, Hanushek's (2014) assertion "How money is spent is much more important than how much is spent" (p. 24) characterizes one aspect of this debate; on the other hand, other researchers agree with Verstegen and King (1998) that "resource inputs make a difference in improving educational outcomes for students" (p. 243). "Funding level, level of resources, and/or inputs" (Leonard and Box, 2010, p. 3) were dismissed by others (Hanushek, 1989; Hanushek,1996) as being ineffective in relation to increasing student achievement. It would seem, then, that equitable school funding and adequate funds spent on needed school resources is a combination that is likely needed to ensure that students are provided a quality education regardless of their background. In fact, since its inception in 1994 and implementation in 1998, the Mississippi Adequate Education Program's (MAEP) "purpose was to increase equity and to provide adequate funding for the poor districts in the state" (National Center for Education Statistics, 2008, p. 6). The MAEP was designed to provide schools performing at a lower level equal funding of other districts. School districts are measured by a state

accountability model with a score assigned to each school district. Schools can receive scores from 1.0 to 5.0 with a score of three representing adequate level performance (NCES, 2008, pp. 1-2). In the "Basic Program Support" section of the NCES Report: *Access Quality Education*, (1998), the agency reports the "new funding formula works as follows: Base Cost x district AD + At-risk Student Add-on + Other add-ons (special education, transportation, vo-tech, gifted education, alternative education, and health) = ADEQUATE EDUCATION PROGRAM COST – Local Contribution (28 mill local levy capped at 27% of Program Cost) = State Program Cost (+/- hold harmless adjustment) + Local Levy (over) 28 mills = TOTAL REVENUES AVAILABLE TO LOCAL SCHOOL DISTRICTS. The total cost of the MAEP in its first year was approximately $1,275 million, with the state's share being 81.3% and the local share being 18.7%" (NCES, 1998, pp.6-8).

The perspectives on school funding and the controversy born of different perspectives broadens to other important concerns. For example, in Mississippi, as across the nation, many school districts have focused on high stakes testing, yet schools need to have allocated to them appropriate financial and material resources to generate high academic achievement (Miles & Rosa, 2006). Academically challenged, as well as minority students, are affected by the lack of funding in schools (Cohen-Zada, Gradstein, and Reuven, 2013). The lack of funding in schools does not abate the necessity to receive an opportunity to receive a quality education, regardless of the socioeconomic status of families and students within all schools. However, some key questions scholars are raising focus on how much funding is needed (Hanushek, 2016) and at which area of schooling within a district (i.e., instructional materials, teacher quality/incentives, technology) money should be spent (Picus & Wattenbarger, 1996).

A further exploration of perspectives germane to the complexities of these issues will present an opportunity to potentially develop solutions regarding funding and student achievement problems in Mississippi. For example, many state constitutions contain general education provisions that "strongly encourage the legislature to fund and maintain an education system" (Bauries, 2011, p. 302). Over the years, as seen in the divergent views previously mentioned, debates have erupted over education and state finance reforms. Ludwig and Bassi (1999) pointed out "despite an enormous body of empirical research, there is currently little consensus about whether additional education spending will, on average, improve student test scores, the most commonly used measure of student learning" (p.385). Commonly, test scores have been used to compare student performance. However, with the use of different tests in different states and different inputs to support education and learning at wildly different levels, achieving desired student outcomes from various school finance metrics has produced a complex picture of school finance in relation to student achievement that challenges an easy understanding of the many underlying and interrelated issues involved (Lockridge & Martin, 2014).

With regard to schools and social policy, Rothstein indicates that "inadequate schools are only one reason disadvantaged children perform poorly. They come to school under stress from high crime neighborhoods and economically insecure households. Their low cost day care tends to park them before televisions, rather than provide opportunities for developmentally appropriate play. They switch schools more often because of inadequate housing and rents rising faster than parents' wages" (2008, p. 53). One can only speculate how these circumstances might affect students on days involving school exams or when students may have to focus on school prep sessions for either state mandated tests or preps focused on making the best score possible

on the ACT or SAT examinations, given that a sports scholarship or academic full ride (or both) may be hanging in the balance. Rothstein (2008) believes that disadvantaged children tend to have more health-related issues which can cause the students to have a lack of focus and miss school on a more frequent basis. In addition, their parents tend are less educated and the expectations are normally lower for their children. "Nearly 15 percent of the black/white test score gap can be traced to differences in housing mobility, and 25 percent to differences in child and maternal health" (Rothstein, 2008, p. 53).

Given the above snapshot of controversial perspectives and underlying issues affecting the support of public education and student achievement, it may be instructive to examine data that gives a national perspective to the bottom line of this research: How have students performed in the state of Mississippi, given the state's control over and approach to funding and supporting its public schools? How have any external factors beyond the state's direct control affected the state's constitutional mandate to provide an adequate and equitable publicly supported school system? With revenue shortfalls impacting funding of schools and other state services, such situations must be distinguished from cuts triggered solely due to internal legislative decisions. For example, in 2008-2009, the same time frame of the aforementioned revenue drop, the state of Mississippi was among 45 states that made cuts in services, primarily due to a national economic downturn (i.e., the recession) coupled with state-level revenue woes. Services were cut in three areas in Mississippi: (1) K-12 and Early Childhood Education, (2) Higher Education, and (3) the State Workforce. Although the state achieved "the lowest achievement scores based on No Child Left Behind accountability measures" (Quality Counts, 2008), it did manage achievement gains state-wide between 2002 and 2004 in 4th grade reading and math (Poulin, 2016). Secondly, Leonard and Box (2010) in their summary of research that

investigated the impact of funding for the MAEP and whether or not this program impacted school accreditation levels concluded that schools do benefit from increased funding levels as seen in increased student performance.

Although achievement was not evident across the board, the above results give hope that similar results may become consistently reported for all grades and subjects in school districts funded and supported by MAEP. Still, the sense of how much money is appropriate eludes definition. Certainly, the level of funding suggested by Odden, Goetz, and Picus (2007) --$9391-- to reach adequacy based on national per pupil spending level has not been reached in Mississippi" (2010, p.16). "And, given the suggestions of Hanushek, Odden, and others, as to the importance of how additional funding is spent as well as the amount, it is equally important for research and work to be undertaken which will identify within the schools in Mississippi those factors under the control of the schools which can be added, modified and/or enhanced to produce higher levels of student achievement" (Leonard & Box, 2010, pp. 16-17).

It is interesting to note that the research above suggests that Mississippi's 2008 per pupil spending, $8735, (MS Department of Education, 2008) is below the $9391 level suggested by Odden et al. (2007) which means that per pupil is about 93% of where it is suggested to be. However, given the high achievement in grade four during the 2002-2004 time frame, it can be reasonably inferred that Mississippi's per pupil expenditure of $6634 (a 70% ratio) suggests that the position of Hanushek (2014) supported by earlier achievement outcomes (i.e., 2002-2004) requires further investigation.

National Report Card Perspectives: 2007-2013

The National Report Card perspective is an informative view of public school funding in that it "seeks to evaluate whether states are fairly funding their public schools based on four

indicators: funding level, funding distribution, effort, and coverage" (Baker, Sciarra, & Farrie, 2014, p. 30). Given the time frames of this study--2011-12, 2012-13, and 2013-14--and the five year cycles covered by the National Report Card, findings from two reporting periods (1) National Report Card: 3rd Edition (i.e., covering 2007-11) and (2) National Report Card: 5th Edition (i.e., covering 2008-2013), will be presented to evaluate Mississippi's funding position compared to positions of other states with respect to four measures used by the National Report Card to examine "whether a state is making the necessary effort to develop a fair funding system" (Baker, et al., 2014, p. 30). Why measure "fairness?" The question is an interesting and important one when used as a means to determine how states compare in their efforts to educate citizens within their borders. In response to this query, Baker, et al., 2014, indicated that funding levels will be different in order to provide every child with the same opportunities because of the various needs of students; the location, teacher salaries, district size, and various student characteristics must be considered; therefore, funding must be higher for students residing in poverty areas, and, conversely, student poverty remains crucial in affecting funding levels. State systems' delivery of greater levels of funding to higher poverty versus lower poverty settings seems to be a consistent theme regarding funding, poverty levels, and student performance.

Outlined below are the definitions of the four fairness measures used by the National Report Card: 3rd Edition (Baker, et al.):

(1) Funding level---measures the overall level of state and local revenue provided to school districts and compares each state's average per pupil revenue with that of other states and is adjusted to reflect differences in wages, poverty, economies of scale, and population density.

(2) Funding distribution---measures the distribution of funding across local districts within a state relative to student poverty and shows if a state, on a scale of 0%-30% child poverty, is providing more or less funding to schools based on their poverty concentration.

(3) Effort---measures differences in state spending relative to state fiscal capacity. 'Effort" is defined as the ratio of state spending to state gross domestic product (GDP).

(4) Coverage---measures the proportion of school-age children attending the state's public schools, as compared with those not attending the state's public schools (primarily parochial and private schools but also homeschooling). Overall, effort is also impacted by the median household income of the state's students in public schools (versus the more affluent households that simply opt out of public schooling) and the overall effort to provide fair school funding. (pp.6-7)

According to Baker et al. (pp. 10-31), Mississippi received the following evaluation on the four factors outlined above from the National Report Card covering the five-year period from 2007-2011:

(1) Funding level: Mississippi spent $58 more in 2011 ($7461) than in 2007 ($7403). The state's ranking compared to other states during this period was 46th in 2007 and 45th in 2011. By comparison, Alaska ($17,314), Wyoming ($17, 126) and New Jersey ($16, 845) ranked 1-3, respectively in 2007 and 3, 1, and 5, respectively in 2011. States with lower rankings on Funding Level over the same five-year period were Oklahoma, Arizona, Utah, and Idaho.

(2) Funding Distribution: States are judged on this fairness measure if a district with 30% student poverty receives more than 5% more state and local revenue per pupil compared to a district with 0% poverty. Over the five-year period from 2007-2011, Mississippi received grades of C in 2007 and 2011 and grades of D for the other three years (2008-2010). These grades indicated that the state did not spend any more in per-pupil spending in low/no poverty districts ($7732) than in districts with poverty as high as 30% ($7329) during the five-year period from 2007-2011. The difference in spending over this period was statistically insignificant and regressive. Mississippi was among 12 other states performing similarly on this fairness measure (i.e., in particular, AL, LA, and TX among Gulf Coast states).

(3) Effort: On this measure (state funding of schools as a function of the state's Gross Domestic Product), Mississippi received grades of B in 2007 and 2008 and C for the years 2009-2011. Although the relationship between fiscal capacity (GDP) and effort is not strong, Mississippi's effort index remained virtually flat over the time frame examined in this study (.040, .041, .039, .037, and .036, respectively). Hence, during different economic periods (recessionary or otherwise), Mississippi's effort remained relatively low or unchanged (per capita real GDP = $29,363 in 2007 and per capita real GDP = $29,337 in 2011).

(4) Coverage: coverage is an indicator that measures both the extent to which school-aged children attend public schools and the degree to which there is economic disparity between those within and outside of the public education system. A higher percentage of students who enroll in public schools requires a greater effort be made to fund those schools. This effort should increase where there is a higher

concentration of poor students in public schools. In 2007, 88% of Mississippi's 6-16 year olds were in public schools and Mississippi's Private/Public Income ratio was 193% (i.e., private schools spent 1.93 times more on this age group than public schools). In 2011, Mississippi's Private/Public Income Ratio was 188% (i.e., private schools spent 1.88 times more on this age group). Because wealthier parents have mostly opted out of public schools, Mississippi's rank has been 40th in 2007 and no higher than 44th in 2011 compared to other states; see also "Coverage" definition, Baker, et al., 2007, p.7. (pp. 10-31)

(5) Pupil-to-Teacher Ratios and Fair School Funding and Resource Allocation

Money spent on salaries and benefits for teachers and staff personnel is a large component of district budgets (Baker, et al., 2014). Hence, "the fairness with which a state distributes funding directly impacts districts' ability to appropriately staff their schools. A fair funding system would allow high-poverty districts to hire greater numbers of staff relative to their school population in order to provide the extra resources and supports to meet greater student needs. Multiple experimental-design research studies [see for example, Mostellar, F. (1995) "The Tennessee Study of Class Size in the Early School Grades". The Future of Children, 5(2)] have shown that students who are assigned to smaller classes have better academic outcomes." (Baker, et al. 2014, p.34). In Mississippi from 2009-2011, the pupil-to-teacher fairness ratio was 102%. Hence, Mississippi allotted about the same number of students (15-16 per teacher) in districts with low poverty as in districts with high poverty. This ratio still puts high poverty school districts at a disadvantage in terms of meeting the greater needs of students in high-poverty concentration areas of the state.

"In fact, students from disadvantaged backgrounds, both racial and economic, experience larger gains from smaller class sizes than middle-class white students" (Baker, et al., 2014, p. 34).

The second National Report Card, 5th Edition, (Baker, Farrie, Luhm, & Sciarra, 2016) provides the following findings with respect to the four fairness measures mentioned above. In particular, for the state of Mississippi the findings in the four areas were as follows:

(1) Funding Level: Mississippi's per-pupil spending, over the five year period from 2008 ($7891) to 2013 ($6746) earned the state a rank of 44th when these predicted regression equation results are tied to adjusted funding for districts at a 20% poverty level; a level that is near the national average. Previous rankings were 46th in 2007 and 45th in 2011. Oklahoma, North Carolina, Arizona, Utah, and Idaho were ranked lower (45th-49th), respectively.

(2) Funding Distribution: As in the previous five year cycle, school districts with low (0%) high (30%) poverty compared to districts with high (30%) poverty were funded about the same. That is, districts with low poverty got around $6776 compared to $6731 in high poverty areas of the state in 2013. Hence, MS was among 18 other states that provided "no substantial variation in funding between high poverty and low poverty districts; this earned Mississippi a grade of C" (Baker, et al., 2016, p. 6).

(3) Effort: Mississippi earned a grade of A for effort in 2013, with a ratio of .041 resulting from the comparison of its local and state spending on education compared to its gross state product (GSP). In other words, Mississippi was 9th in the nation in 2013 spending 4.1% (.041 x 100) of its GSP ($31,642) or per capita GDP (2008 dollars). Like many other states, Mississippi's Effort Index was not without problems.

