THE RELATIONSHIP BETWEEN 2013-2015 MISSOURI PUBLIC SCHOOL DISTRICT STUDENT PERFORMANCE AND DISTRICT EXPENDITURES AND STATISTICS

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Doctor of Education

By
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December 2016
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STATISTICS

presented by Larry D. Linthacum

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and hereby certify that, in their opinion, is worthy of acceptance.

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<th>Dr. Timothy Wall</th>
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<td>Dr. Bruce Johnson</td>
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<td>Dr. Melody Smith</td>
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DEDICATION

This dissertation is dedicated to my mother, Rosalie Linthacum. She is the most selfless person I know and her sacrifice for the good of others is immeasurable. She encouraged me and challenged me to have the strength and courage to do what is right, think of others before myself, and be responsible for my own actions.
ACKNOWLEDGEMENTS

Thank you to my awesome wife, Angie Linthacum. I am blessed to have an awesome, Godly woman to share in my journey of life. Thank you for shuttling our kids to ball games and activities when I was at school working on my dissertation. Thank you, Angie.

Thank you to my awesome four kids: Micah, Sarah, Hannah and William. You have been patient when Dad wasn’t around because he was working on his doctorate. All four of you have the tremendous opportunity of being difference makers in this world and the Lord has great plans for each of you. I challenge you to do your best and do what’s right, think of others before yourself and be responsible for your own actions.

Thanks to Dr. Tim Wall and Dr. Carol Edmonds for your leadership, patience, and guidance throughout the doctoral program.

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Thanks to the Lord above as I seek His wisdom to be a difference maker in our world today.
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ABSTRACT

The purpose of this quantitative study was to create a predictive model to account for the variance in student performance based upon school district categorical expenditures. The study analyzed seven independent variables, which accounted for 16.1% of the variance in student performance of Missouri schools. The study indicated total instructional resources and schools’ free and reduced levels to be the significant variables in predicting student performance from the seven variables. Furthermore, the researcher determined at least a 95% chance that a true relationship exists between total instructional resources and student performance along with schools’ free and reduced levels and student performance.

While Ravitch (2016) believes states are spending hundreds of millions on accountability with little to show for it, Darling-Hammond (1994) and Koedel (2011) believe accountability in itself is not enough. The study is consistent with Hanushek (1997), who believes more money for schools does not necessarily increase student performance but how the current resources are spent to have the greatest impact on student learning.

Through the lens of accountability, this study will help school leaders consider policy changes based upon the impact of school spending on student learning. Additionally, accounting for the variance in student performance will help improve school leader training programs for future leaders and future research recommendations will be considered.
SECTION ONE:
INTRODUCTION TO THE DISSERTATION-IN-PRACTICE

Background of the Study

In his classic biography of Abraham Lincoln, Thomas (1952) noted that education seemed to him the most important question a people could consider, for every man should have sufficient education to enable him to read the history of his own and of other countries. In his famous quote of “all men are created equal,” Lincoln's words and deeds related to equality and possibility serve as a beacon for all school leaders—principals, teachers, and superintendents—illuminating a keen focus on what is important in their work to help students realize the gift of democracy (Alvy & Robbins, 2010). Lincoln’s beliefs and actions have profound implications for the future and hope of education.

According to Lopez (2013), in many studies hope was a significant predictor of student success in elementary, middle school, high school, and college students. The takeaway from these the studies was that, other conditions being equal, hope leads to a 12% bump in school outcomes (Lopez, 2013). This hope must be considered and a focus for school leaders today when confronted with the realities of America’s educational system.

According to Arne Duncan, former Secretary of the United States Department of Education, one in four young Americans will not graduate from high school and three out of four young people in this country are not mentally or physically fit to serve in the military (U.S. Department of Education, 2013). Additionally, 90 million American adults have below-basic or basic reading skills and only one in 10 kindergartners from poverty becomes a college graduate; unfortunately, a significantly greater number become

Duncan believes we need a generation that reads, writes, and thinks (U.S. Department of Education, 2013). Thirty-two years ago, Gardner (1983) and the National Commission on Excellence in Education declared that the United States was a nation at risk and that educational foundations of our society were being eroded by a rising tide of mediocrity that threatened the future as a nation and a people. Marzano (2003) has shown that students in effective schools as opposed to ineffective schools have a 44% difference in their expected passing rate on a test that has a typical passing rate of 50%.

Because of the need for an improved American public educational system referenced by Duncan and Marzano, this research study analyzed all 519 Missouri K-12 school district’s spending by function codes and expense categories. By accounting for the variance in student performance based upon school district categorical expenditures, the creation of a statewide model to optimize school district categorical expenditures to best promote K-12 student learning was allowed. The model included statewide spending averages by expenditure category as a percent of their total budget, which enabled a comparison between districts per category. The research included student performance data from 2014 and 2015 Annual Performance Report (APR). Missouri’s APR assesses how well each school and school district is meeting Missouri’s education standards under the state’s accountability system. According to the Missouri Department of Elementary and Secondary Education (DESE), schools are given yearly progress reports in the form of an APR (DESE, 2015). Once data are collected, the relationship between student achievement expense categories can be determined. By correlating district student achievement data with statewide expense categories, a regression model can be
developed, which may account for the variance in student performance in Missouri school districts’ performance for 2014 and 2015. From this information, the researcher may determine which categories have the greatest impact on student learning.

This statistical model may yield best practice recommendations for school spending by expense category as it relates to a percent of a school’s total budget. By creating a predictive model for school leaders, the researcher may contribute valuable information toward transforming a school by determining which spending categories have the greatest impact on student learning. This statewide model may assist schools not only in reaching their financial goals, but also inspiring all stakeholders, including students, parents, staff, Board of Education members, and community members to commit to a shared vision of their organizational goals including high student achievement.

**Statement of the Problem**

Although Bartels (2014) revealed evidence of a relationship between financial allocation and district effectiveness in Missouri, no such relationship has been investigated with Missouri public schools with regards to their variance in student performance and how well they are performing under the state’s accountability system. Based upon current research, no predictive statewide model exists to account for the variance in student performance based upon Missouri public schools spending per expense category.

By filling this research gap, the researcher believes schools may benefit for multiple reasons:

1. Schools will have better financial decision making abilities;
2. Schools will have better data driven recommendations to state legislators for
spending allocations;

3. Schools will have better transparency with community stakeholders.

Schools are increasingly asked to do more with fewer resources. A DESE survey of school superintendents in August 2010, in which 319 of 523 districts (61%) responded, confirmed 87% of districts’ budgets had been reduced from previous years and 83% of districts had reduced staff (DESE, 2010). With fewer resources, schools could conceivably take a more aggressive role in evaluating their fiscal spending (Card & Payne, 2002).

This predictive statewide model for school superintendents and other stakeholders may allow school district categorical expenditures to be optimized to best promote K-12 student learning in Missouri public schools. This may include best practice recommendations for school spending by expense category as it relates to a percent of a school’s total budget. By researching student achievement and school district averages per expense category, the knowledge gap can be closed by making better data driven decisions that have the greatest impact on student learning through performance standards, financial stewardship, and balanced scorecards.

The predictive statewide model may help school leaders be more fiscally responsible to spend school finances more wisely to increase student achievement. Closing this gap may help school leaders as they practice transformational leadership, financial stewardship, and the use of balanced scorecards through the lens of accountability as described in the upcoming conceptual/theoretical frameworks section.

**Purpose of the Study**

The purpose of this study was to create a predictive statewide model to account for the variance in student performance based upon 2013-2015 Missouri public school
district categorical expenditures. Additionally, it may help school leaders be better stewards of their patrons’ money by providing valuable information to make better spending decisions.

**Research Questions**

The research question guiding this study was: Which expense categories and independent variables have the greatest impact on student learning? Other questions guiding this study were:

Q2. What are the descriptive statistics of the Missouri public school districts participating in the study from 2013-2015?

Q3. How does a predictive model account for variance in student performance based upon school district expense categories and independent variables?

Q4. Using a multiple regression analysis, how much variance in APR academic achievement is accounted for through the seven independent variables?

H4. Seven independent variables account for 100% of the variance in student performance as measured by APR.

Q5. What is the correlation between each of the seven independent variables and APR academic achievement?

**Conceptual/Theoretical Frameworks**

According to Creswell (2014), a conceptual framework can guide research by providing a visual representation of theoretical constructs (and variables) of interest. Through the lens of accountability conceptual underpinnings of performance standards, financial stewardship, and the use of balanced scorecards were studied.

**Accountability**

According to Hoover and Shook (2003), the contemporary accountability
movement refers to the political reality whereby school officials, including school boards, are under intense pressure to document accountability in student achievement for their district. However, accountability is not unique to schools. In business, it is the bottom line. In manufacturing, it is the quantity and quality of production. In the public sector, it is how well services are being provided. In education, it is student achievement (Gemberling, Smith, & Vallani, 2000).

**School Accountability**

School accountability, the process of evaluating school performance on the basis of student performance measures is increasingly prevalent around the world (Hanushek & Welch, 2006). Educational accountability has become synonymous with governmental efforts to measure and monitor student achievement and increase responsibility to focus instruction and improve subsequent student and school performance (Elmore, 2004). Bonaiuto and Johnson (2008) supported the monitoring of student achievement and believed the increase in accountability is the catalyst that drives educational progress.

Although Darling-Hammond (2014) defended a rich, well-taught curriculum to all students with high expectations, Wakefield argued we are doing a disservice to those students falling behind by promoting students at a young age who fail reading and math exams (Wakefield, 2012). These students are promoted anyway and remain unable to catch back up with their peers (Wakefield, 2012).

In addition to the challenge of students falling behind, accountability can be challenging. Jones and Egley (2004) found that many superintendents are out of touch with the classroom and lack day-to-day knowledge of what their teachers may be facing. Accountability has not been administered equitably or equally, and in many cases, it has become threatening to those who are in the classrooms, while being almost nonexistent at
the upper management level where most decisions are made (Taylor & Williams, 2001). Demand is increasing across all sectors for accountability, and superintendents must be accountable as the district leaders for what occurs within their areas of responsibility, and the policymakers must understand that everyone must give an account when the desired goals have not been achieved (Taylor & Williams, 2001).

When summarizing accountability and according to Darling-Hammond (2014), for more than a decade, the definition of accountability in education has manifested largely in the form of consequences to schools that do not meet annual targets for growth on yearly state tests. This definition has resulted in a narrowing of the curriculum and a widening of the opportunity gap. (p. 6)

Furthermore, Darling-Hammond believed a power accountability system must offer a rich and well-taught curriculum to all students, raising expectations not only for individual schools but also for the functioning of the system as a whole.

**Conceptual Underpinnings**

In Missouri’s public schools, accountability and evaluating school performance can be monitored through the performance standards of the Missouri School Improvement Program (MSIP) and the APR. According to the MSIP Standards and Indicators Manual (1997), the MSIP was designed to promote excellence in the public schools of Missouri. According to DESE (2013), this excellence was based upon assessing education needs, setting goals, developing school improvement plans, monitoring progress, and reporting results to the public through the MSIP. Both the MSIP and APR focus on educational progress.