From 2008-2013, Baker et al. indicated that "Mississippi's Effort Index dropped -8% from 2008-2013, giving the state a rank of 24th in the nation. From 2012 to 2013, there was another drop of -2% making the state rank 23rd. By comparison, the overall range for all states was from a low of -9.33% (2012) to 10.34% (2013). In the 2008-2013 time span, Mississippi remained at or near the middle of the pack (4.1% Effort Index) compared to the Effort Index of other states (i.e., Vermont had a high of 5.3% and Hawaii had a low of 2.5%)." (2016, p.8)

(4) Coverage: The Coverage Index, again, measures "the share of school-aged children enrolled in public schools and the degree of economic disparity between households in the public and nonpublic education systems" Baker, et al., 2016, p.9). It should also be remembered that when wealthier families opt out of public schools, there is left a concentration of less wealthy and/or poor families to provide for the educational needs of students of poverty who have previously found it difficult to influence the public and political will that must act favorably to provide for their greater educational needs (Baker, et al., 2016). On this measure of fairness, Mississippi "ranked 43rd in the nation with 88% of its school-aged children enrolled in public schools and its ratio of non-public/public income was 185% [i.e., nonpublic school income was 1.85 times larger than public school income for among families of school-aged children]" (Baker, et al., 2016, p. 10).

(5) Pupil-Teacher Ratios and Fair School Funding and Revenue Allocation

With regard to Early Childhood Education, Mississippi was 11th in the nation with 47% of its 3yr olds and 4yr olds in public schools. By comparison, the "total enrollment of 3- and 4-year olds ranges from a high of 78% in the District of

> Columbia to a low of 29% in Idaho" (Baker et al., 2016, p. 14). With regards to Wage Competitiveness, "no state provides the average teacher with a salary that is more competitive than no-teachers' salaries, though Vermont, Montana, and Wyoming are the most competitive" (Baker, et al., 2016, p. 15). In Mississippi, teachers can expect to earn only "79% of the salary paid to their non-teacher counter-parts" and "by the age of 45, teachers can expect to earn only 68% of what their non-teacher counterparts earn ranking Mississippi 41st in the nation" (Baker, et al., 2016, p. 17). Mississippi is ranked "38th in teachers per 100 students at the 10% poverty level" and it has a "regressive stance with regards to staffing fairness" in that it does not hire more staff/teachers in high poverty areas compared to low poverty areas where greater numbers of teachers/staff are needed to meet the needs of high poverty concentrations of students (Baker, et al., 2016, p.18).

It seems clear that a better understanding of revenue spending and student achievement may be reached and enhanced by research efforts that aim to clarify the relationship between funding levels, funding priorities, and selected variables related to student achievement at the district level in the state of Mississippi. The research of this dissertation is intended to address this task.

Funding Scenarios

School districts within Mississippi receive funding from the Mississippi Adequate Education Program each school year. The funds provided to each school district are designed to help meet the needs of students within the districts. The districts are responsible for utilizing the funds, which are composed of federal, state, and local funds to help support the school district. The federal, state, and local funds provided to the school districts provide a source of income to

meet the needs of the students in the districts. However, the local fund contribution varies from district to district depending upon the contribution of the local government.

The three funding scenarios explained below play an important role in determining the funding for each school district. Scenario (a) considers all of the funding from MAEP, local tax, and federal tax dollars. Scenario (b) considers funding from MAEP, federal tax dollars, and local tax dollars caused by a possible tax base growth. Scenario (c) considers funding from MAEP, federal tax dollars, and when local taxes cannot be raised due to millage rate caps as mentioned above.

All school funding data used to evaluate particular scenarios in this study were received from the Mississippi Department of Education. Additional information needed to evaluate particular scenarios in this study will also come from the (a) Municipalities, and (b) the Mississippi State Tax Commission as needed.

Impact of MAEP Funding

The Mississippi Adequate Education Program impacts the funding of schools in Mississippi (Stedak, 2014). The MAEP formula, as it is known, distributes funds to schools utilizing a formula system that is grounded in state statue as defined by MS Code Sections 37-151-1; 37-151-5; 37-151-6; 37-151-79; 37-151-81; 37-151-83; and 37-151-85 (Mississippi Department of Education, 2015). The MAEP formula is defined as:

> The state formula used to establish adequate current operation funding levels necessary for the programs of each school district to meet a successful level of student performance as established by the State Board of Education using current statistically relevant state assessment data. (Mississippi Department of Education, 2015).

The goal of the MAEP is to provide school districts funding for student needs within each school district in Mississippi (Mississippi Department of Education, 2015). Two factors affecting the funding of local school districts are local taxation rate and valuation of properties within communities. State funds provide the primary financial resources for public education in Mississippi. Within the community, property values in the community contribute to the local tax base. Additionally, real property, commercial property, and industrial property can have an effect on the local tax base. The Mississippi Department of Revenue (2016) defines real property as the land and anything which grows on the personal property of tax payers within a community; Commercial property is identified as property owned within the community for business purposes; and Industrial property is identified as property used by companies or persons for the manufacturing, warehouse, or assembly of items.

The Mississippi Department of Revenue (2016) assessment ratios are established by the Mississippi Constitution for property. In Class I, it includes single family residential property assessed at 10% of the true value of the property. Class II consists of all other real property excluding those included in Class I or IV are assessed at 15% of the true value. Class III consists of personal property not including motor vehicles and it is assessed at 15% of the true value. Class IV consists of the public utility property excluding the railroad, airline property, and motor vehicles. Items within this class are assessed at 30% of the true value. Class V, which consists of motor vehicles, are assessed at 30% of the true value.

All properties located within each local community have an effect on the tax base for local communities. For example, in Carroll County School District, the students ride to school on aging school buses, utilize portable classrooms at least 20 years old or attend classes in depreciated buildings, and use textbooks considered outdated for student use (Mader, 2015). In

response to Mader, the Superintendent of Carroll County Schools, Billy Joe Ferguson, wrote a letter on behalf of his schools. Within his letter, he highlighted the ongoing concerns in the district. First, he focused on the district's lack of funds to repair buses, which results in the necessity to borrow buses from neighboring school districts. Second, the students' use of aging textbooks is due to the lack of funding to purchase textbooks in the district. Third, the buildings are old with the most recent building being constructed in the district in 1956. Fourth, due to constraints of the funding in the district, the Superintendent accepts only $18,000 a year as a salary and accepts no reimbursements for any travel costs (Better Schools, Better Jobs, 2015).

When the MAEP's allocation is limited or not fully funded, local school districts often request income from local revenue sources in terms of an increase in local ad valorem taxes. The millage rates in Mississippi school districts are set at a minimum 28 mills and the maximum amount is capped at 55 mills. Districts needing to go above the 55 mill cap can only do so if the higher millage rate is in place to pay school debt (Augenblick & Myers, 1993).

Additionally, MAEP funding is set to provide funding allocations on a per child basis for each school district. The funding formula is designed to give schools an equal share of the funds provided in the budget each year (Mississippi Department of Education, 2015). The model predetermines the expected needs of the local school districts to meet the needs of students. The funding of the formula is the same for each district, with the gap in funding caused by the local tax bases (Mississippi Department of Education, 2015). Within some school districts, lack of industries and businesses leads to a lower local contribution to the local school system. In other districts, school systems may see an increase in their local contributions because of continued growth in the form of industry and businesses.

The diverse needs of students must be considered when budgets are being developed (Miles & Rosa, 2006). For example, struggling learners may require additional teachers, which is included in the general school funding formula, and their funding is considered the 5% at-risk funding aspect of the MAEP formula (Mississippi Department of Education, 2015). The current formula may not allow for an additional teacher based upon the number of students enrolled in the school. Therefore, the failure to fully fund MAEP takes away the additional revenues needed to meet the instructional needs of all learners. "At-risk students in Mississippi are identified as those who are participating in the federal free lunch program. Their families have a household income at or below 185% of the federal poverty level" (PEER Report #436, 2002, p.10). In Mississippi public schools, the free and reduced lunch information for the school year 2012-2013 was:

- Total Enrollment: 492,874
- Paid Lunch: 139,928
- Approved Free Lunch: 314,712
- Approved Reduced Lunch: 38,234
- Free Lunch Percentage: 63.85%
- Reduced Lunch Percentage: 7.76% (Mississippi Department of Education, 2016).

The children identified for free and reduced meals are determined based upon set criteria from the National Food School Lunch program. According to the Mississippi Department of Education (2016):

> Children from families with incomes at or below 130 percent of the poverty level are eligible for free meals. Those with incomes between 130 percent and 185 percent of the poverty level are eligible for reduced-price meals, for which students can be charged no

more than 40 cents. (For the period July 1, 2007, through June 30, 2008, 130 percent of the poverty level is $26,845 for a family of four; 185 percent is $38,203).

Also to be considered are the politically tinged decisions made by legislatures. “In other words, legislators divide the state’s available tax revenues among all the state’s endeavors on the basis of political negotiations” and “in most states, the foundation level of funding for schools is largely determined through political negotiations” (Augenglick, et. al, 1997, pp. 74-75). Across this landscape, however, there is still the problem of figuring out why school achievement fails to respond to great infusions of state or federal funds in any consistent and/or predictable way. “On occasion, a specific study might find…factors to be correlated with student performance, but, taken together, the vast proportion of results across a wide variety of studies, has found no statistically significant connection between the standard resources available to schools and the amount of learning taking place within the building” (Hanushek, 2016, p. 24). Other equally qualified researchers, however, indicate that Hanushek’s work (1981, 1986, 1989) was “shown to be flawed and outdated” (Laine, Greenwald, & Hedges, 1996, p. 45). They further indicate that “when the flaws in Hanushek’s work are corrected, relations between school resource inputs and student outcomes, including achievement, were substantially more consistent and positive than Hanushek had been able to elucidate. The typical relationship between school resource inputs and student outcomes was found to be positive and large enough to have implications for educational policy. Indeed, the median magnitude of some of the coefficients actually appeared to be too large to be plausible” (Laine, Greenwald, & Hedges, 1996, p.45). There still seems to be much work that can be done to add additional information to our understanding of how states may influence the relationship between funds for public schools and the high achievement of students all stakeholders desire.

Statement of the Problem

The problem in this study may be formulated as follows: Is there a relationship between student achievement and selected variables related to Mississippi's MAEP Program, given the three funding scenarios described earlier? The detailed description of the MAEP and its relationship to revenues derived from ad valorem taxes explains the primary basis for revenues that support public education in Mississippi. Hence, a secondary problem in this study is to identify a prediction equation based upon selected school characteristics and derived funding levels (using MAEP data) that may predict student achievement.

Purpose Statement

The primary purpose of this quantitative study is to examine the relationship between school district achievement and funding of school districts in Mississippi. A secondary purpose is to examine selected variables relating student achievement to MAEP funding in order to find predictors of student achievement. The quantitative research spotlights the school district achievement data for the academic years of 2011-2012, 2012-2013, and 2013-2014 and the level of funding received from MAEP. The independent variable is the funding amounts provided to all Mississippi school districts (n=145) for the academic school years of 2011-2012, 2012-2013, and (n=143) for 2013-2014. The dependent variable is the students' test scores used to determine the letter grade for the respective school district. The dependent variable is determined using the school districts' numerical representation of achievement level equivalent to the letter grade earned by a school district.

Research Questions

The following research questions will frame this study:

(1) Is there a relationship between the allocated school funds and school district achievement scores for the school years 2011-2012, 2012-2013, and 2013-2014 for Mississippi school districts given the scenarios below (a-c) that influence school district funds? :

a. MAEP + Federal + Local funds of all school districts (excludes b-c);
b. MAEP+ Federal + Local funds increase caused by tax base growth;
c. MAEP + Federal + Local funds when taxes cannot be raised due to a millage cap rate

(2) Is there a relationship between derived levels of school funding and district-level achievement scores for the years 2011-12; 2012-13; and 2013-14?

(3) Is there a relationship between (1) all types of grades earned by school districts, (2) three derived MAEP funding levels, and (3) three designated school related characteristics?

(4) Given the use of certain predictor and criterion variables identified in this study, what is the prediction equation for the relationship between MAEP funding levels, three school related curricular characteristics, and grades earned by school districts?

(5) Given the use of certain predictor and criterion variables identified in this research, (a) what is the size or percent of variance accounted for by each of the predictor variables and (b) are any of the variances accounted for (sizes) statistically significant?

Research Hypotheses

Hypothesis One: There will be no significant relationship between school funds allocated for scenarios (a-c) and district-level achievement scores in Mississippi school districts for 2011-2012.

Hypothesis Two: There will be no significant relationship between school funds allocated for scenarios (a-c) and district-level achievement scores in Mississippi school districts for 2012-2013.

Hypothesis Three: There will be no significant relationship between school funds allocated for scenarios (a-c) and district-level achievement scores in Mississippi school districts for 2013-2014.

Hypothesis Four: There will be no significant relationship between school achievement scores, disaggregated types of district-level achievement scores, original levels of MAEP funds received by school districts, derived levels of MAEP funding, three school-related curricular characteristics, assessed value designation, and millage cap values for the years 2011-12; 2012-13; and 2013-14.

Hypothesis Five: There will be no difference in the size of the unique contribution of different levels of derived funding and the size of the unique contribution of different school-related curricular characteristics toward explaining the variance in different district-level school achievement scores.

Hypothesis Six: There will be no statistically significant unique contributions to the prediction of school district achievement scores made by derived levels of school district funds and school-related curricular characteristics as *predictor variables* and school district achievement scores as the *criterion variable* for school districts in the years 2011-12; 2012-13; and 2013-14.

Significance of the Study

MAEP, for reasons explored earlier, has not kept up with funding mandates resulting in short falls in school district budgets affecting the needs of Mississippi students. There is an escalating concern among educators that the amount of funds being provided to school districts

will not allow all students to receive the same quality of education envisioned by the promise of MAEP. The amount of funding provided by MAEP has become a significant area of contention because the state of Mississippi has only fully funded MAEP twice since its initial passage; "underfunded a total of about $980 million since the 2007-08 school year" and "education funding has been reduced every year until the most recent 2012 session where it was increased about 20 million" (Harrison, 2012, p 1 of 3). Harrison (2012) went on indicate that State Senator Hob Bryan, D-Amory, one of the chief architects of the MAEP when it was passed in 1997, said local school districts should not be punished because of actions by the legislature. Once the formula was passed, the law was also passed which required the legislature to fully fund the formula. It was never expected nor believed the legislature would break a law created by them. (Harrison, 2010, p. 2). Nevertheless, school administrators are held to producing high learning outcomes for students while continuing to receive fewer funds than what was promised by law.