In additional to performance standards, evaluating school performance can be
reached through financial stewardship as schools today spend nearly three times more per pupil on an inflation adjusted basis than they did 40 years ago (Odden & Busch, 1998). Through school accountability, one way to monitor the spending of school money is through balanced scorecards.

Balanced scorecards were developed to help monitor and measure progress. According to Kaplan and Norton (2005), many executives were convinced that traditional measures of financial performance didn't let them manage effectively and wanted to replace them with operational measures. Kaplan and Norton developed a framework to link and align companies at all levels. This alignment is described in the organizational analysis section through Bolman and Deal’s (2008) structural model and Mintzberg’s (1979) structural model.

Kaplan and Norton’s concept is now being used in schools, as some school systems have linked accountability efforts to a business-based practice called a “Balanced Scorecard” (Kaplan & Norton, 1996). When schools are aligned at all levels with accountability, schools can ensure educational progress through performance standards, financial stewardship, and balanced scorecards.

Design of the Study

Setting

According to Creswell (2014), transformative worldview research “contains an action agenda for reform that may change lives of the participants, the institutions in which individuals work or live, and the researcher’s life” (p. 9). Furthermore, Mertens (2014) held that a transformative worldview research inquiry needs to be intertwined with politics and a political change agenda to confront social oppression at whatever levels it occurs. This study may drive a political change through the lives of participants with the
creation of a predictive statewide model to optimize Missouri public school district
categorical expenditures to best promote K-12 student learning while affording
stakeholders new data to make informed, effective decisions.

Participants

The population used for this study was all of the 519 K-12 school districts in
Missouri. Two years of data was used for each district. All K-12 districts were included
in this study because the independent variables apply to every district and the dependent
variable (student achievement) was taken from APR scores. The 2013-2014 and 2014-
2015 AY was used.

Data Collection Tools

The data used in the study was available through DESE. The researcher worked
with DESE staff to obtain the data and sampling was not necessary because the entire
population of K-12 school districts in Missouri was used. Information on the independent
variables was taken from all K-12 school districts in Missouri using their Annual
Secretary to the Board Report (ASBR) and other information from DESE’s website. The
ASBR provides financial information for all public schools, including beginning fund
balances, ending fund balances, revenues, expenditures and long and short-term debt
information (DESE, 2015). All Missouri public schools are required to submit their
ASBR on a yearly basis (J. Jordan, July 16, 2013). Information for the dependent variable
of APR scores was also available from DESE and the DESE website.

According to Creswell (2003), anytime data are collected, analyzed, and
interpreted, ethical issues emerge and must be considered and mitigated. This was not an
issue in this study as the data collected was public information from school districts
across the state of Missouri and no human subjects were identified. Furthermore, since no
instrument was used to obtain the data, validity and reliability did not apply to this study.

The school year for Missouri districts is based on a fiscal year beginning July 1 and concluding June 30. Two years of data was appropriate for this study, which was intended to measure how districts allocate resources and how this allocation relates to student achievement. The study was not intended to measure increases in spending for specific districts, rather to measure how districts allocate resources and how the allocations relate to student achievement.

Data Analysis

The quantitative study took the form of a multiple regression analysis to determine the relationship among the independent variables identified and to account for the variance in student performance. According to Field (2009), a regression analysis measures an outcome as predicted by one or more independent variables. A linear multiple regression model was used to consider creating a model to optimize district spending by comparing school district spending by categories. To accomplish this goal a multiple regression analysis was used to determine the statistical relationship between and among the independent variables as they are related to the dependent variable. A regression analysis measures an outcome, in this case a quantitative measure as predicted by one or more independent variables (Field & Gillette, 2010).

Quantitative research was the best fit to determine this relationship between and among the independent variables as they relate to the dependent variable. Quantitative research is used when the theory can be tested by measuring the relationship among continuous or scale variables (Creswell, 2003). The researcher requested and received the data from the DESE staff for the study.

To analyze the data, the researcher organized the information and took the overall
percentage of each expenditure category as it related to each school’s total budget. This allowed the researcher to develop a state average per expense category. Additionally, the researcher determined the state average for each expense category from the top 10% of schools based upon their variance in student achievement scores. This provided a baseline for best practice as it compared to student achievement from the APR. Furthermore, the data could be manipulated as it related to the specific needs of a district.

**Limitations, Assumptions, and Delimitations**

**Limitations**

There were limitations to this study. Only the most recent balanced ASBR was available through the DESE website. Contact was made with DESE to obtain the second year of data that was not available from the website. The selected variables of the variance in student performance were measureable, comparable, and were related to student achievement. Since this study was a correlational analysis and not an experimental design, the results were limited by only determining whether a relationship existed. The study used data from all Missouri public school districts and considered 2013-2015 school years.

Additional limitations include school’s free and reduced priced lunch (FRL) and the number of the school’s students with disabilities. These variables were not included in the APR dependent variable. Additionally, the study did not account for supplemental educational services (SES) differences.

**Assumptions**

The study assumed consistency in the data reported to DESE, which compiles data from all school districts according to expenditures reported to them on the Annual Secretary to the Board Report (ASBR) and Core Data. The study assumed that each
school district reported data in the correct accounting code as stated in the Missouri Financial Accounting Manual.

Delimitations

Public school districts from Missouri were the only state considered and two years of school data were considered, 2013-2015. Given the researcher is a Superintendent of a K-12 school district in Missouri; the researcher believes the proper use of school finances has an impact on the success of a district.

Definitions of Key Terms

Academic Years (AY) are defined by the school years in which the research data is collected.

Accountability in this study is in reference to school accountability in which state and federal governments ensure student learning and hold schools accountable.

Annual Performance Report (APR) assesses how well each school and school district is meeting Missouri’s education standards under the state’s accountability system. This assessment measures the variance in student performance.

Annual Secretary to the Board Report (ASBR) contains information such as revenues, expenditures, fund balances, debt, and transportation data that are used for various data comparisons, calculations, and data requests for schools across Missouri.

Current Expenditures per ADA (Average Daily Attendance) is a calculation prepared by DESE that calculates school districts current expenditures and divides the amount by the average daily attendance (DESE, 2013). This number is used to make comparisons between districts on the amount of money spent per student.

Free and Reduced Priced Lunch (FRL) is a program students qualify for based upon parent or guardian financial status to receive either free or reduced priced lunch
through a federal government program. A school’s FRL is a common measure used to calculate poverty in the school community.

**Instructional Resources** are key resources used by teachers every day to help students acquire knowledge. From textbooks to web sites, a variety of resources are available to ensure student learning.

**K-12 Schools** is a term for the summary of Missouri public schools grades kindergarten through 12th grade.

**Limited English Proficiency (LEP)** is a term used in the United States that refers to a person who is not fluent in the English language, often because it is not their native language.

**Missouri Association of School Administrators (MASA)** is a statewide professional association that exists for the purpose of serving the needs of school superintendents and central office administrators.

**Missouri Department of Elementary and Secondary Education (DESE)** is the governing body of Missouri public education. In this study, DESE is also referred to as Department.

**Missouri School Boards’ Association (MSBA)** is an organization that exists to help local school boards succeed through board member training, board policy support and to ensure local communities are connected to their public schools.

**Missouri School Improvement Program (MSIP) 5** is Missouri’s school accountability system for reviewing and accrediting public school districts in Missouri.

**Multiple Regression Analysis** is a technique used for predicting the difference between two or more variables.

**School Improvement** is defined as a systematic, sustained effort aimed at change
in learning conditions and other related internal conditions in one or more schools, with
the ultimate aim of achieving educational goals more effectively (Van Velzen, Miles, Ekholm, Hameyer, & Robin, 1985).

**Supplemental Educational Services (SES)** provides services to students from low-income families. These students attend schools that do not make adequate yearly progress for three or more years.

**Students with Disabilities (Spec Ed)** refers to children or students who require special education in a way that addresses their individual differences and needs. Each school district files an annual Spec Ed profile that includes student achievement, discipline, graduation rates, and dropout rates of students with disabilities.

**Significance of the Study**

Nationally, schools are being held accountable to increase student achievement when revenue and financial resources are uncertain. Messenger (2013) revealed that even though lawmakers brag about funding education at the highest level in the history of Missouri, it is a mixed message. Almost every budget in Missouri produces more education dollars than the year before because of inflation (Messenger, 2013). If the education budget is measured in dollars, the story is entirely different. Messenger believed schools have less buying power nearly every year. In fact, as a percentage of the overall general revenue pie, the slice devoted to public education in Missouri has been shrinking since 2002, in which lawmakers spent 37% of the general revenue budget on education, and the 2014 budget spent 35% (Messenger, 2013).

**Practice**

The focus of this study was Missouri school districts. Policy makers in the state may be interested in the results of this study as the results could inform policy decisions.
related to how districts are funded. In addition to impacting policy decisions at the state level, the results could impact local communities and school boards with information relevant to their local schools. The research contributed to the practice of educational leaders with the possibility of providing a best practice statewide model for school leaders. Based upon literature, the information from this study could improve the decision making processes for school leaders by having a predictive statewide model for school spending that have the greatest impact on student achievement in Missouri public schools.

**Scholarship**

Once data were collected, the researcher determined relationships between student achievement and expense categories. By correlating district student achievement data with statewide expense categories, the researcher developed a regression model to account for the variance in APR in Missouri school districts in 2014 and 2015. From this information, the researcher determined which categories have the greatest impact on student learning.

**Summary**

Because of the need for an improved educational system, this research study analyzed all Missouri K-12 school districts spending by function codes (expense categories). This allowed for the possibility to create a predictive statewide model to account for the variance in student performance and to optimize Missouri public school district categorical expenditures to best promote K-12 student achievement.

The model could have included statewide spending averages by expenditure category as a percent of their total budget. From this information, it can be determined which categories have the greatest impact on student achievement. No such predictor
model exists to account for the variance in student performance based upon statewide spending per expense category.

This research attempted to discover and account for the variance in student performance through a statewide predictive model to make better financial decisions to best promote K-12 student learning. This question drove the research through accountability with underpinnings of performance standards, financial stewardship, and balanced scorecards. When schools were aligned at all levels with accountability, schools can ensure educational progress through performance standards, financial stewardship, and balanced scorecards.

The alignment of accountability and the possibility of constructing a predictor statewide model for Missouri public schools spending may benefit schools across America. Much debate has centered around how effective schools utilize their resources and the impact of programs on student achievement (Bartels, 2014; Neal, 2016; Terry, 2011). This debate can be strengthened by the creation of a predictor model. It could ultimately change the educational system for the betterment of mankind by improving student achievement through research-proven school spending. Schools seem to struggle with putting an instrument in place that would accommodate the overseeing of a continuous organizational improvement process “for discovering which programs work and which do not, for promoting the good ones and weeding out the bad” (Hanushek, 1998, p. xvi). By creating a model for school leaders, the researcher may contribute toward transformation of schools by determining those expense categories that have the greatest impact on student achievement.
SECTION TWO: PRACTITIONER SETTING FOR THE STUDY

Northouse (2013) defined leadership as “a process whereby an individual influences a group of individuals to achieve a common goal.” School leaders must determine the right process to achieve the common goal for students to be successful. For the purposes of this study, this chapter examines the Missouri State Board of Education and their major duties by highlighting their organizational structure. Second, Missouri history of funding is investigated and the major components of how school districts are currently funded. Third, Missouri’s public school accountability system that monitors school progress history through the Annual Performance Report (APR) and the Missouri School Improvement Program 5th Cycle (MSIP 5) is also explored. These topics and school resource allocation are examined through the lens of accountability, the process that underpins the conceptual framework for this study. Additionally, implications for research in the practitioner setting are also explained.