Therefore, the significance of this study is grounded in determining the relationship between school funding and school achievement for all school districts in the state of Mississippi. The Mississippi Adequate Education Program was designed "to ensure that every Mississippi child, regardless of where he/she lives, is afforded an adequate educational opportunity, as defined by the State Accountability System" (Mississippi Department of Education, 2015, p.1). Determining the nature and magnitude of how certain variables influence student achievement (district scores) might yield important insights useful to making decisions affecting schools and how best to achieve high and consistent levels of student achievement. As a result of this study, findings that further clarify MAEP's influence on the education of students in school districts may then be used to better inform teachers, students, administrators, legislators

and other stakeholders about important relationships between school achievement and the Mississippi Adequate Education Program.

Limitations of the Study

This study will be limited to data and other information made available as requested to complete this research. The population used in this study will be limited to students in school districts (n=145 districts) in Mississippi during the years 2011-12, 2012-13, and (n= 143 districts) in 2013-14. For statistical analyses performed in this study, only district-level data (as opposed to data on individual schools within a district) will be used for planned analyses. Any transformations of data from requested sources will be explained and limited to generally accepted procedures used to accomplish chosen statistical analyses.

Definitions in the Study

1. MAEP: Mississippi Adequate Education Funding. The state formula used to establish adequate current operation funding levels necessary for the programs of each school district to meet a successful level of student performance as established by the State Board of Education using current statistically relevant state assessment data (MS Code Section 37-151-1)
2. Funds: The money that has been allocated within the State of Mississippi's budget for use by public schools (Stedrak, 2014).
3. General funds: Funds that come from general state collections and pay for many key services within the state (Mississippi Economic Policy Center, 2015).
4. Special funds: Funds that are established through state stature or constitutional provision that earmarks the funds for a specific purpose – Example: Highway Department Funding (Mississippi Economic Policy Center, 2015).

5. Federal funds: Funds that are earmarked by the U.S. government for specific state programs (Mississippi Economic Policy Center, 2015).
6. Ad Valorem Tax: Property tax, or ad valorem tax, is a tax imposed on the ownership or possession of property and is generally based on the value of the property. In Mississippi, all property is subject to a property tax unless it is exempt by law (Mississippi Department of Revenue, 2016).
7. Operational Millage: The minimum local tax support required by law to maintain local education programs (Mississippi Department of Education Accreditation Standards, 2015).
8. Allocation: The funds provided for employees, management, and materials for local school districts (Haelermans, Witte, & Blank, 2012).
9. School finance litigation: "...is concerned with the economic rather than the racial differences in school settings" (Glenn, p. 66, 2006).
10. Tax base: This includes the revenue provided for local school districts to include the property taxes for privately owned building as well as commercial buildings in a local community (Poulin, 2010).
11. Adequacy: "Involves giving schools the resources needed to educate each student up to an objective standard" (Glenn, 2006, p. 66).
12. Equity: "Most commonly, equity is measured in terms of the variation in per-pupil revenues among school districts in a single state" (Augenblick, Myers, & Anderson, 1997, p.63).

13. Education production function: Used in "research studies… to describe the relation between school resources and student achievement" (Laine, Greenwald, and Hedges, 1994, p. 45).
14. Metaphor of the factory: "Studies that view schools as [places] producing some amount of achievement from a certain level and mix of school resources and student characteristics" (Laine, Greenwald, & Hedges, 1994, p. 45).

Summary of Chapter One

A critical issue concerning many stakeholders in Mississippi centers around the funding of public schools. According to Israel, Beaulieu, & Hartless (2001), tax increases in some local communities can result in negative effects on schools (i.e., people leave a district) rather than the positive effects associated with providing more money to schools (i.e., communities support the increase). Confounding the issues of getting the most mileage out of available taxes from MAEP's funding formula is the problem of how funding levels and selected school characteristics relate to student achievement, given that the dynamics of this relationship change from district to district and even within districts; sometimes for issues under the control of schools and sometimes due to issues beyond the control of schools.

Structure of Dissertation

Chapter 1 includes an introduction to provide a general overview of the issues addressed in the dissertation. The introduction examines the problems found and the need for the research in the proposed area. Further, the dissertation identifies the purpose, the limitations, and the significance of the research study. Chapter 2 presents the literature review in a logical, sequential manner to outline the sources used within the dissertation. The research in the chapter focuses upon the research dealing with school funding and how the lack of funding affects the

achievement of students in schools. Chapter 3 focuses upon the selected methods proposed for use in the research study. The methods section seeks to explain the design of the study and the proposed method for interpreting the data. Chapter 4 analyzes the collected data from conducting the actual research project in the proper setting. The data collected will be entered into the SPSS and analyzed to determine how the data impacts the study. Chapter 5 contains the culmination of the project since the study is, in fact, brought together as a culmination of research. This chapter provides the recommendations for school funding related to student achievement as a result of the research study. The final chapter provides a guide to next steps and recommendations for how the study could help to impact our educational world.

Chapter II

Literature Review

Chapter II provides an examination of research in the literature that focuses on a synthesis of approaches illuminating issues about school funding and student achievement in public schools (i.e., metaphor of the factory research versus education function research) and weaknesses of both schools of thought. Specifically, five approaches will be reviewed in a section titled Research on Approaches to School Funding. The second section of the literature review will focus on the Mississippi Adequate Funding Program (MAEP), which determines how funds are awarded for public school districts in the state of Mississippi. The third part of the literature review will center on how taxation and valuation mandates affect the funding of public schools. Finally, the fourth part of the review targets legal cases affecting funding in public schools. The information gathered in the literature review will help to promote understandings among stakeholders regarding the impact that funding allocations and other variables have on student achievement within Mississippi school districts.

Research on Approaches to School Funding

In discussing efforts to provide research-based directions to the problems of school finance (i.e., see The School Finance Redesign Project: A Synthesis of Work to Date), Hill (2008, p.11) indicates "…a focused and efficient use of public funds is a necessary element of any strategy for increasing student learning. Some strategies will also additional spending. However, a full strategy must also include performance incentives, rigorous use of data on

processes and outcomes, and efforts to increase the capacities of individuals (teachers and administrators) and organizations." The four approaches listed below will encompass the concerns expressed by Hill, and individual states, such as Mississippi, will have to decide which path will best address the relationship between available funds and student achievement. According to Augenblick, Myers, and Anderson (1997, pp.75-76) the following approaches have characteristics as summarized below:

1. **Historical Spending Approach**.
   (a) The state sets a base-cost level using the actual expenditures of school districts in a prior year.
   (b) The approach is easy to calculate because it is based on actual spending data.
   (c) Free of political considerations, the historical spending approach assures that state support keeps pace with both inflation and changes in the way educational services are provided.
   (d) This approach improves the predictability of state support.
   (e) A disadvantage appears if spending in previous years was not adequate; a larger increase in funds may be necessary to meet education needs than what is actually given by the state.
   (f) District spending, which influences this calculation, may be influenced by local wealth or preferences and not reflect actual need.
2. **Expert Design Approach**.
   (a) Theoretically, it is possible for a group of experts to postulate the needs of a model school district with precision and to associate a standard set of prices with those needs.

(b) The strength of this model is that it specifies in detail the resources thought to be necessary while standardizing the prices of such resources.

(c) The model's weaknesses are that it implies there is one best way to deliver a service and increases the likelihood that the legislature will be interested in closely examining how districts actually spend state funds.

(d) Model often results in a recommendation for much higher funding than is available. This approach requires large amounts of data, some of which may be difficult to obtain.

3. **Econometric Approach**

(a) Approach attempts to take into account the relationship between spending and pupil performance.

(b) This approach uses a complex statistical methodology to explain how funds, in terms of magnitude and spending patterns, influence performance while controlling for the impact of factors such as the socioeconomic characteristics of pupils.

(c) While legislative interest exists around the country, no state has used it to develop a base cost largely because of data problems.

4. Successful Schools Approach

A better approach is to examine actual expenditures in several districts that are viewed as being successful or superior, after eliminating districts with unusual characteristics such as having extremely high family incomes or being very small in size (such as a district of 300 students). [Note: Currently, ***Mississippi*** is in the process of conducting such an analysis (emphasis my own). Thirty successful schools have been identified, and the state has concluded that the cost of doing business in these

schools is reasonable. With this foundation funding level established, the state is also preparing multiple modification factors, to adjust the foundation level in each district to local conditions such as cost of living, enrollment growth or shrinkage, size, student poverty, and other special circumstances; (Augenblick et al, 1997)].

A fifth approach, not included in the above approaches by Augenblick et al (1997), is an approach described by Hanuschek (2016, p. 24) which focuses on ***teacher effectiveness*** and will be similarly summarized, like the above reports, and named, by this author, due to its focus:

5. **Teacher Effectiveness Approach**
   (a) As indicated in the Coleman Report [1968], but with little attention paid to it, ***teachers*** [teacher effectiveness] might be a particularly critical school factor.
   (b) By probing at differences in teacher quality within school schools, [scholars] have found very large impacts of teacher quality on student achievement.
   (c) Admittedly, many teacher characteristics commonly used to measure teacher quality have little, if any impact on student performance (i.e., teacher certification, attainment of advanced degrees, attendance at a specific college or university, or receipt of an advanced degree, mentoring, or professional development).
   (d) The aforementioned measures turn out to be almost completely unrelated to a teacher's effectiveness in the classroom.
   (e) Qualitative differences among teachers have large impacts on the growth in student achievement, even though these differences are not related to the measured background characteristics or the training teachers have received.

(f) Scholars remain in the dark even today as to exactly why some teachers are effective (that is, why some teachers, year after year, have strong positive impacts on the learning of their pupils) while others are not.

(g) In short, it is easier to pick out good teachers once they have begun to teach than it is to train them or figure out exactly the secret sauce of classroom success.

(h) Since most of the variation in teacher effectiveness is actually found within schools (i.e., larger variations between classrooms) and not between schools (Coleman's focus), the critical role of the teacher remained to be clearly documented by future scholars.

With regard to the central component in the above approach, teacher effectiveness, Chetty, Friedman, and Rockoff (2011) "conclude that good teachers create substantial economic value and that the test impacts are helpful in identifying such teachers" (p. i).

The five approaches described here constitute a significant snapshot of what research says about the area of school finance and classroom achievement. Though experts advance different approaches, different methodologies, and interpretation of results, it is clear that most agree there are viable avenues of choice; viable enough to try an approach that may work to produce results that may unravel, once and for all, the conundrum of public support of schools and the high achievement levels for students so greatly desired.

In the sections to follow, more detail will be discussed about the history and intentions to accomplish desired effects from efforts to use public funding to achieve a high pay off with respect to student achievement.

Mississippi Adequate Education Program (MAEP)

Origins and Historical Mandate

Within the Mississippi Constitution of 1868, the state mandated the establishment of schools to serve children between the ages of five and twenty-one years of age. At that time, the schools were expected to maintain at least four months of school each year. School attendance would be an issue addressed within the Constitution of 1868. The first public schools of Mississippi consisted of a school year of a minimum of four months during the year. The local school districts that failed to meet this requirement risked losing their portion of funds provided to them by the state (Mississippi Constitution of 1868, Article 8, Section 5, 2015).

The legislature was given the authority to collect the funds needed for the free education of the students in each county. The legislature's authority allowed it to collect taxes and all schools receive a fair portion of the money based upon the age of the school children (Mississippi Constitution of 1868, Article 8, Section 10, 2015). The schools were funded using a common school fund established by the State of Mississippi. The Mississippi Constitution of 1868 Article 8, Section 6 (2015) delineates how funding was established:

> Sec. 6. There shall be established a common school fund, which shall consist of the proceeds of the lands now belonging to the State, heretofore granted by the United States, and of the lands known as "swamp lands," except the swamp lands lying and situated on Pearl river, in the counties of Hancock, Marion, Lawrence, Simpson, and Copiah, and of all lands now or hereafter vested in the State, by escheat or purchase, or forfeiture for taxes, and the clear proceeds of all fines collected in the several counties for any breach of the penal laws, and all moneys received for licenses granted under the general laws of the State for the sale of intoxicating liquor, or keeping of dram shops; all moneys paid as

> an equivalent for persons exempt from military duty, and the funds arising from the consolidating of the Congressional township funds, and the lands belonging thereto, together with all moneys donated to the State for school purposes, which funds shall be securely invested in United States bonds, and remain a perpetual fund, which may be increased but not diminished, the interest of which shall be inviolably appropriated for the support of free schools.

The Mississippi Constitution of 1868 addressed several areas of the school life for students during this time. The Constitution of 1868 sought to provide the people an opportunity to establish free schools for all students in the state. The financing of the education for the students will consist of taxation of the local community to provide the needed funding (Mississippi Constitution of 1868, Article 8, Section 1, 2015). Students who wanted to attend school could do so without worrying about how to pay for their education.

The next issue addressed was the Superintendent of Education for the State of Mississippi. The Superintendent of Public Education for the state of Mississippi at this time started as an elected position. The person selected for the job would qualify and the election would commence at the same time as the Governor's election in Mississippi. Interestingly, the Superintendent of Public Education was responsible for reporting to the Legislature within the first twenty days school and present a plan to provide every child in the state of Mississippi a free public education (Mississippi Constitution of 1868, Article 8, Section 2, 2015).

Schools in Mississippi have had oversight since the beginning of the formation of public schools. The Constitution of 1886 implemented a system to provide oversight of the public schools in the form of a board of Education. The first board of Education consisted of the Secretary of State, the Attorney General, and the Superintendent of Public Schools. The primary

responsibilities of the board involved providing financial oversight for school funds, while reporting to the legislature (Mississippi Constitution of 1868, Article 8, Section 3, 2015).

Oddly, the State Board of Education appointed the first school Superintendents of Public Education in each county. The first Superintendents of Public Education within each county were initially provided a contract for two years. However, the legislature maintained the power to allow the positions to become elected rather than appointed (Mississippi Constitution of 1868, Article 8, Section 4, 2015).