History of the Organization

Missouri State Board of Education

According to the Missouri Constitution, the supervision of instruction in the public schools shall be vested in a state board of education (Article IX, Section 2a). This provision gives the State Board of Education general authority for public education, within limits set by the General Assembly (DESE, 2015).

The Board is made up of eight citizens appointed by the Governor and confirmed by the Senate. Members serve eight-year terms that are staggered. No more than four members of the Board may belong to the same political party. No more than one member of the Board may reside in the same county or Congressional district. When terms expire, members continue to serve until being replaced or reappointed. The Board elects its own
officers each year. Members receive $25 for each day of an official meeting (DESE, 2015).

The Board’s duties and responsibilities range from preschool to the postsecondary and adult levels. The Board does not have direct authority over higher education institutions. However, the Board sets standards for and approves courses and professional programs for teachers and school administrators in Missouri’s public and private higher education institutions (DESE, 2015). Table 1 displays the major duties of the Missouri State Board of Education.

Table 1. Missouri State Board of Education Major Duties

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<td>1.</td>
<td>Appointing the Commissioner of Education and setting policies for the Department of Elementary and Secondary Education.</td>
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<td>3.</td>
<td>Accrediting local school districts. The Board accredits school districts through the “Missouri School Improvement Program,” which includes minimum standards for high school graduation, curriculum, student testing, support services and other areas of school operations.</td>
</tr>
<tr>
<td>4.</td>
<td>Establishing requirements for the education, testing, assessment, certification and recertification of all public school teachers and administrators.</td>
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<tr>
<td>5.</td>
<td>Operating the Missouri School for the Blind (St. Louis), the Missouri School for the Deaf (Fulton), and the statewide system of Missouri Schools for the Severely Disabled.</td>
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<tr>
<td>6.</td>
<td>Overseeing federal education programs and the distribution of federal funds to school districts.</td>
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<td>7.</td>
<td>Establishing regulations for school bus safety and for fiscal management in local school districts.</td>
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<tr>
<td>8.</td>
<td>Submitting annual budget recommendations for education to the Missouri Legislature.</td>
</tr>
<tr>
<td>9.</td>
<td>Administering the state’s Vocational Rehabilitation and Sheltered Workshop program, which provide services for adult Missouri citizens with disabilities.</td>
</tr>
</tbody>
</table>

Note. Adapted from Missouri Department of Elementary and Secondary Education, Retrieved from https://dese.mo.gov/state-board-education/about-state-board#majorduties.

Missouri Department of Elementary and Secondary Education

The Missouri Department of Elementary and Secondary Education (DESE) is the administrative arm of the State Board of Education. In 1947, the State Board of Education appointed a Commissioner of Education and the staff of the DESE to administer its constitutional and statutory duties (Article IX of the Constitution and Chapter 161, RSMo.). H. Pat Wardlaw, Assistant Commissioner for Instruction and Planning, conducted a study to update the system of classification to the State Board of Education.
Education (Wardlaw, 1948). This classification focused on the educational resources provided by districts along with course offerings and adequate facilities.

The DESE is primarily a service agency that works with educators, legislators, government agencies, community leaders and citizens to maintain a strong public education system (DESE, 2015). Through its statewide school-improvement activities and regulatory functions, the Department strives to assure that all citizens have access to high-quality public education, but does not regulate, monitor, or accredit private, parochial, or home schools (DESE, 2015).

The Department’s responsibilities are far reaching and range from early childhood to adult education services and social services like mental health/social security disability. The Department employs about 1,700 people throughout the state and has a total budget of about $5.4 billion (DESE, 2015). According to the Missouri Association of School Administrators, the Department has significant reduced its support and is currently under staffed and unable to help support districts in the necessary manner (MASA, 2015). With the Department understaffed and far reaching, they do not have the capacity to build a statewide model and the need exists to create this predictive model to account for the variance in student performance.

About 96% of the budget consists of state and federal funds that are distributed to local school districts and other agencies (DESE, 2015). As shared earlier, DESE’s responsibility to Missouri patrons includes a strong educational system. This responsibility and increase in accountability is the catalyst that drives educational progress (Bonaiuto and Johnson, 2008).

**School Funding**
The majority of public school funding is derived from federal, state, and local levels with state and local funds making up approximately 90% of all funding (Hanushek & Lindseth, 2009). Revenue for school districts across the nation comes almost evenly from state and local levels while the federal contribution is approximately 7% to 8% of all revenues (Grubb, 2009; Hanushek, 2003).

School funding challenges are nothing new. State aid through state taxation, even in the early 1800s, became a tool for establishing prerequisites for receiving state aid. These included a local tax for schools for a certain length of school term, free heat, free textbooks, and supplies (Cubberley, 1920). “The right to tax for support, and to compel local taxation, was the key to the whole state system of education” (Cubberley, 1920, p. 340).

Cubberley (1920) described the beginnings of school taxation in 1825 with the rationale that “the only safe reliance of a system of state schools lay in the general and direct taxation of all property for their support” (p. 677). The battle for direct, local, county, and state taxation for education was a priority between 1825 and 1830 in all the Northern States. However, increasing state taxation to provide for better schools caused much discussion and argument (Cubberley, 1920).

The source of public school funding has shifted over the last century. In 1920, local budgets and property taxes were the main source of funding with 80% of the revenue coming from local sources (Hightower et al., 2010). The philosophy behind this funding was the common belief that education was a local responsibility and school boards should make the educational decisions for their local schools.
Missouri Public School Funding

The Missouri legislature designed the K-12 funding formula to ensure every school district in the state receives a basic funding amount necessary to provide an adequate education for each student (DESE, 2015). To calculate this formula, analysts started with expenditure data from the state’s top performing school districts and used it to establish a base-funding amount. This ensured that all districts receive a level of funding on par with stronger districts. The base-funding amount was multiplied by an adjusted student attendance figure. After regional cost of living variations were applied, the formula then subtracted the local revenue allotted to each district to determine the amount of funding the state provided to districts (DESE, 2015).

In Missouri, school districts set the tax levy during their August Board of Education meeting. The debt service levy must be set to cover principal, interest, and fee costs on the district’s existing bond issue debt. The operating levy is set from the last voter-approved levy to cover school district expenses and operations and are determined by the local taxing entity and based on prior revenue received, established inflation rates, and increases due to new construction and improvements (Missouri State Tax Commission, 2015). The Hancock Amendment to the Missouri Constitution also limits any percentage of increase to the operating levy at no more than the prior year’s consumer price index once the new construction assessment amount is excluded (Hembree, 2004).

The money generated from property taxes is distributed to taxing entities by each county in Missouri. The money received is distributed to schools based on the “fund” in which the tax was levied. The accounting and expenditure of the money received is governed by rules established by the Missouri State Board of Education in the Missouri

**Local Funding**

Local funds are primarily generated through real estate and personal property taxes collected at the county. These local funds are distributed to each taxing entity including school districts based on their established tax rate. Property is reassessed at the beginning of January in odd numbered years. Real property is classified as residential and assessed at 19%, agricultural property is assessed at 12% and commercial property is assessed at 32%. Personal property is assessed at reduced values (Missouri State Tax Commission, 2015).

Schools are accountable for their funding. The accountability movement asks every jurisdiction with control over public education to hold its schools accountable for using the funds invested in them to accomplish expected outcomes (Jordan & Lyons, 1992). This jurisdiction not only holds true for schools in Missouri, but also schools everywhere.

**Organizational Analysis**

The structure of an organization can be defined simply as the sum total of the ways in which its labor is divided into distinct tasks and then its coordination is achieved among these tasks (Mintzberg, 1993). The sum total begins with the State Board of Education, DESE, local school governance, and school superintendents.

**Missouri State Board of Education and DESE**

According to the Missouri Constitution, “The supervision of instruction in the public schools shall be vested in a state board of education...” (Article IX, Section 2a).
This provision gives the State Board of Education general authority for public education, within limits set by the General Assembly (DESE, 2015).

The Board’s duties and responsibilities range from preschool to the postsecondary and adult levels. The Board does not have direct authority over higher education institutions. However, the Board sets standards for and approves courses and professional programs for teachers and school administrators in Missouri’s public and private higher education institutions (DESE, 2015). Under federal law, the Board serves as the state-level governing body for career and technical education programs provided by local school districts, community colleges and four-year institutions. The Board has no authority to regulate or accredit private, parochial or home schools in the state (DESE, 2015). Figure 1 illustrates the flow of power from State Board of Education through DESE.

*Figure 1. Flow of power from State Board of Education through DESE. Adapted from Missouri Department of Education. Retrieved from https://dese.mo.gov/sites/default/files/DESE_orgchart.pdf*
The Commissioner of Education for DESE reports to the State Board of Education. This position is challenged with advising county and school district personnel, teachers, and patrons with all matters of school law, as well as supervise, make suggestions for instruction, govern schools, school property, and assist in meetings with school personnel (Missouri Const. art. XI). As seen in Figure 1, the Commissioner is given authority over the Deputy Commissioners, one for the Division of Learning Services and the other for the Division of Financial and Administrative Services.

**Missouri Local School Districts Board of Education and Superintendents**

School boards have a history of over 200 years in our county (Land, 2002). Reeder (1954) described the duties of the school board as, “adopting policies for the school system to provide adequate means for executing them, and to see that they are effectively executed” (p. 19). The premise behind locally elected boards of education is through the board, school board members work together with the superintendent to make decisions regarding district policy and allocation of resources (Bjork, Glass, & Brunner, 2005).

These decisions apply to school districts across Missouri. A Board of Education is elected to govern schools and according to MSBA (2016), the most important responsibility of school boards is to work with their communities to improve student achievement in their local public schools. School boards are not responsible for the day-today management of the school district. That job is left to the professional educators hired by the school board. In Missouri the vast majority of school boards consist of seven members. Most school board members serve three-year terms and school board elections are held in April (MSBA, 2016). One of the most important responsibilities of a local school board is to hire the right Superintendent of Schools (MSBA, 2016).
The Superintendent of Schools reports directly to the Board of Education. Their primary responsibility is to ensure student learning through partnerships with students, staff, parents and community members while being a good steward of tax dollars by practicing good financial stewardship. This responsibility ties to the local Board of Education.

Waters and Marzano (2006) found that “board alignment and support of district goals” and “use of resources to support academic achievement and instruction goals” were among the top five areas where superintendents should focus their efforts in order to impact student achievement positively. The alignment from the State Board of Education, DESE, local school Board of Education, and school superintendent is essential for the success of schools.

**Mintzberg Structural Model**

Mintzberg (1979) characterized five components of an organization: the strategic apex, the techno structure, an operational core, the supporting staff, and the middle line. Figure 2 shows a configuration of these parts, as described by Mintzberg (1979). A brief description of the function of each follows with a school structure connection:

*Figure 2. Mintzberg's (1979) model, “Five Basic Parts of Organizations” (p.20) Retrieved from http://www.kcfuganda.org/pic.png*
The strategic apex defines the general priorities of the organization, allocates and obtains resources, and develops strategies to address external factors through the school leadership structure. In educational terms, the strategic apex includes the school district Board of Education and school superintendent.

The techno structure evaluates the organization and gives expert advice, whereas other parts of the organization make decisions. The techno structure provides training and conducts research relevant to the operating core, middle line, and strategic apex. In educational terms, school departments in the techno structure usually include professional development, human resources, technology and controller.

The operating core produces the product, or performs the service, of the organization. In educational terms, teachers constitute the operating core (Lunenburg, 2012; Bolman & Deal, 2008, Mintzberg, 1979).

The supporting staff provides logistical backup and administrative support. These services are not directly related to the product or service provided by the organization but an integral part of a school system. In educational terms, support staff in school districts include cooks, secretarial staff, custodial staff and classroom aides to name a few.

The middle line links the strategic apex to the operating core and provides direct supervision in the operating core and techno structure. In educational terms, the middle line includes building principals and supervisors.

Mintzberg’s (1979) structural frame supported Bolman and Deal (2008) as the structural framework aligns and points to a core premise of the structural lens for organizational performance that includes clear, well understood goals, roles, relationships, and adequate coordination as essential.

According to Randon, Hinings, and Greenwood (1980), organizational structures
change over time. These changes are driven by an organization's configuration of activities in which the structure embodies the organization's basic principles. This is consistent with Bolman and Deal (2008) who believed principles can be most effective when aligned throughout an organization in all practices and internal processes. Leadership guides these internal practices, as Northouse (2010) defined leadership as a process whereby an individual influences a group of individuals to achieve a common goal. The internal processes include defining a common goal, assigning specific roles for their employees, and coordinating specific activities with specific policies, procedures, and chains of command. The structural frame guides these internal processes.

While Bolman and Deal (2008) argued a primary responsibility of managers and leaders is to clarify organizational goals, Greenleaf and Spears (2002) asserted that employee needs must first be addressed. Greenleaf and Spears believed that organizational goals are achieved over a long period only by first facilitating the growth, development, and general wellbeing of the individuals who comprise the organization. Bolman and Deal supported addressing the workplace when recognizing the importance of addressing the relationship between the structure and environment by developing a structure that is clear and appropriate to the goals, the task, and the environment (Bolman & Deal, 2008). Without such a structure, the result is confusion and frustration as people become unsure about what they are supposed to be doing with regards to resource allocation.

In an effective organization, individuals are clear about their responsibilities and their contribution. Policies, linkages, and lines of authority are well defined. When an organization has the right structure and people understand it, the organization can achieve its goals and individuals can be effective in their roles (Starling, 2010) and resources can
be allocated according to organizational goals.

With no statewide model available to account for variance in student achievement based upon statewide spending per public school expense category, the Mintzberg’s structural framework was considered. A statewide model would benefit educators when reviewing budget development processes and specific job duties. This model could potentially change the way school leaders allocate resources when considering the financial impact on student achievement in Missouri’s public schools by the better use of data at every level of a school.

**Leadership Analysis**

**Missouri State Board of Education**

Herrington and Fowler (2002) believed the performance of schools is directly tied to the state board and there is a great variation in the amount of control exerted by the board on the department and on the overall state educational system. The state board is responsible for policies that promote educational quality throughout the state. In this capacity, the board defines the fundamental mission of the state’s education system and develops the system’s long-range goals (NASBE, 2016).

In order to meet these goals, the board enacts appropriate regulations, lobbies for necessary legislation, develops an adequate education budget, supports local implementation efforts, oversees the state department of education, and regularly measures the performance of the system (NASBE, 2016).

This performance is measured through data driving decision making and applied to student achievement testing data because of federal and state test-based accountability policies (Marsh, Pane, & Hamilton, 2006). A statewide predictor model for Missouri public schools that accounts for the variance in student performance might help the
Missouri State Board of Education make better decisions in leading public education in the state of Missouri.

**Missouri Department of Elementary and Secondary Education**

Data-driven decision-making is a process that educators use to make decisions on a continuous basis. Schools that analyze and utilize data are better able to make decisions about sustaining powerful practices, making midcourse corrections, and discontinuing ineffective practices (DESE, 2015). DESE encourages data teams to implement data-driven decision-making at the classroom practitioner level. Data teams provide a structure for teachers to specifically identify areas of student need and collaboratively decide on the best instructional approach in response to those needs. This structure allows schools and schools teams to break down the silos of individual practice and create instead truly professional teams of educators who continuously reflect on and improve their practice (DESE, 2015).

The departments observe the school systems in operation and advise the legislatures of desirable changes and regulations. Moreover, there is a need for a central agent sufficiently knowledgeable about education to serve in a judicial capacity in controversies arising between school districts and local or regional educational agents and agencies of the state. In general, the departments developed from the need to exercise leadership through both local government and the legislative and executive branches of state government and from the need to encourage positive improvement by uniting the educational forces within each state (DESE, 2015).

This improvement process primarily began in 2002, prompted by the need for a robust data-driven decision-making capacity, Missouri state education officials completed a visioning process for the establishment of a comprehensive K-12 data and
reporting system (DESE, 2015). In the subsequent years, DESE implemented a multi-phase strategy to develop this capacity. In 2005, Missouri laid the foundation for the initial development of the Missouri Comprehensive Data System with the adoption of a unique student identifier and implementation of a system to support the assignment of identifiers. These identifiers, designed to be stable across time, would ultimately establish the basis for longitudinal analysis of education records in Missouri (DESE, 2015).

The data collection system went into production in 2008, collecting over one million education records bimonthly to support educational improvement (DESE, 2015). This collection of data allowed state education leaders to make better decisions for schools across Missouri (DESE, 2015). Furthermore, a statewide predictor model for Missouri public schools that accounts for the variance in student performance would help the Missouri DESE make better decisions in leading the public schools of Missouri.

**Local School Board of Education’s Role in Final Decision Making**

School boards must work with their communities to improve student achievement in their local public schools (MSBA, 2016). According to Nutt (2010), school boards need to understand their roles and responsibilities with training in those respective areas to improve student achievement. An essential step in ensuring improvements is to educate board members about the necessity of using good data to inform the decisions they make that affect district wide goals for improving student achievement (NSBA, 2016).

Bryant (2000) stated unequivocally that excellence in the classroom begins with excellence in the boardroom (p. iii). This excellence in the boardroom is consistent with Eadie (2005) and the keys to having an effective school board. Eadie explored five key behavioral traits of high impact school boards:
1. Concentration on governing above all other board work.

2. Active participation in leading district innovation and strategic change.

3. Meticulous attention to a healthy board-superintendent partnership.

4. Outreach to internal and external community.

5. Development of the capacity to govern.

The capacity to govern is critical as the Indiana School Boards Association encourages Indiana school board members to participate in various types of governance and leadership training offered by the Association (Indiana School Boards Association, 1997). This training is consistent with other school board associations across the United States, including Missouri who believes in the importance of leadership training for school board members (MSBA, 2015).

Highly impactful school boards ensure student achievement is the priority of the school district when making governing decisions for the district and they need to be able to access and use high-quality data to make good decisions (NSBA, 2016). A statewide predictor model for Missouri public schools that accounts for the variance in student performance will help local school boards make better decisions in leading their respective schools.

**Superintendent’s Role in Final Decision Making**

School system leaders are discovering the power of data for promoting school improvement (AASA, 2016). With recent advances in technology and the increased demand for assessing student learning, large amounts of data are available to educators. School districts across America are beginning to use the tools necessary to make effective use of the data (AASA, 2016).

Waters and Marzano (2006), writing for McREL in Colorado, found a positive
relationship between district-level leadership and student achievement when district leaders, including the superintendent, district office staff, and school board members do the right work in the right way (p. 20). These researchers go on to suggest what constitutes the right work in the right way:

School board members need to hire a superintendent who skillfully fulfills key leadership responsibilities. They need to support district goals for achievement and instruction. They need to support district- and school-level leadership in ways that enhance, rather than diminish, stability. When focused on effective classroom, school and district practices appropriate achievement and instructional goals, and effective leadership responsibilities, it is clear that school district leadership matters. Under these conditions, rather than be part of the problem, superintendents, district office staff, and school boards can be part of the solution. (Waters & Marzano, 2006, p. 21)

A statewide predictor model for Missouri public school that accounts for the variance in student performance will help district leaders, including the superintendent, district office staff, and school board members make better decisions in leading the public schools in Missouri.

**Transformational Leadership**

The structural frame blueprint from both Bolman and Deal (2006) and Mintzberg (1979) matched Bass and Riggio (2006) as they defined transformational leadership as a style of leadership that involves inspiring followers to commit to a shared vision and goals for an organization. This shared stakeholder involvement is crucial, specifically parent and community members as they work together to provide the best education
possible. Bittner (2015) believed the transformational leader facilitates this process of working together. Furthermore, the transformational leader serves as a role model to followers by living by the same principles that he or she expects of their followers (Bittner, 2015). This statewide model will assist schools not only in reaching their financial goals through resource allocation, but their organizational goals including high student achievement.

According to Bass (1991), transactional leadership is adequate in firms that are functioning in stable markets but transformational leadership is needed in unstable markets. The “Great Recession” that started in 2007 strained schools to make difficult decisions when cutting expenses and now would be considered an unstable market (Zuckerman, 2010). Bass (1991) believed when schools are faced with problems, transformational leadership needs to be fostered at all levels. Transformational leadership has the flexibility to forecast and meet new demands and changes as they occur (Bass, 1991).

This flexibility also defines transformational leaders. According to Yukl (1999), transformational leaders provide intellectual stimulation, develop follower skills, and build collective effectiveness while allowing individual input depending on the specific situation. Bolman and Deal’s (2008) structural frame supported building collective effectiveness through the effective organization of groups and teams within an organization. But while building effectiveness is important, it needs to be connected (Bolman & Deal, 2008).

Northouse (2013) created this connection when defining transformational leadership as the process whereby a person engages with others. Whereas Weber’s notion of authority through transactional leadership in which followers focus on listening to the
leader, transformational leadership raises the level of motivation and morality in both the leader and the follower (Houghton, 2010; Northouse, 2013). Northouse (2013) went on to explain this connection is the focal point of educational leadership. When this connection is made, transformational leadership takes place and the research will indicate student-learning increases. Furthermore, Northouse noted the strengths of the transformational leadership model as that it allows for multiple perspectives, it is intuitive, and it is process-based. Additionally, Northouse believed the process seems intuitive to the leader because of the focus on the follower’s needs. This focus allows for leaders to rely on their past experiences and intuition to make a decision, which must be considered when determining resource allocation.

According to Creswell, transformative worldview research “contains an action agenda for reform that may change lives of the participants, the institutions in which individuals work or live, and the researcher’s life” (Creswell, 2014, p. 9). Furthermore, Mertens (2014) held that a transformative worldview research inquiry needs to be intertwined with politics and a political change agenda to confront social oppression at whatever levels it occurs. This study may drive a political change through the lives of participants with the creation of a predictive model to optimize school district categorical expenditures to best promote K-12 student learning.