The current history of funding for public schools in Mississippi dates back to 1953. During this period of time, the Minimum Education Program was established as the state's school funding formula for over forty years (Peer Report #436, p.3). It became a reality as the system was no longer sufficient to meet the needs of the students within the school districts. According to Lockridge and Maiden (2014), the reality exists that states were not meeting adequate educational standards in that numerous lawsuits against states were filed seeking adequacy of education. Alabama had a lawsuit filed against the state in 1991, Arkansas in 1992, Tennessee in 1993, Louisiana in 1992, and Florida in 1995 (Lockridge & Maiden, 2014).

"A task force consisting of state legislators, MDE staff and a consulting firm developed a pupil-based system for financing schools in Mississippi that utilizes factors associated with the performance of pupils" (Peer Report#436, p. 3). The formulation of a new formula would consider factors such as the number of teachers, administrators, students, and support services.

The Mississippi Education Reform Act of 1982 passed and was designed to strengthen the public school system in Mississippi. The focus was to improve the governance, finance, and leadership in schools. Prior to the Reform Act of 1982, the State Superintendent of Education was an elected position. The goal was to remove the politics and allow the best candidate to be

identified as the recommended candidate for State Superintendent of Education. The Reform Act of 1982 further sought to develop a system to determine the growth of students utilizing standards statewide. The goal was to help ensure students received quality learning in all schools statewide. At the time of the passage, the Reform Act of 1982 helped to provide improvements in schools across the state such as capital improvements and renovated classrooms (Retrieved from http://mdah.state.ms.us, Education Reform Act of 1982, 2015).

The adoption of a uniform curriculum statewide helps to ensure students receive challenging, yet engaging instruction in all schools. Teachers are encouraged to use the standards and adopt them to make learning fun for their students in the classrooms. For the first time in the history of Mississippi schools, attendance at school became mandatory by law for students. During this time, schools received additional teacher aides in elementary classrooms; in particular, kindergarten through 2nd grade. Prior to 1982, kindergarten was not mandated. After the Education Reform Act of 1982, students in Mississippi were required to attend kindergarten. The implementation of the Education Reform Act of 1982 came with a price tag of $110 million in new taxes (Retrieved from http://mdah.state.ms.us, Education Reform Act of 1982, 2015).

As mentioned earlier, the Mississippi Adequate Education Program was designed to provide an adequate level of funding for schools based upon a formula. The program focuses on making sure children, regardless of their geographical location, are given the same opportunity as other students to be successful and also given an opportunity to acquire a quality education. However, the formula takes into account a selection process for determining ***which schools will help to decide*** the amount of funds available to all public schools in Mississippi. A sample of schools determined to be successful schools are used to help create a baseline to help determine

the base student cost (Mississippi Department of Education, 2015). The funding formula is discussed in the following section.

The MAEP Funding Formula and Six Key Factors

"The MAEP funding formula requires the Mississippi Department of Education (MDE) to select representative school districts based on six factors, including the district's accreditation level" (PEER Report #436, 2002). (1) The district's base costs are calculated for the representative districts and includes (2) instructional costs, (3) administrative costs, (4) operational costs, (5) maintenance of plant costs, and (6) ancillary cost components. Moreover, "Level 3 districts have to be within one standard deviation of the mean for the applicable cost components to be selected as a representative district" (PEER Report #436, 2002, p. vii). "The MDE calculates district allocations multiplying the base coast by the district's average daily attendance and then makes adjustments for the number of at-risk students, the local millage contribution, and add-on programs such as transportation and special education" (PEER Report #436, 2002, p. vii).

Representative Districts and MAEP Funding

The representative districts used in the base calculations must be considered successful in the four areas used to calculate the basic cost for educating students in Mississippi. The four areas used to determine the base cost include instruction, administration, maintenance and operations, and ancillary costs. A district must establish a status derived from successful results on state assessments given to students in the public schools. All of the aforementioned costs relate to districts deemed successful and these are also the districts that help establish baseline costs for other school districts. The instructional component includes the number of teachers to be allocated to each school district. The administration area focuses on the number of

administrators needed in relationship to the number of staff members within the schools. Maintenance and operations is concerned about the allocation amount provided for spending as well as the maintenance staff ratio in comparison to the building size. The ancillary area provides a guide for determining how many librarians and counselors are needed in relationship to the number of students in each school site. The cost components are composed using the expenses from the previous year necessary for total operation of school districts (Mississippi Department of Education, 2015). Out of 76 prospects, "forty-one representative districts" are chosen by the MAEP Annual Fund Allocation Process (PEER Report #436: Executive Summary, 2002, pp. vii-xii).

The funding sources were derived using different funding sources known as appropriations in an appropriations bill. The bill delineates where and how much money will be spent in various areas. Some of the services furnished through appropriations include criminal justice, public health, and education. The appropriations are determined by the legislative process, signed by the Governor, and provided to the state agencies responsible for administering services to its citizens. In Mississippi, the Department of Education is the agency that receives funds for distribution to school districts. The funds provided are broken into three categories: general funds, special funds, and federal funds. These categories help make up the budget used in Mississippi. The budget appropriations consist of the following areas: Social Welfare, Agriculture and Economic Development, Debt Service, Hospitals and Hospital schools, Local Assistance, Executive and Fiscal Affairs, Corrections, Conservation, Judiciary and Justice, Legislative Expense, and Education (Mississippi Department of Finance and Administration, 2015).

However, the General fund consists of money generated through state tax collections and other sources. Funds are generated through sales tax, Highway Safety Patrol, Tobacco Tax, Individual Income Tax, Beer and Wine Tax, Insurance Premium Tax, ABC Division, Corporate Income and Franchise Tax, Oil and Gras Severance Tax, Use Tax, Gaming Fees and Taxes, and Auto Tags (Mississippi Department of Finance and Administration, 2015). The funds generated help pay for services within the state including K-12 education, colleges, universities, corrections, and Medicaid. The Legislature is able to control the use of the funds and make determinations about how the money is spent. The current state of the economy impacts decisions by the Legislature; such as, determining if the Legislature agrees to fund any new or expanded programs in the State. When the economy is experiencing a recession, the general fund appropriations is held at the current level of funding or cuts are made to help achieve a balanced state budget (Mississippi Economic Policy Center, 2015). In essence, agencies can make budget increase requests, but seldom are those requests funded.

Moreover, the Special funds consist of funds, which have been set-aside for a special, specific purpose. The special funds must be set aside annually during appropriations and these special funds are accomplished through fees, fines, or assessments. Highway funds are the largest category of special funds. An example of special funds is a regulatory or licensing board which charges licensing fees and assesses fines, which goes to support their operations. Two examples of agencies, which receive funding through licensing fees, include the Medical Licensure Board and the Board of Dental Examiners (Mississippi Economic Policy Center, 2015). The special funds are designated for a specific use to help boards or agencies with their budget needs.

Specifically, federal funds are funds earmarked for specific state programs by the U.S. Government. The legislature is responsible for giving the agencies the authority to spend the funds according to established rules. Often times, the federal rules indicating how the federal funds are disbursed provide a great deal or insufficient flexibility as to the usage of the funds (Mississippi Economic Policy Center, 2015).

Funding Formulas

School districts within the state of Mississippi utilize a funding formula from MAEP to determine the level of funding for each school district. School districts designated as successful determine the base costs for other school districts within the state. The term successful relates to the districts that are to meet the goals and standards set by the Mississippi Accountability system. Districts which are considered to be At-Risk are provided an additional 5 percent for each At-Risk within their districts.

School districts in Mississippi are awarded funds using a funding formula to help alleviate and issues with funds for the students in all schools. The funding formulas are:

1. ADA x Base Student Cost + At-Risk Component – Local Contribution + 8% Guarantee= MAEP Funding Allocation
2. MAEP Formula Allocation + Add-on Programs= Total MAEP District Funding (Mississippi Department of Education, 2015; PEER Report #436, Executive Summary, 2002, vii-xii).

The average daily attendance is calculated using the attendance for months 2 and 3 of the preceding year for students in grades K-12. The average daily attendance excludes those students who are self-contained special education students. Within districts which have high growth over a three-year period prior to the appropriation, the average percent of growth in ADA over those

three years is added to the ADA for the district (Mississippi Department of Education, 2015). School districts continuing to experience high student growth include DeSoto County Schools, Rankin County Schools, Madison County Schools, and Lamar County Schools (Mississippi Department of Education, 2015). These districts have to utilize the funds provided to meet the needs of their current students as well as a continual influx of additional students into their perspective school districts.

The At-Risk Component provides an additional 5 percent of the base student cost multiplied by the number of free lunch participants on October 31 of the preceding year. As the base cost increases, the amount for At-Risk student's increases. The amount is added to the total before the calculation of the local contribution (Mississippi Department of Education, 2015).

On the other hand, the local contribution is determined using the preceding year's data. The local contribution amount is reduced by the Ad Valorem tax reduction grants. The amount yields from twenty-eight mills in addition of the Ad Valorem amount in lieu payments. Local school districts have to contribute locally to the school district. The failure to contribute can stop the district from receiving MAEP funds, if local millage rates are not raised. The local contribution cap level is 27 percent of the program costs including the At-Risk component (Mississippi Department of Education, 2015). District millage rates have to be set above the minimum of twenty-eight mills. However, districts are not allowed to have millage rates above 55 mills unless it was already in place. The districts who had higher millage rates were not required to lower their millage rates, but they fail to have any room to raise their millage rate because it is already above the set limit. With respect to debt, this helps districts to manage their finances and should allow districts to operate without falling unto financial distress.

The final aspect of the Mississippi Adequate Education Program funding formula is as follows:

MAEP Formula Allocation + Add-On Programs = Total MAEP District Funding

Districts within Mississippi will have their costs calculated by the Mississippi Department of Education for each of the five add-on components. The add-on components include the following areas: Transportation, Special Education, Gifted Education, Vocational Education, and Alternative Education. The add-on components are calculated as follows (Mississippi Department of Education, 2015):

Transportation

The average daily attendance of students is used along with a rate table to, which associates the rate allowed to the transported density of the district. The districts density is determined by dividing the average number of students transported daily by the total number of square miles within each district. The lower the density, the higher the rate. Similarly, the higher the density, the lower the rate. The Mississippi Legislature appropriates the total amount of funding for each school district. However, the total of all district transportation funding cannot exceed the amount appropriated for transportation needs in the district (Mississippi Department of Education, 2015).

Special Education

The Mississippi Department of Education enumerates a teacher unit for each approved program for exceptional students. The funding is based on certification and experience of the approved teacher (Mississippi Department of Education, 2015).

Gifted Education

The Mississippi Department of Education calculates a teacher unit for each approved program for gifted students including programs focused on artistic, intellectual, and academic gifted students. The funding is impacted by the teacher's certification and experience. The 1993 Legislature mandated beginning with the 1993-94 school term school districts would have an intellectual gifted program. The mandate began with grade two and ends at grade six. There are no mandates for gifted programs in any other grades (Mississippi Department of Education, 2015).

Vocational Education

The Mississippi Department of Education appropriates funding for one-half (1/2) teacher unit for each approved vocational program in addition to funding from the federal government. The salary and fringe benefits of vocational education teacher units are added together to help determine the appropriate allocation amount to be given to each district (Mississippi Department of Education, 2015). The federal government provides funding for vocational programs through the Carl D. Perkins Act (U.S. Department of Education, 2016). The funds are provided to assist in the education of youth as well as adults. However, the funds from the Perkins Act are provided to state education agencies that provide the funds to local school districts for students (U.S. Department of Education, 2016). Program approval criteria and vocational education teacher units are administered through the Office of Vocational-Technical Education and are interfaced with the Office of Education (Mississippi Code of 1972).

Alternative School Programs

The Mississippi Department of Education funding is allocated for alternative school programs for three quarters of one percent (0.75%) of the district's ADA students in grades one through grades twelve (self contained and ungraded) or twelve students. And, whichever is

greater, this number is then multiplied by the statewide average per pupil expenditure in public funds for the immediately preceding school year (Mississippi Department of Education, 2015).

School Funding Challenges and Legal Cases

A number of challenges exist for local school district funding based upon the MAEP model. The model accounts for the local contribution of school districts and each local contribution can be different based upon their local tax base. The taxes from a community vary based upon many different factors. Some of the factors affecting the local tax base include businesses and industries and 16th Section land leases, which provide a restricted income to local schools. The list of variations of local contributions to school districts is not exclusive. Among the challenges with funding for public schools, the calculation of the daily attendance presents a major concern. The student's attendance is measured using months two and three of the preceding year to calculate the students daily average attendance.

Schools are constrained to do more with less. Budgets are compressed while school districts are spending more money in terms of their employees, management, and materials. (Haelermans, Witee, & Blank, 2012). School administrators continue ongoing consideration of some subjects like, Physical Education for example, are expected to have a shortage of teachers versus other subjects where teacher units are higher in demand (Mangrubang, 2005). For instance, more students can be placed in a Physical Education course without affecting the outcome of the student performance. However, a higher-class load in a tested area can have adverse affects because the larger classes limits the amount of time the classroom teacher has for each student (Knoll, 2002). When the funding of schools decreases, measures must be taken to help ensure all students receive a quality education.

For example, the case of Robles-Wong vs. California was taken to court because of the lack of funding for public schools in California. Within the state, Proposition 13, passed in 1978, allowed there to be a limit to the rates at which local property taxes could increase. One of the many concerns with the budget is how funds are distributed among the schools. There are advocates who believe there are districts within the state who are able to spend different amounts to educate children when districts should all be spending equal amounts to provide an adequate education for all of the children in California (Lockridge & Maiden, 2014).

Class sizes are also a major concern with the lack of funding in school districts across the state of Mississippi. When school districts have to make reductions in instructional staff due to a lack of funding, this can lead to increased class sizes in Mississippi classrooms. According to the Mississippi Public School Accountability Standards (2014), class sizes in Mississippi school districts have parameters guide the number of students in each classroom. When a school district fails to maintain proper student to teacher ratio, the school district could face disciplinary action for violation of standards. For the Kindergarten level, the ratio is set to remain 22 to 1 for a single teacher and may increase to 27 within a classroom where a full-time assistant teacher is assigned to the class. In grades 1 to 4, the class sizes remain 27 to 1 to remain in compliance. In grades 5 to 8, the class size remains 30 to 1 for classes self-contained. When times necessitate, a request can be made to the State Board of Education for a wavier to allow two additional children in the classes. In grades 5-12, classes, which are departmentalized, must maintain a ratio of 33 to 1. Additionally, a request can be made to the State Board of Education for a wavier to allow two additional children in the classes (Mississippi Public School Accountability Standards, 2014). Maintaining class loads is a requirement set forth which has consequences for schools or districts violating this requirement.

According to Wyss, Dolenc, Kong, and Tai (2013), teachers need the opportunity to observe best practices and methods in an effort to implement effective strategies in their classrooms. The more teachers are allowed to receive training and ongoing professional development; it will help them to implement proven instructional strategies in their classrooms. Adequate funds will, it seems, have a role to play so that observing best practices, receiving both additional training and professional development will work together to support the needs of teachers.

"The state share of K-12 education spending tends to be higher when there is greater citizen trust in a state versus local governments and when state spending on non-education services is greater" (Alm, Buschman, & Sjoquist, 2011, p. 637). Interestingly, school finance focuses massive research data on the distribution of school finances among school districts rather than individual schools. However, the No Child Behind Act (NCLBA) places the accountability of achievement upon individual schools. Thus, individual schools must be provided the resources to meet the needs of the students it serves (Rubenstein, Schwartz, Stiefel, & Amor, 2007).

School Funding Opportunities

Race to the Top

With Race to the Top replacing *NCLB* and some of its mandates, perhaps newer flexibility offered by Race to the Top will refocus school district efforts toward ways to obtain higher levels of student achievement using state and federal funds. A brief review of Race to the Top (Reforming No Child Left Behind, 2012, pp.1-2) reveals the following:

(a) Race to the Top [newest form of the Elementary and Secondary Education Act (ESEA)] will let states, schools, and teachers develop and implement effective ways

to give our children the skills they need to compete for the jobs of the future, while maintaining a high bar for the success of all students.

(b) To receive flexibility from NCLB, states must adopt and have a strong plan to implement college-and career-ready standards.

(c) States must also create comprehensive systems of teacher and principal development, evaluation and support that include factors beyond test scores, such as principal observation, peer review, student work, or parent and student feedback.

(d) States receiving waivers must set new performance targets to improve student achievement and close achievement gaps.

(e) States receiving flexibility also must implement accountability systems that recognize and reward high performing schools and those that are making significant gains, while targeting rigorous and comprehensive interventions for the lowest performing schools and schools with the largest achievement gaps.

(f) Under the new state-developed accountability systems, all schools will develop and implement plans for improving educational outcomes for underperforming subgroups of students. Unlike being under…NCLB, states and districts *can design improvement strategies and allocate federal resources* in ways that best meet the needs of their schools and students, while maintaining continued transparency on student performance and achievement gaps.

(g) To date, 41 states [Mississippi is among them] have been awarded flexibility from No Child Left Behind with "4.3 billion dollars" (Kastenbaum, 2012, p. 3 of 24) in federal funds made available to fund Race to the Top.

Taxation and Valuation

All local school districts are able to determine the amount of funds, which will be contributed through taxes to their local schools. On a national level, districts who struggle with a tax base are more inclined to have a system in place, which distributes funds equally to all school districts set upon a formula (Alm et al., 2011). A system that provides equal financial resources to school districts helps to ensure all students receives an adequate education. In the case of Serrano vs. Priest in California, a lawsuit was filed for districts to provide equitable funding for all the students enrolled in schools in the state of California. The goal of the wealthier taxpayers was to create a system where funds are redistributed through all schools in the state while allowing their property taxes to be decreased. This case set a standard for the funding of schools in California and helped to ensure students were provided the necessary resources to provide an adequate education for all the students (Lockridge & Maiden, 2014). The school finance litigation has produced changes for all students and especially for the students who are disadvantaged. There continues to be a debate if money matters to the success of students in schools.

"Property wealth correlates with personal wealth, but not perfectly by any means. The relation between the wealth and race, therefore, occurs one more step away from the disparities in property wealth that make up the primary emphasis of school finance litigation" (Glenn, 2006, p. 66). The ownership of property within a school district does not equate to wealth by any means. Within school districts, various property owners may own personal homes, but this does not necessary mean they are wealthy.

In the United States, the use of property taxes is a major factor in funding of primary and secondary schools (Kent & Sowards, 2008). School districts receive a portion of state funds,

which are not accounted for in the location property taxes calculation for school funding. In larger urban areas, which does not include Mississippi, the schools usually receive funding from the city government, the idea of funding becoming challenging to determine the amount of property tax funds included in the amount provided by the city. On the other hand, in school districts where the states are independent, they are afforded to the option of obtaining additional tax funds for schools through the use of various taxes in the local community. Examples of these taxes could include sales tax, taxes on income, or utility taxes.

There have been ongoing concerns about the ability of property taxes to provide children in all schools the resources needed to be prepared once they exit schools. According to Kent and Sowards (2008), The Kentucky Supreme Court ruled in Rose vs. Council for Better Education (1989), in which the plaintiff contended the finance system supporting local schools placed too much emphasis on property taxes and other local revenue sources (p.27). The reliance caused the schools to be both unequal in opportunity for all students and inadequate in the quality provided. The decisions of other state courts, while differing in wording, have established four criteria (Lukemeyer, 2004, p. 66):

1. Minimum adequacy. All schools must provide some minimum level of spending per pupil.
2. Equality. Expenditures per pupil (or some other measure) must be equal among districts.
3. Access equality. States must counter differences in tax bases across districts and equalize revenue-raising abilities.

4. Wealth neutrality. The property tax base cannot vary systematically among districts if it results in widely different levels of ability to support local education.

Therefore, the case was instrumental in demonstrating the belief that property tax base among communities tends to vary. The variation causes districts in poverty areas to lack in the amount of local tax funds generated due to the lack of available properties to tax. Thus, the variation in property tax base leads to issues similar to the issues faced by the State of Texas. Currently, the state is in a lawsuit attempting to explain and show how their funding of schools is equal across the state. However, the current model used in Texas is being reviewed because the current Texas funding model fails to provide level funding for all schools in the state. The property tax rate is already at the highest limit allowed by law in the state of Texas (Burrows, 2015). Whereas in the United States all states, with the exception of Nevada and South Dakota, include a cost adjustment in their formula to ensure their formula programs account for the needs of the students. The property tax is instrumental to school funding in the United States and continues to be one of the primary sources of school funding.

Socioeconomic Funding Impacts on Teaching and Learning

Socioeconomic Status

The allocation of school funding and school achievement often are affected by variables such as the socioeconomic status of the students within each school district. The socioeconomic status of students does have the ability to influence their education. Students from various backgrounds merge with students from different socioeconomic backgrounds who may have access to more or fewer educational resources. According to Caldas and Bakston (2001), students should be afforded the opportunity to be surrounded by classmates from various

socioeconomic backgrounds. The research concluded that students who come from disadvantaged socioeconomic backgrounds tend to grow as a result of the interaction with students from a privileged background. A study conducted by Caldas and Bakston (2001) also indicated students can make positive or negative effects upon other students. On the other hand, the students who come from privileged backgrounds may be negatively affected academically by interactions with students from disadvantaged backgrounds. The lack of interest negatively impacts academics of students from a disadvantaged background (Caldas & Bakston, 2001).

Financial resources and race may play a factor in a student's ability to achieve in school. Some students are denied the opportunity to participate in Advanced Placement courses or additional rigorous learning when money is required for participation. However, financial resources and race alone are not the only contributing factor to a student's success. Parents must participate and maintain an active involvement in their children's education. According to Desimone (1999), race and income do have a relationship with student achievement. The contributing factor for student achievement is the level of parental involvement in their children's school lives.

While many school districts have policies to aim at helping increase parental involvement, nothing surpasses an interested, motivated parent who is actively engaged in the teaching and learning process of their children. Parental involvement research varies depending upon factors from family to family, which cannot be controlled or monitored (Desimone, 1999). For example, in some families the use of authority from parents encourages higher expectations from students. There are students who come from families where the expectations for achievement are higher and the parents are reluctant to accept subjacent performance from their children in regards to academic matters. In the case of Bradford vs. Maryland State Board of

Education, the ACLU filed a lawsuit against the state of Maryland to fight for equal access for students who were considered to be at-risk in Baltimore City Schools. The basis for the lawsuit was based upon the performance of students showing lower test scores, lower graduation rates, and a higher at risk population when compared to other school districts in the state. Prior to the lawsuit making Maryland State Board of Education go to court, an agreement was reached which yielded additional funding for the students in the Baltimore City Schools as well as new school board and CEO of the school district (American Civil Liberties Union of Maryland).

There are some students who struggle to maintain high academic standards in magnanimous school environments. These students are often searching for more interaction and the need to have quality attention of their teachers. The socioeconomic status of students, nonetheless, impacts student achievement in schools. According to Tajalli and Opheim (2004), "researchers examining student performance consistently find that one of the most important influences on student achievement is socioeconomic status (SES) of students" (p. 44). The socioeconomic status of students determines the student's parent's ability to provide him or her the necessary materials needed for success in school. There are some parents who lack financial resources, as well as the skills, to help their children complete assignments for school. The research provides an insight to the size of the school as a contributing factor in the achievement of students. Students from disadvantaged families have the ability to attain higher academic achievement in a smaller school setting as compared to a larger setting. The reason is students from disadvantaged families benefit from a low student to teacher ratio. The students are seeking more individual attention due to the lack of attention often in the home environment.

Moreover, the responsibility to provide young children an appropriate education is not the sole responsibility of the school system (Israel, Beaulieu, & Hartless, 2001). The amount of

time students are allowed at home to spend on tasks, which add little to their academic enrichment like video games or television time, must be limited to focus attention on learning activities (Israel et al., 2001). For students to be successful their time should be monitored and they should be encouraged to engage their minds with meaningful learning activities. Students should engage their minds in progressive activities, which require them to utilize and apply academic skills to build upon their foundation of learning.

Standardized Test Results

The *No Child Left Behind Legislation* required school districts to provide a set of standards each child would master according to the grade level. Providing this information was a requirement if the states wished to receive federal funds. The burden on many districts became the additional requirement for students to participate in regular testing to determine if they have mastered the skills required of them (Tang, 2011).

The Mississippi Department of Education releases the assessment results annually for districts in the state. The information contained in the report reveals how the district's individual schools performed on the assessments. The results from the individual schools are combined together to help determine the letter grade for the school district. The standards on which the students are assessed focuses more on helping students understand information from a more in depth perspective. The purpose of the new standards is to assess the ability of the students to engage in deeper thinking, analysis, and synthesis of information (Wallender, 2014). Students are required to demonstrate mastery of the skills on their annual assessment and to apply the skills learned in the classroom. For the 2012, there were 3 school districts receiving a grade of A, forty-seven districts received a letter grade of B, forty-two districts received a grade of C, thirty-seven districts received a grade of D, and there were twenty districts receiving the grade of F

(Mississippi Department of Education, 2015). For 2013, there were nineteen districts receiving a letter grade of A, forty-three districts receiving a grade of B, thirty-seven districts each receiving a grade of C and D, and fifteen districts relieved a letter grade of F (Mississippi Department of Education, 2015). Clearly, more research is needed to assess what is happening in school districts given the newest levels of flexibility affecting how state and federal funds are being directed to achieve the highest levels of student achievement possible and, yet, also address areas of weakness.

Summary and Implications of the Literature Review

School funding does have an impact on the academic achievement of students in schools. The research reviewed established a framework usable by schools established through research that provides potential approaches states might adopt to equitably and adequately achieve spending to achieve student achievement. Monitoring results and flexibility directed by research-based evidenced was featured across these approaches. A focus on the mandates and history of the Mississippi Adequate Education Program as well as legal aspects (Mississippi Historical Society, 2015) connected to the plan created a broader basis for understanding the political and practical aspects of how school districts in Mississippi, in particular, gets funds to support K-12 education along with other entities desiring their share of the state's revenues. Further research focuses upon public school district allocation challenges and opportunities within school districts. Schools within Mississippi receive their funding using local, state, and federal funds. Finally, student achievement, and, therefore, district-level achievement, is measured using standardized achievement results in Mississippi schools. The current ***Successful Schools Approach*** (Mississippi's adaptation) and the MAEP's funding mechanism will be scrutinized by researchers and other stakeholders to observe advancements made and to look for opportunities

to assist the state through independent research efforts intended to help resolve those problems that require our respective and/or joint attention. School districts may benefit from findings of research efforts such as this effort, since as stakeholders, educators, too, are hopeful that all of our efforts will engender wise spending of allocated funds in the pursuit of high student achievement results.

Chapter III

Research Methods

Chapter three presents information about the research methods used in this study. The methods used in this research study involve obtaining the funding levels from the school years 2011-2012, 2012-2013, and 2013-2014 along with the academic rating level of the school districts in the state of Mississippi. This chapter will explain how the quantitative research data is collected through the use of information request sent to the Mississippi Department of Education for the relevant data. The participants for the study are reflective of school districts in Mississippi. Chapter three shows how the approval for the research study is sought and how the research process is reflective of the school districts in the State of Mississippi.

Design of the Study

This study, The Relationship Between the Mississippi Adequate Education Program and Student Achievement in Mississippi School Districts, utilizes a quantitative method approach to determine the relationship between school funding and student achievement in Mississippi school districts. The study particularly considers the role of funding within each school district and the impact on student achievement at the district level as measured by the district's letter grade given by the Mississippi Department of Education. The quantitative data to be analyzed will be (1) district letter grades and their numerical equivalents, and (2) amounts of allocated funds (including local and federal funds) given to school districts through the MAEP's funding process for the school years 2011-2012, 2012-2013, and 2013-2014. N=145 (school districts for 2011-2012 and 2012-2013) and N=143 (2013-2014) will be included as the population in this

study. The last three years were chosen, in particular, because they are the last three funded school years for school districts and funding has become a more critical issue for school districts in the past three school years.