But what effect does transformational leadership have on student achievement? According to Stobaugh (2003), transformational leadership positively and significantly relates to teacher perceived effectiveness, satisfaction and extra effort. But Robinson, Lloyd, and Rowe (2008) “found that instructional leadership has a stronger effect on student achievement than transformational leadership” (p. 454). This research is consistent with Shatzer, Caldarella, Hallam, and Brown (2013) who also found
instructional leadership having a greater impact on test scores than transformational leadership.

But while the research is varied on the impact of transformational leadership on student achievement, Bass and Riggio (2006) believed the transformational leadership style as transformational. Through transformational leadership and the potential creation of a statewide model to account for variance in student achievement, schools can be transformed through the shared vision of student success by determining which expense categories have the greatest impact on student achievement.

**Implications for Research in the Practitioner Setting**

The process of constructing a predictor statewide model for Missouri public school spending will benefit schools across America. It may improve the Missouri public school system by improving student achievement through research-proven school spending. By creating a statewide model for school leaders, the researchers can, potentially, determine the relationship between Missouri public school district APR and Missouri public school district expense categories. Furthermore, the researcher will potentially determine which expense categories have the greatest impact on student learning through a multiple regression model.

With no statewide model available to account for variance in student achievement based upon statewide spending per expense category, transformational leadership and the structural framework will be considered. A potential statewide model would benefit educators when reviewing budget development processes and specific job duties. Schools need a continuous organizational improvement process “for discovering which programs work and which do not, for promoting the good ones and weeding out the bad” (Hanushek, 1998, p. xvi). By creating a model for school leaders, the researcher may
contribute toward transformation of schools by determining which expense categories have the greatest impact on student achievement.

Specifically, policy changes and practice changes may be considered based upon the research findings. This statewide model could potentially change the way Missouri public school leaders allocate resources and potentially change specific spending priorities. The research may contribute to the practice of educational leaders with the possibility of a best practice statewide model for Missouri public school leaders to improve the decision-making processes.

Summary

Through a better understanding of the history and organizational structure of DESE and the State Board of Education, along with Missouri’s public school funding and accountability systems, educational stakeholders can better understand the parameters guiding public schools in Missouri. These parameters guide transformational leaders to achieve a common goal for student success (Northouse, 2013).

Bass and Riggio (2006) defined transformational leadership as a style of leadership that involves inspiring followers to commit to a shared vision and goals for an organization. The structural framework points to this same core premise that includes clear, well understood goals, roles, relationships, and adequate coordination as essential (Bolman & Deal, 2008). When school leaders determine the impact of school resources on student achievement, the possibility of a best practice statewide model for school leaders to prioritize school spending would positively impact schools across America.
SECTION THREE: SCHOLARLY REVIEW FOR THE STUDY

As was first introduced in the first chapter of this study, the purpose of this study was to consider the development of a predictor statewide model that would optimize school district categorical expenditures to best promote K-12 student learning. For the purpose of this study, the review of literature was expanded and accountability served as the conceptual framework. Performance standards, financial stewardship, and balanced scorecards were viewed through the lens of accountability.

**Accountability**

Bonaiuto and Johnson (2008) supported the monitoring of student achievement and believed the increase in accountability is the catalyst that drives educational progress. Hess (2006) supported this educational progress. In *Tough Love for Schools*, Hess insisted that we must ask how schools can do more, rather than how they can get more, and that we be blunt and clear-eyed in our assessments of both schooling and proposed reforms. This conservative view gives more local control and holds schools accountable for their processes and procedures (Hess, 2006).

While supporting evidence existed for accountability (Bonaiuto & Johnson, 2008; Hanushek & Welch, 2006; Hess, 2006; Welch, 2004), Kohn (2000) argued that accountability and standardized testing is especially hurtful to students who need our help the most. According to Kohn, our children are tested to an extent that is unprecedented in our history and unparalleled anywhere else in the world. These tests are biased as low-income families cannot afford proper test preparation and the tests measure the temporary acquisition of facts and skills more than genuine understanding (Kohn, 2000). In addition to Kohn, Ravitch (2016) argued that an increase in accountability itself is not producing positive results. According to Ravitch, Florida has led the way in creating a system where
schools and students are judged by test scores. Florida has seen some test score gains, but it is nowhere near the top of the national field in national examinations. Ravitch believed states are spending hundreds of millions of dollars on testing, accountability, grading, and choice with little to show for it.

While Ravitch (2016) argued accountability has not seen the intended results, Darling-Hammond (1994) believed accountability in itself is not enough. Darling-Hammond argued the equitable use of performance assessments depends not only on the design of the assessments themselves, but also on how well the assessment practices are interwoven with the goals of authentic school reform and effective teaching. Koedel (2011) supported that accountability in itself is not sufficient. According to Koedel, the fundamental problem with current school accountability is no pressure from competitive markets in education. Koedel’s solution is external interventions that include university administrators and accountability measures in K-12 schools (Koedel, 2011).

When summarizing accountability and according to Darling-Hammond (2014), for more than a decade, the definition of accountability in education has manifested largely in the form of consequences to schools that do not meet annual targets for growth on yearly state tests. This definition has resulted in a narrowing of the curriculum and a widening of the opportunity gap. (p. 6)

Furthermore, Darling-Hammond believed a power accountability system must offer a rich and well-taught curriculum to all students, raising expectations not only for individual schools but also for the functioning of the system as a whole.
Performance Standards

Missouri School Improvement Program 5th Cycle (MSIP 5)

The fifth version of the Missouri School Improvement Program (MSIP 5), Missouri’s accountability system for reviewing and accrediting public school districts, outlines the expectations for student achievement with the ultimate goal of each student graduating ready for success in college and careers. The comprehensive MSIP accountability system was established in 1990 and has evolved with each version. MSIP 5 Resource and Process Standards are designed to promote continuous improvement and innovation within each district. The Process Standards are often qualitative in nature. The MSIP 5 Performance Standards are applied to recognize the achievement and continuous growth of all students as they prepare for a global economy (MSIP 5 Comprehensive Guide, 2015).

MSIP 5 is intended to distinguish performance of schools and districts in a valid, accurate, and meaningful way so those in need of improvement can receive appropriate support and interventions, while high-performing districts can be recognized as models of excellence (DESE, 2015).

In July of 2012, Missouri’s ESEA Flexibility Request was approved by the United States Department of Education. Missouri was able to use its own accountability system, which was already in place. The State was able to offer an aligned comprehensive system of support to schools and districts as outlined in this document. The adopted MSIP 5 Standards represent the work of hundreds of educators. Numerous refinements and revisions were made before the State Board of Education approved the final changes. The standards were developed as a guide for Missouri educators continuing school-improvement efforts to reach the goal of student achievement in Missouri ranking among
the top 10 states by 2020 (MSIP 5 Comprehensive Guide, 2015). Missouri’s Top 10 by 20 plan pursues as a primary goal that all students will graduate high school prepared for college and career-ready. To measure progress toward this goal and to distinguish among school and district performance, the Missouri Department of Elementary and Secondary Education (DESE) computes an APR (Annual Performance Report) score for each Local Education Agency (LEA) and school.

The MSIP 5 Performance Standards were approved by the State Board of Education in 2011 and went into effect in 2013. Missouri’s ESEA Flexibility Request was approved by the United States Department of Education in July of 2012. The components used for federal accountability went into effect upon approval of the request (MSIP 5 Comprehensive Guide, 2015).

**Annual Performance Report**

DESE annually evaluates the performance of all public school districts through the APR. This report shows how well each school and school district is meeting Missouri’s education standards under the state’s accountability system, MSIP 5 (DESE, 2014). The reports are used to review and accredit Missouri’s school districts.

This overall score is comprised of scores for each of the MSIP 5 Performance Standards: (a) Academic Achievement, (b) Subgroup Achievement, (c) High School Readiness (K-8 districts) or College and Career Readiness (K-12 districts), (d) Attendance Rate, and (e) Graduation Rate (K-12 districts). Status, progress, and growth (where applicable) are used to calculate a comprehensive score used to determine the accreditation level of a school district (MSIP 5 Comprehensive Guide, 2015).

Data for academic achievement (English language arts and mathematics), subgroup achievement (English language arts and mathematics) and graduation rates are
also used for federal accountability determinations, including reward, focus, and priority school identification, for LEAs and schools (MSIP 5 Comprehensive Guide, 2015).

The academic achievement standard has 56 points possible from English Language Arts (16 points possible), math (16 points possible), science (16 points possible), and social studies (8 points possible). Scores are based on student scores on standardized tests, grade level assessments, and a student growth model. The subgroup achievement standard has 18 points possible from English Language Arts (4 points possible), math (4 points possible), science (4 points possible), and social studies (2 points possible). Subgroups include students on free/reduced lunch, minority students, English Language Learners (ELL) students, and students with disabilities. Scores are based on student scores on standardized tests, grade level assessments, and a student growth model. The college and career readiness standard has 30 points possible from six indicators. Indicators 1-4 have 20 possible points and are from graduate participation and scores on approved standardized tests measuring post-secondary preparedness. Indicators 5-6 have 10 possible points and are from graduates who attend post-secondary education or are in the military and graduates from completed approved career education programs. Students who regularly attend school calculate the attendance rate standard and have 10 possible points. The graduation rate standard has 30 possible points and is based on the percentage of students who graduate based on requirements established by the State Board (DESE, 2015; MSIP 5 Comprehensive Guide, 2015).

In Missouri’s schools, educational progress can be monitored through the performance standards of the MSIP and the APR. According to the MSIP Standards and Indicators Manual (1997) the MSIP was designed to promote excellence in the public schools of Missouri. According to DESE (2013), this excellence was based upon
assessing education needs, setting goals, developing school improvement plans, monitoring progress, and reporting results to the public through the MSIP. In addition to the MSIP, Missouri’s APR shows how well each school and school district is meeting Missouri’s education standards under the state’s accountability system. Both the MSIP and APR focus on educational progress.

This educational progress is monitored through the MSIP and APR. Imms (2008) argued that educational institutions that are failing students should be held accountable. Missouri’s development of performance standards MSIP 5 and APR measure whether students are failing and schools are being held accountable. These performance standards and the increase in accountability is the catalyst that drives educational progress (Bonaiuto & Johnson, 2008).

**Financial Stewardship**

Sergiovanni (1992) defined school financial stewardship as the rights and prerogatives inherent in the administrator’s position that move to the periphery, and attention is focused on duties and responsibilities to other persons and more importantly to the school itself. Merriam-Webster’s online dictionary (n.d.) defined financial stewardship as the careful and responsible management of something entrusted to one’s care. This focus of trust is important when spending state and local funds as schools examine the allocation of resources.

Jackson, Johnson, and Persico (2015) found that a 10% increase in per-pupil spending each year for 12 years of public school leads to .27 more completed years of education, 7.25% higher wages, and a 3.67 percentage point reduction in the annual incidence of adult poverty, with effects much higher for children from low-income families.
Some schools today spend nearly three times more per pupil on inflation-adjusted bases than they did 40 years ago (Odden & Busch, 1998). But spending money has been argued for many years as to whether an increase in revenues has delivered an increase in student achievement as schools measure their progress.

**Supporting Evidence**

Cullen (2012) determined that as school district instructional expenditures increased, student achievement increased. This achievement was proven to increase in all five-subject areas evaluated, including reading, math, writing, science, and social studies. Several statistically significant results were present for all analyses.