Data for the study will be district-level letter grades and their numerical equivalents. The letter grades are determined by students' standardized test scores on tests given during state mandated testing periods. The state directs testing requirements for school districts and determines the school district's letter grade based upon accountability measures derived from a representative group of Level 3 schools. The independent variable is the funding amounts provided to various school districts for each of the past three school years. The dependent variable is the students' test scores, which are used to determine the letter grade for the respective school district. The names of school districts will be replaced using state generated District Numbers to identify each school district in the study. All public school districts in the state will be included in this study to gain a better understanding regarding funding amounts to the school districts and the nature of relationships between student achievement and funding given to schools across the state.

Sites of the Study

The study includes Mississippi school districts (n=145 for 2011-2012 and 2012-2013; n=143 for 2013-2014). Collecting data about all school districts in Mississippi may provide an understandable view about the issues affecting school funding across all school districts. District-level information used in this research will be obtained from the Mississippi Department of Education utilizing an information request form. School district performance levels are inclusive of achievement scores and growth of the students in each district included in the study.

Protocols in the Study

The research study utilizes data from the Children's First Report in addition to information obtained from the Mississippi Department of Education (2015). All of the information will be retrieved from archived information through an information request. Information requests are submitted to the Mississippi Department of Education to locate any information not readily accessible on the website archived information. Each school district's accountability ratings will be used to determine the district's performance level. The performance levels will be displayed using the numerical value identified by the state and equivalent to the district's alphabetic rating to assure accuracy of the information. The numeric form of a district's rating will allow all data of this type to be correlated with numeric sums representing funds provided to each school district in the study as described above.

Procedures in the Study

A copy of the dissertation prospectus was disseminated to the dissertation committee. After approval from the dissertation committee, I requested for approval of the study will be submitted to the Institutional Research Board (IRB) at the University of Mississippi. Upon approval from the IRB, the information for the study was sought through a request form sent to and obtained from the Mississippi Department of Education. The Information Request Form was used to obtain all needed data used in this study. The information was organized by districts to keep track of both achievement data and data related to MAEP funds received. Where needed for explanations necessary for clarity in the study, data was grouped by separate years as described earlier (i.e., 2011-12; 2012-13; and 2013-14). The information gathered was entered into SPSS in formats appropriate for each planned statistical analysis.

Research Hypotheses

Hypothesis One: There will be no significant relationship between school funds allocated for scenarios (a-c) and district-level achievement scores in Mississippi school districts for 2011-2012.

Hypothesis Two: There will be no significant relationship between school funds allocated for scenarios (a-c) and district-level achievement scores in Mississippi school districts for 2012-2013.

Hypothesis Three: There will be no significant relationship between school funds allocated for scenarios (a-c) and district-level achievement scores in Mississippi school districts for 2013-2014.

Hypothesis Four: There will be no significant relationship between school achievement scores, disaggregated types of district-level achievement scores, original levels of MAEP funds received by school districts, derived levels of MAEP funding, three school-related curricular characteristics, assessed value designation, and millage cap values for the years 2011-12; 2012-13; and 2013-14.

Hypothesis Five: There will be no difference in the size of the unique contribution of different levels of derived funding and the size of the unique contribution of different school-related curricular characteristics toward explaining the variance in different district-level school achievement scores.

Hypothesis Six: There will be no statistically significant unique contributions to the prediction of school district achievement scores made by derived levels of school district funds and school-related curricular characteristics as *predictor variables* and school district achievement scores as the *criterion variable* for school districts in the years 2011-12; 2012-13; and 2013-14.

Data Analysis in the Research Study

The quantitative data for this study will be analyzed utilizing the Pearson-r bivariate correlation procedure to determine if there is a correlation between the variables examined in this study. “The product-moment correlation coefficient (r) is computed when both variables that we wish to correlate are expressed as continuous scores” (Gall, Gall, & Borg, 2007, p. 347). The utilization of the Pearson-r bivariate correlation procedure will seek to find if the variables within stated hypotheses show a relationship to one another and significance testing involving “r” will indicate whether the relationship is significant or not. The Coefficient of Determination also will be calculated to indicate the extent to which changes in variables are influencing one another. Commonly called "r-square", the coefficient of determination completes the meaning of a correlation and is equivalent to an effect size statistic in that it speaks to the "variance accounted for" between two correlated values. Correlations express a relationship between variables. If there is a is a perfect inverse linear relationship (r= -1), then as values in one variable increases, values decrease on the other variable. If no linear relationship (r=0) exists, then there is no relationship between values representing either variable. Or, if a perfect direct relationship between variables exists (r=1), then as values on one variable increase or decrease, so will values on the other variable. Tests of significance performed by SPSS for a Pearson-r bivariate correlation will identify with an asterisk any significant relationship between variables accounted for); procedure will determine if the sizes are significantly different from each other at the p = .05 level. The following related correlation procedures will be applied to data collected in this study: (1) the Pearson-r Product Moment bivariate correlation procedure; (2) the Multiple Linear Regression procedure for unordered sets (useful for determining how well selected predictor variables express a relationship to a specified criterion variable; (3) the procedure for

determining a prediction equation from related variables; and (4) the procedure for determining correlations between variables of interest in a correlation matrix. Procedures in SPSS will be used with all correlations conducted in this study.

Hypotheses, Statistical Testing, and Significance Level

All hypotheses listed below were analyzed using various correlational procedures and the results were tested for significance at the p = .05 level. Independent and dependent variables in each case are identified.

(a) Hypotheses 1-3: The Pearson-r bivariate correlation was applied to data and the p =.05 significance level was used for all statistical tests.

(b) Hypothesis 4: Pearson-r bivariate correlation matrix was used to obtain correlation among all variables in this study. The Bonferroni procedure was employed to avoid a Type I error.

(c) Hypothesis 5: Standard Multiple Regression was applied to data to determine the relationship between selected Independent Variables; 3 different levels of school funding; and 3 different levels of curricular characteristics (from categories in MDE 2014 accountability information; and district-level achievement scores as the variables. Percent of variance accounted for among independent variables, as a block and separately, and a prediction equation also was calculated. These two tests used the p=.05 significance level.

(d) Hypothesis 6: A Standard Multiple Regression procedure was applied to data involving affected Independent variables: 3 derived levels of school district funds; 3 school related curricular characteristics; and school district achievement scores as the dependent variable. Readers will note that *statistically significant unique contribution* (Pallant, 2010)

refers to the individual *sizes* of the contributions (or percent of variance accounted for). This procedure determined if the variance accounted for among predictors was significantly different from each other at the p = .05 level.

Data Transformations of Selected Variables

Coding of variables helped to transform data collected in this study for the correlational procedures. The transformation of data from other sources will be performed, as outlined below, for the same reason, as maybe required:

(a) Levels of funding. Once each district's level of funding was determined, a mean and its standard deviation was calculated from the total of all district funds. The calculated mean and standard deviation was used to create finer divisions between the levels of funding in the data set. For example, adding and subtracting one-half of a standard deviation to and from the mean created an upper and a lower limit about the mean. This range defined the category "About the Mean" (AtM). Similarly, any number lower than the lower limit of the aforementioned range defined what is called "Below the Mean" (BtM) and any number above the upper limit of the range defined the category "Above the Mean" (AbM). This manipulation of the data created the finer divisions desired for analyses involving levels of funding in the data set. Individual district level funding amounts then were compared to the numbers in the three categories above to determine the funding level category for a given school district. Such finer divisions in the data contributed to the possibility of a better understanding of the relationship between district funding levels and student achievement explored in this study. The three categories above were coded: 1 = Below the Mean, 2 = At the Mean, and 3 = Above the Mean. Individual school district monetary amounts were more easily distinguished from each other, given the "tendency

toward the middle" funding approach representing the state's level of contribution to fund totals at the district level (see for example, MAEP, pp. 30-31, this document).

(b) School-related characteristics.

The variables subsumed under the description "school-related characteristics" included the following categories (a) Schools and Districts without 12th Grade or Science, (b) Schools and Districts without 12th Grade, and (c) Schools and Districts with 12th Grade. Each of these categories will be coded 1, 2, and 3, respectively to enable them to be included as variables in planned correlational analyses.

(e) District letter grades. "The Mississippi Accountability System rates schools and school districts with the designations Star, High Performing, Successful, Academic Watch, Low Performing, At-Risk of Failing, and Failing" (2011-2012 and 2012-2013). The conversion of these titles given were accomplished using MDE's assignment of the titles to equate to grades for schools distinguished by school-related characteristics as mentioned earlier. The following information gives guidance for the transformations that will be used in this study:

Figure 1. Rating Scale for 2011-2012, 2012-2013

Rating Title	Quality Distribution Index	Letter Grade Equivalent
Star	200-300	A
High Performing	166-199	B
Successful	133-165	C
Academic Watch	100-132	D
Low Performing/At-Risk of Failing/Failing	0-99	F

Note: Mississippi Department of Education (2012-2013)

(f) District letter grades for 2013-2014. "The Mississippi Accountability System rates schools and school districts with the letter grades A, B, C, D, and F" (Mississippi Department of Education, 2013-14, p. 1 of 1). The conversion of letter grades to numeric values was accomplished using MDE's assignment of numeric equivalents to letter grades for the various categories of schools distinguished by school-related characteristics. The following information (Mississippi Department of Education, 2014, p. 1 of 1) gives guidance for the transformations that was used in this study:

Figure 2. Rating Scale for 2013-2014

	School and Districts without 12th Grade or Science (600 possible)	Schools and Districts without 12th Grade (700) possible	Schools and Districts with 12th Grade (900 possible)
A	449	518	695
B	404	455	623
C	351	400	540
D	286	325	422
F	<286	<325	<422

Summary of the Methods and Procedures

The Method and Procedures section gives an outline for how the research was conducted. Once data was received from written requests as described above, data was organized, transformed as needed for statistical analysis, coded as necessary, and arranged in data sets appropriate for each planned analysis. From a quality control perspective, the data received from the Mississippi Department of Education (MDE) was assumed to be accurate and reliable for each of the school districts in this study. Respective school district identification numbers were used with each data set related to each school district by the Mississippi Department of Education. This helped identify and manage the tracking of data in this study. Data tables also were constructed to show results of statistical analyses, according to SPSS and the American Psychological Association (APA).

CHAPTER IV

Research Findings

In Chapter IV, quantitative research findings of an investigation into The Relationship between the Mississippi Adequate Education Program and Student Achievement in Mississippi Schools are reported and analyzed relative to various hypotheses formulated for this research.

Hypothesis One

Hypothesis One stated that there were no significant relationship between school funds allocated for scenarios (a-c) and district-level achievement scores in Mississippi school districts for 2011-2012.

Scenario A. Considers all of the funding from MAEP, local tax, and federal tax dollars. The Pearson-r correlation resulted in a small/weak, positive, and significant correlation (r=.231, p=.005) between school funds and school achievement scores for the school year 2011-2012. Table 1 indicates the following: Thus, Hypothesis 1, Scenario A was rejected. School funds and school achievement were found to be significantly related.

Table 1

Summary of Correlation Results Under Three Different Scenarios for 2011-2012.

Hypothesis 1: Scenario A, 2011-2012

	Funds	School Achievement Scores
Pearson Correlation	1	.231
Sig. (2-tailed)		.005
N	145	145

Scenario B. Considers funding from MAEP, federal tax dollars, and local tax dollars caused by a possible tax base growth. The Pearson-r correlation resulted in a small, positive, but insignificant correlation (r=.029, p=.732) between school achievement scores and assessed values for school year 2011-2012. Table 2 indicates the following: Therefore, Hypothesis 1, Scenario B was accepted. There was no significant relationship found between school achievement and assessed property values.

Table 2

Summary of Correlation Results Under Three Different Scenarios for 2011-2012

Hypothesis 1: Scenario B, 2011-2012

	School Achievement Scores	Assessed Value
Pearson Correlation	1	.029
Sig. (2-tailed)		.732
N	145	145

Scenario C. Considers funding from MAEP, federal tax dollars, and when local taxes cannot be raised due to millage rate caps as mentioned above. The Pearson-r correlation resulted in a small, negative, but insignificant correlation (r= -.087, p=.301) between school achievement

scores and millage cap values for school year 2011-2012. Table 3 indicates the following: Therefore, Hypothesis 1, Scenario C was accepted. There was no significant relationship found between school achievement and mill cap values.

Table 3

Summary of Correlation Results Under Three Different Scenarios for Achievement and Mill Cap Values 2011-2012

Hypothesis 1: Scenario C, 2011-2012

	School Achievement Scores	Millage Cap Values
Pearson Correlation	1	-.087
Sig. (2-tailed)		.301
N	145	145

Hypothesis Two

Hypothesis Two stated there was no significant relationship between school funds allocated for scenarios (a-c) and district-level achievement scores in Mississippi school districts for 2012-2013.

Scenario A. Considers all of the funding from MAEP, local tax, and federal tax dollars. The Pearson-r correlation resulted in a small/weak, positive but significant correlation (r=.234, p=.004) between school funds and school achievement scores for school year 2012-2013. Table 4 indicates the following: Therefore, Hypothesis 2, Scenario A, for the year 2012-2013 was rejected. A significant correlation was found between school funds and school achievement scores.

Table 4

Summary of Correlation Results Under Three Different Scenarios for 2012-2013.

Hypothesis 2: Scenario A, 2012-2013

	School Funds	School Achievement Scores
Pearson Correlation	1	.234
Sig. (2-tailed)		.004
N	145	145

Scenario B. Considers funding from MAEP, federal tax dollars, and local tax dollars caused by a possible tax base growth. The Pearson-r correlation resulted in a small/weak, positive, but not significant correlation (r=.071, p=.398) between school achievement scores and assessed values for school year 2012-2013. Table 5 indicates the following: Therefore, Hypothesis 2, Scenario B, for the year 2012-2013, was accepted. No significant correlation was found between school achievement and assessed values for the school year 2012-2013.

Table 5

Summary of Correlation Results Under Three Different Scenarios for 2012-2013.

Hypothesis 2: Scenario B, 2012-2013

	School Achievement Scores	Assessed Value
Pearson Correlation	1	.071
Sig. (2-tailed)		.398
N	145	145

Scenario C. Considers funding from MAEP, federal tax dollars, and when local taxes cannot be raised due to millage rate caps as mentioned above. The Pearson-r correlation resulted in a small, negative, but insignificant correlation (r=-.042, p=.619) between school achievement scores and millage cap values for school year 2012-2013. Table 6 indicates the following: Therefore, Hypothesis 2, Scenario C, for the year 2012-2013, was accepted. No significant correlation was found between school achievement and millage cap values for the school year 2012-2013.