A study of eighth grade students in Illinois found expenditures per student and average teacher salary have modest positive effects in mathematics test scores (Sander, 1999). Additionally, Sander (1999) found “there is supportive evidence on the positive relationship between student achievement and the use of district finances in spending may be associated with significant increases in achievement” (p. 361).

More supporting evidence on whether an increase in revenues delivered an increase in student achievement was from Ellinger, Hirlinger, and Wright (1995). They found a significant positive relationship (\(p < .01\)) between school funding and student achievement for both 1989-90 and 1990-91 in Oklahoma. They were significantly significant at the .01 level in both years. However, because it was significant in Oklahoma does not mean that it is consistent in all states.

**Opposing Evidence**

A study in Kansas found the opposite to be true from the findings in Oklahoma. According to Neymotin (2010), an increase in school district finances from $7,500 per
student to $9,400 per student had little effect on student persistence or test scores. Neymotin noted the pupil-teacher ratio and the number of full time equivalent teachers could be manipulated by the school districts and evidence that income and poverty levels of students were related to test scores. Teacher and administrator training/salary, administrative structure, and parental involvement all played a role in how effectively resources are employed in helping students to succeed.

But the research is not always consistently interpreted. According to Lips, Watkins, and Fleming (2008), there is a lack of evidence on whether education expenditures are related to academic achievement. Hanushek (1997) reviewed meta-analysis studies on the effect of per-pupil expenditures on academic achievement and found either no relationship or a relationship that is either weak or inconsistent. However, researchers Hedges and Greenwald “analyzed the same data used by Hanushek and concluded that increasing per-pupil expenditures has a significant positive impact on student achievement” (as cited in Lips et al., p. 4). Greenwald, Hedges, and Laine (1996) analyzed and found that a broad range of resources were positively related to student outcomes, with effect sizes large enough to suggest that moderate increases in spending may be associated with significant increases in achievement.

While Cullen (2012) revealed statistically significant differences, Brazeale (2014) argued a weak negative correlation between expenditure per pupil and student achievement. Even though financial resources were somewhat limited, school districts still found ways to meet state student achievement standards. Additionally, Ilon and Normore (2006) revealed family socioeconomic status as an important factor in predicting academic achievement. When schools were equal on the socioeconomic status, a statistically significant negative relationship existed when comparing educational
expenditures to student achievement.

**Financial Stewardship Recommendations**

Ravitch (2011) supported financial stewardship by advocating paying teachers a fair wage for their work and not “merit pay” based on deeply flawed and unreliable test scores. Darling-Hammond (2010) supported this research by recognizing bonuses alone cannot succeed in recruiting and retaining teachers without efforts to create competitive, equitable salaries and working conditions. Furthermore, Koedel recognized costs associated with reducing class sizes and believed the wise use of school resources by recommending a more efficient use of school finances might be to focus on struggling students through interventions such as after-school tutoring or summer school (Betts, Zau, & Koedel, 2010). This research supported financial stewardship, as they believed in a fair wage and favorable work place for staff members and targeted use of school finances on struggling students (Betts, Zau, & Koedel, 2010; Darling-Hammond, 2010; Ravitch, 2011).

Gloudemans (2010) suggested transforming school funding through student-based budgeting. This new approach supports both transformational leadership and collaborating with teachers to determine student needs and also financial stewardship by allocating school resources to specific student needs. Financial stewardship can be monitored through balanced scorecards.

As the research questions were first introduced in the first chapter of this study, financial stewardship and accountability could possibly help develop a predictive model to optimize school district categorical expenditures to best promote K-12 student learning. School resource allocation and stewardship support a predictive model.
**Balanced Scorecards**

According to Kaplan and Norton (2005), many business executives were convinced that traditional measures of financial performance didn't let them manage effectively and wanted to replace them with operational measures. These measures led to the creation of a balanced scorecard (BSC) to monitor and measure progress. With the increase in accountability and as this originated in the private sector, more and more school districts have adopted a performance management system.

Cowart (2010) identified improvement in student performance was due largely to the consistent application of a BSC and a focus on a systemic approach. This approach included a simple color-coded chart to indicate precisely which school or department met expectations and which ones did not. Improvement was supported and sustained by stakeholders who had accurate knowledge of past and present performance and who accepted responsibility for helping the district improve. Kaplan and Norton (2005) revealed a similar type of color-code chart to make it clear which objective had been achieved and which performance issue needed executive's attention.

The BSC framework for managing the organizational, curricular, instructional, and fiscal reforms have enhanced schools’ and departments’ performance (Archer, 2007; Kaplan, 2006). This performance and one framework under consideration to monitor and measure progress is the Baldrige Performance Excellence Framework.

**Malcolm Baldrige National Quality Award**

The Malcolm Baldrige National Quality Award recognizes U.S. organizations in the business, health care, education, and nonprofit sectors for performance excellence. In 1999, the Malcolm Baldrige National Quality Award was made available for public education and focused on school districts engaged in implementation of the Baldrige
Criteria as a model for school improvement (Arcaro, 1995; Petruncola, 2008). The Baldrige framework is a school improvement process involving analyzing data, restructuring climate, and changing the processes that are not contributing to continuous improvement (Petruncola, 2008).

There are seven categories addressed in the Baldrige Criteria: (a) leadership; (b) strategic planning; (c) customer and market focus; (d) measurement, analysis, and knowledge management; (e) human resource focus; (f) process management; and (g) results. Figure 3 depicts the working relationship between the seven criteria.


**Source:** Baldrige (2006)


According to Halloran (2008), the Baldrige framework is a viable school improvement model. Specifically, Halloran had five major findings:
1. The Baldrige framework is a viable school improvement model.

2. The key elements in the implementation process are the effective use of resources, visionary leadership, staff development, and the creation of school improvement processes.

3. The major implementation challenges were time, the change process, sustainability, and staff development.

4. Effective leadership is an important component in overcoming the implementation challenges.

5. There is a perception that the Baldrige framework has a positive impact on student achievement.

While Halloran (2008) believed there was a perception that the Baldrige framework had a positive impact on student achievement, the evidence was mixed. Pentruncola (2008) found K-12 school districts that won the Baldrige Award reported an increase in student achievement (Green, 2002; Mathews, 2002; Pederson, 2002). But Hicks (2005) found otherwise. Hicks studied the impact of the Baldrige framework on several Michigan Elementary Schools and their performance on State Assessments. Hicks concluded that there was no statistical significance on Michigan standardized test scores of the three Baldrige and three non-Baldrige schools studied (p. 123). Additionally, Pentrunciolar (2008) found the implementation of the Baldrige criteria was not significantly (p < .05) related to fourth grade mathematics achievement.

While the evidence is mixed on the impact of the Baldrige framework on student achievement, the researcher believed BSCs can possibly help develop a predictive statewide model to optimize Missouri public school district categorical expenditures to best promote K-12 student learning. School resource allocation and the careful and
responsible management of something entrusted to one’s care supported a possible predictive model (Merriam-Webster’s online dictionary, n.d.).

The BSCs can help schools measure progress as schools are evaluated on the basis of student performance. These student performance measures are increasingly prevalent around the world as school accountability drives educational progress (Bonaiuto & Johnson, 2008; Hanushek & Welch, 2006).

Missouri Public School Finance through the Lens of Accountability

School accountability, the process of evaluating school performance on the basis of student performance flows through performance standards, financial stewardship, and BSCs (Hanushek & Welch, 2006). Missouri’s development of performance standards MSIP 5 and APR measure whether students are failing and schools are being held accountable. These performance standards and the increase in accountability drive educational progress (Bonaiuto & Johnson, 2008).

This educational progress is based upon the evaluation of school performance on the basis of student performance through financial stewardship (Hanushek & Welch, 2006). Koedel recognized costs associates with reducing class sizes and believes in accountability and the wise use of school resources by recommending a spending of resources on struggling students (Betts, Zau, & Koedel, 2010). The BSCs can help schools measure progress on the basis of student performance. These student performance measures are increasingly prevalent as school accountability drives educational progress (Bonaiuto & Johnson, 2008; Hanushek & Welch, 2006).

Summary

A gap exists to account for variance in student achievement based upon statewide spending per expense category. Can a statewide model be developed to optimize
Missouri public school district categorical expenditures to best promote K-12 student learning? This question drove the research through accountability with underpinnings of performance standards, financial stewardship, and BSCs.

Imms (2008) argued that educational institutions that are failing students should be held accountable. Missouri’s development of performance standards MSIP 5 and APR measure whether students are failing and schools are being held accountable. These performance standards and the increase in accountability are the catalyst that drives educational progress (Bonaiuto & Johnson, 2008).

As the research questions were introduced in the first chapter of this study, performance standards could possibly help develop a predictive model to optimize school district categorical expenditures to best promote K-12 student learning. This learning is best be supported through financial stewardship.

Financial stewardship and the study of the relationship between student expenditures and student achievement are diverse. Many studies found that an increase in student expenditures does not have a consistent positive impact on student achievement (Brazeale, 2014; Hanushek, 2007; Lips et al., 2008; Neymotin, 2010; Yeh, 2007). Coleman (1966) found that school funding levels do not significantly affect student achievement, but student background and teacher effectiveness has the greatest impact, and Hanushek (1997) supported this argument. Hanushek believed more money for schools does not increase learning but it is how schools spend existing money that has the greatest impact on student learning. Other studies found the opposite to be true and found that increasing per-pupil expenditures has a positive impact on student achievement (Cullen, 2012; Ellinger et al., 1995; Greenwald et al., 1996; Sander, 1999). Although the research was inconsistent with overall findings, researchers tended to agree that schools
can use existing resources more efficiently. Financial stewardship takes place when the careful and responsible management of something entrusted to one’s care is practiced and will support a possible predictive statewide model (Merriam-Webster’s online dictionary, n.d.).

Cowart (2010) identified district improvement in student performance was due largely to the consistent application of the balanced scorecard and a focus on a systemic approach. This approach aligned the BSC with improvement plans and reports to stakeholders. In this way, BSCs can possibly help develop a predictive statewide model to optimize school district categorical expenditures to best promote K-12 student learning.
SECTION FOUR: CONTRIBUTION TO PRACTICE

Plan for Dissemination of Practitioner Contribution

Recipients of the practitioner contribution will be attendees of the American Association of School Administrators (AASA) 2017 Leadership Conference. The AASA is the American school superintendents association that serves over 14,000 school districts. The organization is known as the premier association for school system leaders and serves as the national voice for public education and district leadership on Capitol Hill. This conference is the largest superintendent conference in the United States for school superintendents and school board members.

Type of Dissemination

The presentation was an oral presentation with a PowerPoint slide show at the AASA annual conference. The slide show informed the audience of the relationship between school district financial allocations and student performance. Upon request the full report may be made available.

Rationale for this Contribution Type

An oral presentation with PowerPoint slides was the most effective dissemination of the information. The researcher provided specific data applicable to audience members and led a discussion of how the findings from the study applied to the professional school setting for school superintendents and school board members.

Presentation

The PowerPoint presentation delivered can be found in Appendix A.
SECTION FIVE: CONTRIBUTION TO SCHOLARSHIP

Target Journal

The target journal used in this study was the *Education Administration Quarterly*.

Rationale for this Target

The *Education Administration Quarterly* presents prominent empirical and conceptual articles focused on timely and critical leadership and policy issues facing educational organizations. The *Education Administration Quarterly*’s primary focus is on studies of educational leadership, organizations, leadership development, and policy as they related to elementary and secondary levels of education.

Plan for Submission

An abstract of approximately 100 to 150 words was sent to the journal’s online portal for review.

Submission-Ready Journal Article

Abstract

The purpose of this quantitative study was to create a predictive model to account for the variance in student performance based upon school district categorical expenditures. The study analyzed seven independent variables, which accounted for 16.1% of the variance in student performance of Missouri schools. The study indicated total instructional resources to be the only significant variable in predicting student performance from the seven variables. Furthermore, the researcher determined at least a 95% chance that a true relationship exists between total instructional resources and student performance.

While Ravitch (2016) believes states are spending hundreds of millions on accountability with little to show for it, Darling-Hammond (1994) and Koedel (2011)
believe accountability in itself is not enough. The study is consistent with Hanushek (1997), who believes more money for schools does not necessarily increase student performance but how the current resources are spent to have the greatest impact on student learning.

Through the lens of accountability, this study will help school leaders consider policy changes based upon the impact of school spending on student learning. Additionally, accounting for the variance in student performance will help improve school leader training programs for future leaders and future research recommendations will be considered.

**Statement of the Problem**

Although Bartels (2014) revealed evidence of a relationship between financial allocation and district effectiveness in Missouri, no such relationship has been investigated with Missouri public schools with regards to their variance in student performance and how well they are performing under the state’s accountability system. Based upon current research, no predictive statewide model exists to account for the variance in student performance based upon Missouri public schools spending per expense category.

By filling this research gap, the researcher believes schools may benefit for multiple reasons:

1. Schools will have better financial decision making abilities;
2. Schools will have better data driven recommendations to state legislators for spending allocations;
3. Schools will have better transparency with community stakeholders.

Schools are increasingly asked to do more with fewer resources. A Missouri
Department of Elementary and Secondary Education (DESE) survey of school superintendents conducted in August 2010, in which 319 of 523 districts (61%) responded, confirmed 87% of districts’ budgets had been reduced from previous years and 83% of districts had reduced staff (DESE, 2010). With fewer resources, schools could conceivably take a more aggressive role in evaluating their fiscal spending (Card & Payne, 2002).

This predictive statewide model for school superintendents and other stakeholders may allow school district categorical expenditures to be optimized to best promote K-12 student learning in Missouri public schools. This may include best practice recommendations for school spending by expense category as it relates to a percent of a school’s total budget. By researching student achievement and school district averages per expense category, the knowledge gap can be closed by making better data driven decisions that have the greatest impact on student learning through performance standards, financial stewardship, and balanced scorecards (BSCs).

The predictive statewide model may help school leaders be more fiscally responsible to spend school finances more wisely to increase student achievement. Closing this gap may help school leaders as they practice transformational leadership, financial stewardship, and the use of BSCs through the lens of accountability as described in the upcoming Conceptual/Theoretical Frameworks section.

**Purpose of the Study**

School leaders face difficult choices every day and schools are being held accountable for their funding. The accountability movement asks every jurisdiction with control over public education to hold its schools accountable for using the funds invested in them to accomplish expected outcomes and ensure student learning (Jordan & Lyons,

The purpose of this study was to create a predictive statewide model to account for the variance in student performance based upon Missouri public school district categorical expenditures. Additionally, it will help school leaders be better stewards of patron’s money by providing valuable information to make better spending decisions.

**Conceptual/Theoretical Frameworks**

According to Creswell (2014), a conceptual framework can guide research by providing a visual representation of theoretical constructs (and variables) of interest. Through the lens of accountability, conceptual underpinnings of performance standards, financial stewardship, and the use of BSCs was studied.

**Accountability**

According to Hoover and Shook (2003), the contemporary accountability movement refers to the political reality whereby school officials, including school boards, are under intense pressure to document accountability in student achievement for their district. However, accountability is not unique to schools. In business, it is the bottom line. In manufacturing, it is the quantity and quality of production. In the public sector, it is how well services are being provided. In education, it is student achievement (Gemberling, Smith, & Vallani, 2000, p. 6).

**School Accountability**

School accountability, the process of evaluating school performance on the basis of student performance measures, is increasingly prevalent around the world (Hanushek & Welch, 2006). Educational accountability has become synonymous with governmental efforts to measure and monitor student achievement and increase responsibility to focus instruction and improve subsequent student and school performance (Elmore, 2004).
Bonaiuto and Johnson (2008) supported the monitoring of student achievement and believe the increase in accountability is the catalyst that drives educational progress.

Although Darling-Hammond (2014) defended a rich, well-taught curriculum to all students with high expectations, Wakefield (2012) argued we are doing a disservice to those students falling behind by promoting students at a young age who fail reading and math exams. These students are promoted anyway and are unable to catch back up with their peers (Wakefield, 2012).

In addition to the challenge of students falling behind, accountability can be challenging as Jones and Egley (2004) found that many superintendents are out of touch with the classroom and lack day-to-day knowledge of what their teachers may be facing. Accountability has not been administered equitably or equally, and in many cases, it has become threatening to those who are in the classrooms, while being almost nonexistent at the upper management level where most decisions are made (Taylor & Williams, 2001).

Demand is increasing across all sectors for accountability, and superintendents must be accountable as the district leaders for what occurs within their areas of responsibility, while policymakers must understand that everyone is obliged to give an account when the desired goals have not been achieved (Taylor & Williams, 2001).

When summarizing accountability and according to Darling-Hammond (2014), for more than a decade, the definition of accountability in education has manifested largely in the form of consequences to schools that do not meet annual targets for growth on yearly state tests. This definition has resulted in a narrowing of the curriculum and a widening of the opportunity gap.

(p. 6)

Furthermore, Darling-Hammond believed a power accountability system must offer a
rich and well-taught curriculum to all students, raising expectations not only for individual schools but also for the functioning of the system as a whole.

**Conceptual Underpinnings**

In Missouri’s public schools, accountability and evaluating school performance can be monitored through the performance standards of the Missouri School Improvement Program (MSIP) and the Annual Performance Report (APR). According to the MSIP Standards and Indicators Manual (1997), the MSIP was designed to promote excellence in the public schools of Missouri. According to DESE (2013), this excellence was based upon assessing education needs, setting goals, developing school improvement plans, monitoring progress, and reporting results to the public through the MSIP. Both the MSIP and APR focus on educational progress.

In additional to performance standards, evaluating school performance can be reached through financial stewardship as schools today spend nearly three times more per pupil on an inflation adjusted bases than they did 40 years ago (Odden & Busch, 1998). Through school accountability, one way to monitor the spending of school money is through BSCs.

Balanced scorecards were developed to help monitor and measure progress. According to Kaplan and Norton (2005), many executives were convinced that traditional measures of financial performance didn’t let them manage effectively and wanted to replace them with operational measures. Kaplan and Norton developed a framework to link and align companies at all levels. This alignment is described in the upcoming organizational analysis section through Bolman and Deal’s (2008) structural model and Mintzberg’s (1979) structural model.

Kaplan and Norton’s (1996) concept is now being used in schools, as some school
systems have linked accountability efforts to a business-based practice called a BSC.

When schools are aligned at all levels with accountability, schools can ensure educational progress through performance standards, financial stewardship, and BSCs.

**Research Methodology**

A case study method approach was used to examine two years of student performance data from all K-12 school districts in Missouri. With the primary purpose to account for the variance in student performance based upon Missouri public school expenditures, quantitative research was used when the theory can be tested by measuring the relationship among continuous or scale variables (Creswell, 2003).

**Data Collection Tools**

The data used in the study was available through DESE. The researcher worked with DESE staff to obtain the data and sampling was not necessary because the entire population of K-12 school districts in Missouri was used. Information on the independent variables was taken from all K-12 school districts in Missouri using their Annual Secretary to the Board Report (ASBR) and other information from DESE’s website. The ASBR provides financial information for all public schools, including beginning fund balances, ending fund balances, revenues, expenditures and long and short-term debt information (DESE, 2015). All Missouri public schools are required to submit their ASBR on a yearly basis (J. Jordan, July 16, 2013). Information for the dependent variable of APR scores was also available from DESE and the DESE website.

According to Creswell (2003), anytime data are collected, analyzed, and interpreted, ethical issues emerge and must be considered and mitigated. This was not an issue in this study as the data collected was public information from school districts across the state of Missouri and no human subjects were identified. Furthermore, since no
instrument was used to obtain the data, validity and reliability did not apply to this study.

The school year for Missouri districts is based on a fiscal year beginning July 1 and concluding June 30. Two years of data were appropriate for this study and the study was intended to measure how districts allocate resources and how this allocation relates to student achievement. The study was not intended to measure increases in spending for specific districts, rather to measure how districts allocate resources and how this allocation relates to student achievement.

Data Analysis

The quantitative study took the form of a multiple regression analysis to determine the relationship among the independent variables identified and to account for the variance in student performance. According to Field (2009), a regression analysis measures an outcome as predicted by one or more independent variables. A linear multiple regression model was used to consider creating a model to optimize district spending by comparing school district spending by categories. To accomplish this goal a multiple regression analysis was used to determine the statistical relationship between and among the independent variables as they are related to the dependent variable. A regression analysis measures an outcome, in this case a quantitative measure as predicted by one or more independent variables (Field & Gillette, 2010).

Quantitative research was the best fit to determine this relationship between and among the independent variables as they relate to the dependent variable. Quantitative research is used when the theory can be tested by measuring the relationship among continuous or scale variables (Creswell, 2003). The researcher requested and received the data from the DESE staff for the study.

To analyze the data, the researcher organized the information. The researcher took
the overall percent of each expenditure category as it relates to each school’s total budget. This allowed the researcher to develop a state average per expense category. Additionally, the researcher determined the state average for each expense category from the top 10% of schools based upon their variance in student achievement scores. This provided a baseline for best practice as it compares to student achievement from the APR. Furthermore, the data can be manipulated as it relates to the specific needs of a district.

**Limitations, Assumptions, and Delimitations**

**Limitations**

There were limitations to this study. Only the most recent school information was available through the DESE website. Contact was made with the Department to obtain the second year of data that was not available from the website. The selected variables of the variance in student performance were measureable, comparable, and were related to student achievement. Since this study was a correlational analysis and not an experimental design, the results were limited by only determining if a relationship exists. The study used data from all Missouri school districts and considered two school years. Additional limitations include school’s free and reduced priced lunch (FRL) percentage and school’s students with disabilities. These variables are not included in the APR dependent variable.

**Assumptions**

The study assumed consistency in the data reported to DESE. The DESE compiles data from all school districts according to expenditures reported to them on the ASBR and Core Data. The study assumed that each school district reported data in the correct accounting code as stated in the Missouri Financial Accounting Manual.
Delimitations

Public school districts from Missouri were the only districts considered. Given the researcher is a Superintendent of a K-12 school district in Missouri, the researcher believed the proper use of school finances has an impact on the success of a district.