Table 6

Summary of Correlation Results Under Three Different Scenarios for 2012-2013.

Hypothesis C: Scenario B, 2012-2013

	School Achievement Scores	Millage Cap Values
Pearson Correlation	1	-.042
Sig. (2-tailed)		.619
N	145	145

Hypothesis Three

Hypothesis three stated that there was no significant relationship between school funds allocated for scenarios (a-c) and district-level achievement scores in Mississippi school districts for 2013-2014.

Scenario A. Considers all of the funding from MAEP, local tax, and federal tax dollars. The Pearson-r correlation resulted in a small/weak, positive, but insignificant correlation (r=.135, p=.108) between school funds and school achievement scores for school year 2013-2014. Table 7 indicates the following: Therefore, Hypothesis 3, Scenario A was accepted. There was no

significant relationship between school funds and school achievement. This result was the opposite of an earlier finding in 2012-2013. The reason for this outcome was attributed to changes in the way school achievement score ranges defined letter grades (A-F) across state school districts that were grouped by differences in their school curricular characteristics.

Table 7

Summary of Correlation Results Under Three Different Scenarios for 2013-2014.

Hypothesis 3: Scenario A, 2013-2014		
	Funds	School Achievement Scores
Pearson Correlation	1	.135
Sig. (2-tailed)		.108
N	143	143

Scenario B. Considers funding from MAEP, federal tax dollars, and local tax dollars caused by a possible tax base growth. The Pearson-r correlation resulted in a small/weak, positive, but insignificant correlation (r=.070, p=.409) between school achievement scores and assessed values for the school year 2013-2014. Therefore, Hypothesis 3, Scenario B, for the year 2013-2014, was accepted. No significant relationship was found between school achievement scores and assessed property values.

Table 8

Summary of Correlation Results Under Three Different Scenarios for 2013-2014.

Hypothesis 3: Scenario B, 2013-2014

	School Achievement Scores	Assessed Value
Pearson Correlation	1	.070
Sig. (2-tailed)		.409
N	143	143

Scenario C. Considers funding from MAEP, federal tax dollars, and when local taxes cannot be raised due to millage rate caps as mentioned above. The Pearson-r correlation resulted in a small, negative, but insignificant correlation (r=-.022, p=.798) between school achievement scores and millage cap values for school year 2013-2014. Table 9 indicates that Hypothesis Three, Scenario C was accepted. No significant correlation was found between school achievement and mill cap values for 2013-2014.

Table 9

Summary of Correlation Results Under Three Different Scenarios for 2013-2014.

Hypothesis 3: Scenario C, 2013-2014

	School Achievement Scores	Millage caps
Pearson Correlation	1	-.022
Sig. (2-tailed)		.798
N	143	143

Hypothesis Four

Hypothesis Four stated there was no significant relationship between school achievement scores, disaggregated types of district-level achievement scores, original levels of MAEP funds received by school districts, derived levels of MAEP funding, three school-related curricular characteristics, assessed value designation, and millage cap values for the years 2011-12; 2012-13; and 2013-14.

2011-2012 School Year

The Pearson-r matrix consisted of seven variables (i.e., Original MAEP funds, Assessed Value Designation, Millage Cap Values, School Achievement Scores, Derived MAEP Funding, Disaggregated School Achievement Scores, and School Curriculum Characteristics) that were correlated to produce 42 correlations which required the use of the Bonferroni Correction Procedure to minimize the chances of making a Type I error. Hence, 21 correlations remained from one half of the total correlations, as required in the procedure. The original significance level (p=.05) was then divided by the value of 21 to produce the corrected significance value (i.e., .05/21=.002). Hypothesis Four correlation values that were originally significant but were either found to be insignificant or remained significant after comparing all correlation values to the Bonferroni values are shown in Table 10. Hence, Hypothesis Four was accepted for four of the correlations performed that are identified as insignificant Bonferroni results. Three other correlations were found to be significant and Hypothesis Four was rejected for these correlations for the year in 2011-2012.

Table 10

Bonferroni Corrections for Pearson-r Correlation Results for 2011-2012

Correlation	Original Significance Value (r=); (p=).		Correlation result due to Bonferroni Correction (p≤.002)
Original MAEP funds and School achievement scores	.231**	.005	Not significant, p>.002
Original MAEP funds and Derived MAEP funds	.717**	. 000	Significant, p<.002
Original MAEP funds and Disaggregated school achievement scores	-.217**	.009	Not significant, p>.002
Assessed value designation and millage caps	.188*	.023	Not significant, p>.002
School achievement scores and Derived MAEP funding	.255**	.002	Significant, p=.002
School achievement scores and Disaggregated school achievement scores	-.930**	.000	Significant, p<.002
Derived MAEP Funding and Disaggregated school achievement scores	-.244**	.003	Not significant, but borderline

Note: ∗ = .05 Level of significance; ** .01 Level of significance

2012-2013 School Year

Hypothesis Four states there will be no significant relationship between school achievement scores, disaggregated types of district-level achievement scores, original levels of MAEP funds received by school districts, derived levels of MAEP funding, three school-related curricular characteristics, assessed value designation, and millage cap values for the years 2011-12; 2012-13; and 2013-14.

The Pearson-r matrix consisted of seven variables [i.e., Original MAEP funds, Assessed Value Designation, Millage Cap Values, School Achievement Scores, Derived MAEP Funding, Disaggregated School Achievement Scores, and School Curriculum Characteristics] that were correlated to produce 42 correlations which required the use of the Bon Feroni Correction Procedure to minimize the chances of making a Type I error. Hence, 21 correlations remained from one half of the total correlations as required in the procedure. The original significance level (p=.05) was then divided by the value of 21 to produce the corrected significance value (i.e., .05/21=.002).

Table 11

Bonferronni Corrections for Pearson-r Correlation Results for 2012-2013

Correlation	Original Significance Value (r=) (p=)		Correlation Results Due to Bonferroni Correction (p≤.002)
Original MAEP funds and School achievement scores	.231**	.005	Not significant, p>.002
Original MAEP funds and Derived MAEP funds	. 717**	.000	Significant, p<.002
Original MAEP funds and Disaggregated MAEP funds	-.217	.009	Not significant, p>.002
School achievement scores and Derived MAEP funds	.255**	. 002	Not significant but borderline
School achievement scores and Disaggregated School Achievement Scores	-.930**	.000	Significant, p<.002
Derived MAEP funds and Disaggregated school achievement scores	-.244**	.003	Not significant but borderline
Assessed Value Designation and Millage Cap Values	.188*	.023	Not significant, p>.002

∗ = .05 Level of significance; ∗∗=.01 Level of significance

Overall, there were two significant outcomes among the correlations conducted (Original MAEP funds and Derived MAEP funds and School achievement scores and Disaggregated school achievement scores). The results indicated that because the Derived MAEP funds are very similar to Original MAEP funds, they may prove to be a valuable variable to use when determining relationships with selected variables and school funding might be examined.

2013-2014 School Year Hypothesis Four stated there are no significant relationships between school achievement scores, disaggregated types of district-level achievement scores, original levels of MAEP funds received by school districts, derived levels of MAEP funding, three school-related curricular characteristics, assessed value designation, and millage cap values for the years 2011-12; 2012-13; and 2013-14. The Pearson-r matrix consisted of seven variables (i.e., Original MAEP funds, Assessed Value Designation, Millage Cap Values, School Achievement Scores, Derived MAEP Funding, Disaggregated School Achievement Scores, and School Curriculum Characteristics) that were correlated to produce 42 correlations which required the use of the Bon Feroni Correction Procedure to minimize the chances of making a Type I error. Hence, 21 correlations remained from one half of the total correlations as required in the procedure. The original significance level (p=.05) was then divided by the value of 21 to produce the corrected significance value (i.e., .05/21=.002).

Hypothesis Four correlation values that were originally significant when compared to the corrected significance level as shown below in Table 12:

As explained earlier, the corrected Bonferroni value shown in Table 12 was used to judge if a correlation was significant or not. As seen in Table 12, two correlations were found to be significant. These significant correlations did not involve correlations between (1) school

achievement scores and school curriculum characteristics or (2) disaggregated school achievement scores and school curriculum characteristics. As a result, Hypothesis four was rejected. The significant levels of correlations were found between Original MAEP funds and Derived MAEP funds and between School Achievement scores and Disaggregated school achievement scores.

Table 12

Bonferroni Corrections for Pearson-r Correlation Results from 2013-2014

Correlation	Original Significance Value (r=) (p=)		Correlation Results Due to Bonferroni Correction (p≤.002)
Original MAEP funds and Derived MAEP funds	.723**	.000	Significant, p<.002
School achievement scores and Disaggregated school achievement scores	-.786**	.000	Significant, p<.002
School achievement scores and School curriculum characteristics	.219**	.009	Not significant, p>.002
Disaggregated school achievement score and School curriculum characteristics	.232**	.005	Not significant, p>.002

Note: ∗ = .05 Level of significance; ∗∗=.01 Level of significance

Overall, two significant correlations were formed: (1) school achievement scores and disaggregated school achievement scores; and (2) school achievement scores and school curriculum characteristics. Since these correlations are between sets of variables where one was derived from the other, then results were expected and underscore how useful transformed data can be fro revealing otherwise hidden relationships.

Hypothesis Five

Hypothesis Five states there will be no difference in the size of the unique contribution of different levels of derived funding and the size of the unique contribution of different school-related curricular characteristics toward explaining the variance in different district-level school achievement scores.

School Year 2011-2012. Hypothesis Five addressed insights that might be gained from examining relationships between selected variables in this study. Standard Multiple Regression results for the correlation between district-level achievement scores as the dependent variable and three different possible levels of school funding and three different possible levels of curriculum characteristics as the predicator variables indicate that the regression equation with level of school curriculum characteristics and level of school funding as predictors was significantly related to district-level achievement scores ($R=.263$; $R^2= .069$; adjusted $R^2= .056$; $F(2, 142)= 5.292$ and $p= .006$. There were no collinearity issues of concern (Tolerance >.10 and VIF <10). The prediction equation associated with the correlation result (from unstandardized weights) is shown below:

Z (District Level Achievement Scores) = -.29 Z (Level School Funding) + .482 Z (Level of School Curriculum Characteristics) + 1.804

The Predication equation from standardized weights:

Z (District Level Achievement Scores) = --.25 Z (Level School Funding) + .100 Z (Level of School Curriculum Characteristics).

Therefore, for those instances where predictions are needed, the above equation provides a useful understanding of how chosen variables, like those above, relate to one another.

School Year 2012-2013. Hypothesis Five addressed insights that might be gained from examining relationships between selected variables in this study. Standard Multiple Regression results for the correlation between district-level achievement scores as the dependent variable and three different possible levels of school funding and three different possible levels of curriculum characteristics as the predicator variables indicate that the regression equation with level of school curriculum characteristics and level of school funding as predictors was significantly related to district-level achievement scores (R=.245; R^2= .060; adjusted R^2= .047; F (2, 142)= 4.534 and p= .012. There were no collinearity issues of concern (Tolerance >.10 and VIF <10). The prediction equation associated with the correlation result (from unstandardized weights) is shown below:

Z (District Level Achievement Scores) = -.28 Z (Level School Funding) + -.118 Z (Level of School Curriculum Characteristics) + 3.393

The Predication equation from standardized weights:

Z (District Level Achievement Scores) = - .243 Z (Level School Funding) + -.025 Z (Level of School Curriculum Characteristics)

Therefore, for instances where predictions are needed, the above equation becomes useful for understanding how chosen variables, like those above, relate to one another.

School Year 2013-2014. Hypothesis Five addressed insights that might be gained from examining relationships between selected variables in this study. Standard Multiple Regression results for the correlation between district-level achievement scores as the dependent variable and three different possible levels of school funding and three different possible levels of curriculum characteristics as the predicator variables indicated that the regression equation with (level of school curriculum characteristics) and (level of school funding) as predictors was significantly related to district-level achievement scores (R=.254; R^2= .065; adjusted R^2= .051; F (2, 140)= 4.843 and p= .009. There were no collinearity issues of concern (Tolerance >.10 and VIF <10). The prediction equation associated with the correlation result (from unstandardized weights) is shown below:

Z (District Level Achievement Scores) = -.322 Z (Level School Funding) + 3.025 Z (Level of School Curriculum Characteristics) + 1.297

Predication equation from standardized weights: Z (District Level Achievement Scores) = --.105 Z (Level School Funding) + .236 Z (Level of School Curriculum Characteristics)

Therefore, for instances where predictions are needed, the above equation becomes useful for understanding how chosen variables, like those above, predict or relate to one another.

Hypothesis Six

Hypothesis Six stated there was no statistically significant unique contributions to the prediction of school district achievement scores made by derived levels of school district funds and school-related curricular characteristics as *predictor variables* and school district achievement scores as the *criterion variable* for school districts in the years 2011-12; 2012-13; and 2013-14.

School Year 2011-2012. The results indicated the unique contribution to explaining disaggregated school achievement scores was found from the Multiple Regression analysis of the level of school funding and the level of school curriculum characteristics as they relate to disaggregated school achievement scores. With respect to the level of school funding, and disaggregated school achievement scores, the beta value was found to be r= -.248 with r^2 x 100 (i.e., % of variance accounted for) = 6.15%. With respect to the level of school curriculum characteristics, the beta value was found to be r= .100 with r^2 x 100 (i.e., % of variance accounted for) = 1.0%. Hence, the strongest unique contribution to explaining disaggregated school achievement scores for 2011-2012 was the level of school funding. The relationship was also significant [t (142) = -.3.064, p= .003]. The results for the correlation between school achievement scores and school curriculum characteristics was not significant [t (142) = 1.230, p=.221]. The strongest unique contribution to school achievement made by school funding was six times larger than the contribution made by the level of school curriculum characteristics for the school year 2011-2012 (i.e., 6.15% ÷ 1% = 6.15).

School year 2012-2013. The unique contribution to explaining disaggregated school achievement scores made by the level of school funding and the level of school curriculum characteristics favored the level of school funding. The beta value was found to be r= -.242 with r^2 x 100 (i.e., % of variance accounted for) = 5.86%. With respect to the level of school curriculum characteristics, the beta value was found to be r= -.025 with r^2 x 100 (% of variance accounted for) = .063%. Hence, the strongest unique contribution to explaining disaggregated school achievement scores was the level of school funding. The correlation was significant [t (142) = -2.979, p= .003]. The result for the correlation between school achievement scores and and school characteristics was not significant [t (142) = -.302, p=.763]. The strongest unique

contribution to school achievement made by school funding was almost ninety-four times larger than the contribution made by the level of school curriculum characteristics for the school year 2012-2013.

School year 2013-2014. The results indicating the unique contribution to explaining disaggregated school achievement scores was found from a Multiple Regression analysis that involved the level of school funding and the level of school curriculum characteristics as they relate to disaggregated school achievement scores. With respect to the level of school funding, the beta value was found to be r= -.105 with r^2 x 100 (% of variance accounted for) = 1.10%. With respect to the level of school curriculum characteristics, the beta value was found to be r= .236 with r^2 x 100 (% of variance accounted for) = 5.57%. Hence, the strongest unique contribution to explaining disaggregated school achievement scores was the level of school curriculum characteristics. The relationship was also significant [t (140) = 2.890, p= .004]. The relationship between the level of school funding and school achievement was not significant [t (140) = -1.284, p=.201]. The results indicate that the strongest unique contribution to school achievement was school curriculum characteristics, and by comparison, was greater than five times larger than the contribution made by the level of school funding for the school year 2013-2014.

CHAPTER V

Summary, Discussion, Recommendations, and Conclusions

Summary of the Research Study

The dissertation research examined the effects of school funding upon student achievement in Mississippi public schools from 2011-2012, 2012-2013, and 2013-2014. The detailed description of the MAEP and its relationship to revenues derived from ad valorem taxes and how they explain the primary basis for revenues that support public education in Mississippi. Hence, a secondary problem in this study identified a prediction equation based upon selected school characteristics and derived funding levels (using MAEP data) to predict student achievement. Six hypotheses were examined in the study to determine the effects of school funding upon academic achievement.

Table 13 provides a summary of results for Hypotheses One through Six examined in the research study. The results for each Hypothesis is listed in the column to the right to provide a quick view of all of the results from the study. Hypothesis one through three, involves three different scenarios for each of those years. In Scenario A, Scenario B, and Scenario C, for the year 2011-2012, findings were not significant. In Scenario A, B, and C for 2012-2013, only the Scenario A result (funding from MAEP, local tax, and federal tax dollars) was significant ($r=.234$, $p=.004$). For Hypothesis Three, 2013-2014, none of the results for Scenarios A, B, or C were significant.

Hypothesis Four, considered the relationship between school achievement scores, disaggregated types of district-level achievement scores, original levels of MAEP funds received

by school districts, derived levels of MAEP funding, three school-related curricular characteristics, assessed value designation, and millage cap values for the years 2011-12; 2012-13; and 2013-14. Two correlations were found to be significant between school achievement scores and Derived MAEP funding (r=.255, p=.002) and Derived MAEP funding disaggregated school achievement scores (r= .244, p=.003). Hypothesis Five, examined the different levels of derived funding and the size of the unique contribution of different school-related curricular characteristics toward explaining the variance in different district-level school achievement scores. Results indicated that the largest unique contribution to explaining the variance in different district-level school achievement scores was school related curricular characteristics; adjusted R^2=.047, F (2, 142)= 4.534, p=.012. Hypothesis Six examined the unique contributions to the prediction of school district achievement scores made by derived levels of school district funds and school-related curricular characteristics as *predictor variables* and school district achievement scores as the *criterion variable* for school districts in the years 2011-12; 2012-13; and 2013-14. Results indicated that: (1) in 2011-2012, the strongest unique contribution to explaining school achievement was the level of school funding and the relationship was significant [t(142)= -3.064, p=.003]; (2) in 2012-2013, school achievement was once again best explained by the level of school funding [t(142)= -2.879, p=.0031]; and (3) in 2013-2014, the largest and significant contribution to explaining school achievement was the level of school curricular characteristic [t(140)=2.880 , p=.004].

Table 13

Summary of Results for Hypotheses 1-6

Hypothesis 1	Result
Scenario A, 2011-2012	Not significant
Scenario B, 2011-2012	Not significant
Scenario C, 2011-2012	Not Significant
Hypothesis 2	Result
Scenario A, 2012-2013	Significant, r=.234; p=.004
Scenario B, 2012-2013	Not significant
Scenario C, 2012-2013	Not significant
Hypothesis 3	Result
Scenario A, 2013-2014	Not significant
Scenario B, 2013-2014	Not significant
Scenario C, 2013-2014	Not Significant
Hypothesis 4	Result
	School achievement scores and Derived MAEP funding; significant; r=.255**; p=.002; Derived MAEP funding and Disaggregated school achievement scores; significant; r= -.244**
Hypothesis 5	Result
	School funding and level of school

	curriculum characteristics significantly related; adjusted R^2=.056; p=.006.
Hypothesis 6	For 2011-2012 and 2012-2013 school funding best explained disaggregated school achievement; p=.003; both years. Level of school achievement in 2013-2014 best explained by school curriculum characteristics, p=.004

Note: * p= .05 Level of significance; ** p=.01 Level of significance

(a) Considers all of the funding from MAEP, local tax, and federal tax dollars.

(b) Considers all for the funding from MAEP, federal tax dollars, and local tax dollars caused by a possible tax base growth.

(c) Considers funding from MAEP, federal tax dollars, and when local taxes do not rise from mileage rate cap efforts.

The results found from the research hypotheses provides helpful information to understand each of the hypotheses in the study. Hypothesis One provided there was no significant relationship found for none of the scenarios. Hypothesis Two discovered a significant relationship for Scenario A for 2012-2013 school year proving that there was a relationship found between the MAEP funding, local tax, and federal tax dollars. Hypothesis Three determined there was no relationship for any of the scenarios examined in the study. Hypothesis Four School determined there was a significant relationship found between school district achievement scores and Derived MAEP funding. It further determined there was significant relationship found between the Derived MAEP funding and Disaggregated school achievement scores. Hypothesis Five proved School funding and the level of school curriculum characteristics were significantly related as a resulted of the adjusted R. Hypothesis Six provided information to show how school curriculum characteristics impact student achievement in schools in Mississippi. For 2011-2012 and 2012-2013, school funding was best explained using disaggregates school achievement. However, in 2013-2014, the level of school achievement was best explained by the school curriculum characteristics.

Discussion of the Research Study

The MAEP funds used for funding school districts in Mississippi has a direct impact on the education of all students within public K-12 schools in the state. The study discovered similar patterns for the school years 2011-2012 and 2012-2013 in relationship to school funds and school achievement scores. In 2013-2014, the Standard Multiple Regression results indicated that school curriculum characteristics had a direct impact on student achievement to a greater extent than the amount of money received by the school districts within the state. This finding is significant because the level of school funds also has had an impact on school

achievement (see Table 13). However, changing the way school achievement grades were disaggregated (i.e., disaggregating school achievement into three types of A's, B's, C's, D's and F's) fundamentally elevated curriculum characteristics to a higher level of relationship to school achievement scores than the relationship between school funding and disaggregated school achievement scores. Previous analyses done in this study indicated this was just the reverse (See years 2011-2012 and 2012-2013; see Table 13). Moreover, the amount of school funds was not found to be significantly related to school achievement when defined using three types of A's, B's, C's, D's, and F's in 2013-2014. However, curriculum characteristics, were found to be significantly related to school achievement when school grades were disaggregated into different types of grades A-F. School leaders may wish to focus on the relationship between achievement and curriculum characteristics and the influence curriculum characteristics have on school achievement.

Conclusions in the Research Study

Research presented here regarding the relationship between MAEP funding and student achievement in schools may help increase information known about MAEP funding of school districts throughout the state. The findings in this research involving school characteristics and funding, for example, are relevant because currently the entire MAEP configuration is being revised within our state. The findings within this study may likely help to show how state funding impacts school achievement across school districts. This study offers suggestions supporting the further examination of the relationship between types of school curriculum characteristics (including teacher characteristics), and school funding. The information contained within this study will hopefully be used to support future decisions regarding funds for schools and academic achievement across the state of Mississippi. Policy makers and researchers

external to Mississippi may find the results of this study to be informative with respect to school funding practices within their state.

Research Implications

Considering these findings, the implications for school leadership with regard to offering a challenging curriculum to all students is essential. All students should be exposed to a curriculum which offers advanced math and science courses. Given the school curriculum was shown to have an impact on student achievement, it is incumbent upon district superintendents and principals to ensure teachers have access to a challenging curriculum and the skills to effectively instruct. In regards to MAEP funding, the Superintendent must provide a budget which addresses the needs of the schools in the district. Superintendent should become knowledgeable regarding the factors affecting the funding of their local school district including local school tax dollars (ie., property tax and industry).

This study also demonstrates that the school curriculum can have a significant impact on student achievement. Building principals need to become more knowledgeable about grade-level and/or content area curricula as well as an expert in instructional strategies. Building principals have to be vigilant about teachers delivering differentiated instruction in accordance of the needs of the students. In effort, the results of this study demonstrate the need to ensure that all children are exposed to a challenging curriculum and effective classroom instruction.

Recommendations for Future Research

Further research is suggested to examine further district funding issues. This study examined every school district state-wide without looking specially at each school within any district. Further research is suggested to explore the relationship between how school achievement is defined (i.e., how grades are assigned to schools in relationship to the ways

schools are differentiated into categories due to differences in state-defined curricular characteristics). Second, recommended by this study is further examination of the funding of schools on a differential basis to make schools more equitable in terms of their curricular dissimilarities (make science and math offerings at all schools more similar). Third, the amount of money provided for teachers in each district is a set amount not accounting for degree level or National Board Certification. Within the scope of curriculum characteristics, teacher characteristics are related to school achievement according to previous research (Coleman Report, 1968; Chetty, R., Friedman, J. N., & Rockoff, J. E., 2011; & Hanushek, E. A., 2016), but it is not present as a factor in school achievement has defined by the MAEP-State Department of Education Information (Mississippi Department of Education, 2014). Last, further research involving individual school districts and teacher characteristics may help to discover ways to address school level achievement across individual school districts. The continual funding of public schools in Mississippi continues to be vital to helping our children to be prepared to compete globally with students all over the world.

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VITA

AVENCE PITTMAN JR

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Martial Status: Married

Children: 2

Education

2011-2017 University of Mississippi Oxford, MS

- Ph.D. Education Leadership; (Will graduate May 2017)

Dissertation Title: "The Relationship Between The Mississippi Adequate Education Program and Student Achievement in Mississippi Schools"

2006-2008 University of Mississippi Oxford, MS

- Masters in Educational Leadership and Administration

1999-2004 Rust College Holly Springs, MS

- B.S, Elementary Education with concentrations in Language Arts and History
- Graduated *magna cum laude*

Experience

2016-Present Pontotoc Elementary School Pontotoc, MS

Principal, Pontotoc Elementary School

Responsible for the overall operation of the school. I am responsible for a faculty/staff of 66. I am responsible for all teacher classroom Formal Evaluations, working to help teachers analyze their individual data from classrooms to improve learning, providing ways to improve their instructional practices through ongoing observation and feedback, and being accessible.

2013-2016 Pontotoc High School Pontotoc, MS

Assistant Principal, Pontotoc High School

Responsible for assisting with the overall operation of the school and serves in the absence of the building level principal. I have assisted in all areas to include M-STAR Evaluations, working to help teachers analyze their individual data from classrooms to improve learning, providing ways to improve their instructional practices through ongoing observation and feedback, and being accessible to students, parents, teachers, and other stakeholders.

2009-2013 Starkville High School Starkville, MS

Assistant Principal, Starkville High School

Responsible for the daily operation of the school to include custodians, faculty, student, and parent relations. It is my responsibility to manage the students, staff, and all activities related to the school. When necessary, I recommended new faculty/staff for hiring consideration to Principal; maintained discipline, and decorum in school campus, getting feedback from students, teachers and parents and taking appropriate actions on it at the appropriate time. I monitored on a regular basis to help maintain a safe and peaceful school where student learning can take place. Daily monitoring of instruction took place to ensure students and teachers remain on task. I also met with parents and other community stakeholders as necessary.

2008-2009 Okolona Public Schools Okolona, MS

Principal, Okolona High School

Responsible for the daily operation of the school to include budget faculty, student, and parent relations. It is my responsibility to mange the students, staff, and all activities related to the school. When necessary, I recommend new faculty/staff for hiring; maintain discipline, and decorum in school campus, getting feedback from students, teachers and parents and taking appropriate actions on it at the appropriate time. I monitor on a regular basis to help maintain a safe and peaceful school where student learning can take place. Daily monitoring of instruction takes places to ensure students and teachers remain on task. I also meet with parents and other community stakeholders as necessary.

2004-2008 Memphis City Schools Memphis, TN

4th Grade Teacher/Grade Chair; Cherokee Elementary School

- Recording all necessary data for documentation purposes – grades, daily attendance, formative assessment scores, and all other data assigned by building principal
- Evaluate data to determine students who are not mastering Standard Performance Indicators and determine other strategies to help students reach mastery level
- Write individualized plans for students when needed
- Work with parents on various ways to re-teach necessary skills at home
- Collaborate with colleagues to determine the best way to meet the needs of all students.
- Helps team members utilize effective instruction strategies and

interventions to reach all students

- Ongoing communication with parents about students progress
-

Jan. 2007-May 2007 Success Educational Services Memphis, TN
Educational Consultant, Site Coordinator

- Developed a plan to assist students who are struggling in reading and math
- Train teachers on the best strategies to use during tutorial program
- Monitor plans that teachers write for students
- Responsible for reporting attendance, staff payroll, and budget for the program at school site
- Collaborate with parents to keep them informed of the progress that their child is making in the program

2005-2006 Memphis City Schools Memphis, TN
Math Specialist, Cherokee Elementary School

- Developed a plan to assist students who are struggling in math
- Evaluate data to determine students who are not mastering Standard Performance Indicators
- Write individualized plans for students
- Train teachers how to use mathematical programs
- Collaborate with colleagues to determine the best way to meet the needs of all students.
- Ongoing communication with parents about students progress