Results

Data was collected and analyzed from K-12 schools in Missouri. The guiding theory was that school districts could better allocate resources to increase student performance as measured by their APR. The research was guided by five questions:

Q1: Which expense categories and independent variables have the greatest impact on 2013-2015 MO K-12 public schools on student learning?

The first research question identified which expense categories and independent variables had the greatest impact on student learning. The study indicated total instructional resources to be significant in predicting APR by having at least a 95% chance that a true relationship exists between total instruction and APR with a $p$-value of .0004 as indicated in Table 2. This outcome is consistent with Cullen (2012), who determined that as school district instructional expenditures increased, student achievement increased.

### Table 2. Summary Output

<table>
<thead>
<tr>
<th></th>
<th>Coeff.</th>
<th>Std. Error</th>
<th>P-value</th>
<th>Lower 95%</th>
<th>Upper 95%</th>
<th>Lower 95.0%</th>
<th>Upper 95.0%</th>
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<tr>
<td>Intercept</td>
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<td>0.0622</td>
<td>0.0000</td>
<td>0.7274</td>
<td>0.9716</td>
<td>0.7274</td>
<td>0.9716</td>
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<tr>
<td>Enrollment</td>
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<td>0.0000</td>
<td>0.6574</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>Free / Reduced Students w/ Disabilities</td>
<td>-0.0027</td>
<td>0.0002</td>
<td>0.6574</td>
<td>-0.0031</td>
<td>-0.0022</td>
<td>-0.0031</td>
<td>-0.0022</td>
</tr>
<tr>
<td>Operating Levy</td>
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<td>0.1013</td>
<td>0.3584</td>
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<td>0.2918</td>
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<td>Instruction Professional Development</td>
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<td>0.0004</td>
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<td>-4.3702</td>
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</tbody>
</table>
Q2: What are the descriptive statistics of the Missouri public school districts participating in the study from 2013-2015?

The third research question described descriptive statistics of the Missouri public schools. Table 3 contains descriptive statistic for K12 enrollment.

Table 3. Descriptive Statistics for K12 Enrollment

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Mean</th>
<th>Kurtosis</th>
<th>Skewness</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
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<tbody>
<tr>
<td>2014</td>
<td>519</td>
<td>1668.3</td>
<td>3310.81</td>
<td>145.33</td>
<td>19.506</td>
<td>4.135</td>
<td>19</td>
<td>24905</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>519</td>
<td>1665.9</td>
<td>3302.83</td>
<td>144.98</td>
<td>19.099</td>
<td>4.099</td>
<td></td>
<td>25055</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1038</td>
<td>1667.1</td>
<td>3305.23</td>
<td>102.59</td>
<td>19.205</td>
<td>4.111</td>
<td></td>
<td>25055</td>
<td></td>
</tr>
</tbody>
</table>

*.05 level of significance

The third research question described descriptive statistics of the Missouri public schools. Table 4 contains descriptive statistics for FRL percentages.

Table 4. Descriptives for FRL%

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Mean</th>
<th>Kurtosis</th>
<th>Skewness</th>
<th>Minimum</th>
<th>Maximum</th>
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<td>2014</td>
<td>519</td>
<td>55.52</td>
<td>15.52</td>
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<td>.14</td>
<td>-.30</td>
<td>.35</td>
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<tr>
<td>2015</td>
<td>519</td>
<td>57.18</td>
<td>18.82</td>
<td>.83</td>
<td>.37</td>
<td>.35</td>
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<td>17.26</td>
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<td>.47</td>
<td>.15</td>
<td></td>
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</tbody>
</table>

*.05 level of significance

The third research question described descriptive statistics of the Missouri public schools. Table 5 contains descriptive statistics for the percent of students with disabilities.

Table 5. Descriptives for Students with Disabilities %

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Mean</th>
<th>Kurtosis</th>
<th>Skewness</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>519</td>
<td>.13</td>
<td>.04</td>
<td>.002</td>
<td>.29.37</td>
<td>3.24</td>
<td>.05</td>
<td>.59</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>519</td>
<td>.14</td>
<td>.04</td>
<td>.002</td>
<td>.27.93</td>
<td>3.21</td>
<td>.05</td>
<td>.61</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1038</td>
<td>.14</td>
<td>.04</td>
<td>.001</td>
<td>.28.47</td>
<td>3.22</td>
<td>.05</td>
<td>.61</td>
<td></td>
</tr>
</tbody>
</table>

*.05 level of significance
The third research question described descriptive statistics of the Missouri public schools. Table 6 contains descriptive statistics for school operating levy.

Table 6. Descriptives for Operating Levy

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>Kurtosis</th>
<th>Skewness</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>519</td>
<td>3.61</td>
<td>.73</td>
<td>.03</td>
<td>.96</td>
<td>.85</td>
<td>1.24</td>
<td>6.57</td>
</tr>
<tr>
<td>2015</td>
<td>519</td>
<td>3.63</td>
<td>.74</td>
<td>.03</td>
<td>.77</td>
<td>.82</td>
<td>1.26</td>
<td>6.47</td>
</tr>
<tr>
<td>Total</td>
<td>1038</td>
<td>3.62</td>
<td>.73</td>
<td>.02</td>
<td>.85</td>
<td>.84</td>
<td>1.24</td>
<td>6.57</td>
</tr>
</tbody>
</table>

* .05 level of significance

The third research question described descriptive statistics of the Missouri public schools. Table 7 contains descriptive statistics for the percent of money spent on total instruction as it relates to a school’s total budget.

Table 7. Descriptives for Total Instruction %

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>Kurtosis</th>
<th>Skewness</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>519</td>
<td>.59</td>
<td>.04</td>
<td>.002</td>
<td>1.09</td>
<td>-.55</td>
<td>.33</td>
<td>.73</td>
</tr>
<tr>
<td>2015</td>
<td>519</td>
<td>.59</td>
<td>.04</td>
<td>.001</td>
<td>3.66</td>
<td>-.55</td>
<td>.33</td>
<td>.73</td>
</tr>
<tr>
<td>Total</td>
<td>1038</td>
<td>.59</td>
<td>.04</td>
<td>.001</td>
<td>2.61</td>
<td>-.23</td>
<td>.33</td>
<td>.73</td>
</tr>
</tbody>
</table>

* .05 level of significance

The third research question described descriptive statistics of the Missouri public schools. Table 8 contains descriptive statistics for the percent of money spent on professional development.

Table 8. Percent of Money Spent on Professional Development

<table>
<thead>
<tr>
<th></th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>Kurtosis</th>
<th>Skewness</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>.005</td>
<td>.003</td>
<td>13.70</td>
<td>2.93</td>
<td>.0000</td>
<td>.03</td>
</tr>
<tr>
<td>2015</td>
<td>.004</td>
<td>.002</td>
<td>6.45</td>
<td>1.64</td>
<td>.0000</td>
<td>.01</td>
</tr>
<tr>
<td>Total</td>
<td>.004</td>
<td>.002</td>
<td>16.51</td>
<td>2.99</td>
<td>.0000</td>
<td>.03</td>
</tr>
</tbody>
</table>

*.05 level of significance
The third research question described descriptive statistics of the Missouri public schools. Table 9 contains descriptive statistics for the total budget.

Table 9. Descriptives for the Total Budget

<table>
<thead>
<tr>
<th>Year</th>
<th>N</th>
<th>Mean in Millions</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>Kurtosis</th>
<th>Skewness</th>
<th>Minimum in Millions</th>
<th>Maximum in Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>519</td>
<td>17.60</td>
<td>39186651</td>
<td>1720103</td>
<td>29.61</td>
<td>4.93</td>
<td>.570</td>
<td>366.05</td>
</tr>
<tr>
<td>2015</td>
<td>519</td>
<td>18.09</td>
<td>40332796</td>
<td>1772121</td>
<td>29.65</td>
<td>4.94</td>
<td>.565</td>
<td>376.36</td>
</tr>
<tr>
<td>Total</td>
<td>1038</td>
<td>17.83</td>
<td>39728491</td>
<td>1233114</td>
<td>29.54</td>
<td>4.93</td>
<td>.565</td>
<td>376.36</td>
</tr>
</tbody>
</table>

* .05 level of significance

Q3: What is the level of relationship accounted for in student performance based upon school district expense categories and independent variables?

Using the formula from Figure 4, the researcher was able to predict and account for the variance in student performance. The researcher determined instructional resources and FRL percentages as the two independent variables having a significant relationship with student performance. These two variables were used to predict student performance using the formula. This outcome is consistent with Cullen (2012), who determined that as school district instructional expenditures increased, student achievement increased. Additionally, Blazer (2009) found a strong relationship between students’ socioeconomic status and levels of achievement.
Multiple Regression Analysis

- **Multiple Regression:**
  \[ Y = a + b_1X_1 + b_2X_2 + B_3X_3 + ... + B_iX_i + u \]

Where:
- \( Y \) = the variable that we are trying to predict (DV)
- \( X \) = the variable that we are using to predict \( Y \) (IV)
- \( a \) = the intercept
- \( b \) = the slope (Coefficient of \( X_1 \))
- \( u \) = the regression residual (error term)

*Figure 4.* Multiple Regression Analysis formula to predict student achievement. Retrieved from [http://www.slideshare.net/sabakhan16/regression-analysis-10759319](http://www.slideshare.net/sabakhan16/regression-analysis-10759319)

Q4: Using a multiple regression analysis, how much variance in APR academic achievement is accounted for through the seven independent variables?

H4: Seven independent variables account for 100% of the variance in student performance as measured by APR.

As indicated in Table 10, the null hypothesis for question three was rejected because the seven independent variables accounted for 16.1% of the variance in APR academic achievement. Although the research is overall inconsistent, researchers agreed that schools can use existing resources more efficiently, which is consistent with this study. Hanushek (1997) believed more money for schools does not increase learning, but rather how schools spend existing money has the greatest impact on student learning. The Coleman Report (1966) found that school funding levels do not significantly affect student achievement while Ellinger, Hirlinger, and Wright (1995) found a significant positive relationship (\( p < .01 \)) between school funding and student achievement.
Table 10. *Regression Statistics*

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple R</td>
<td>0.40126</td>
</tr>
<tr>
<td>R Square</td>
<td>0.16101</td>
</tr>
<tr>
<td>Adjusted R Square</td>
<td>0.15530</td>
</tr>
<tr>
<td>Standard Error</td>
<td>0.11311</td>
</tr>
<tr>
<td>Observations</td>
<td>1038.0000</td>
</tr>
</tbody>
</table>

Q5: What is the correlation between each of the seven independent variables and APR academic achievement for two years of data?

As indicated in Table 11, the correlation between enrollment and APR was a weak negative correlation of -0.061. The correlation between FRL and APR was a mild negative correlation of -0.362. The correlation between students with disabilities and APR was a weak negative correlation of -0.063. The correlation between operating levy and APR was a weak positive correlation of 0.028. The correlation between total instruction and APR was a weak positive correlation of 0.159. The correlation between professional development and APR was a weak negative correlation of -0.063. The correlation between the total budget and APR was a weak negative correlation of -0.072.

Table 11. *Correlations*

<table>
<thead>
<tr>
<th></th>
<th>Correlation to APR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment</td>
<td>-0.061</td>
</tr>
<tr>
<td>Free &amp; Reduced</td>
<td>-0.362</td>
</tr>
<tr>
<td>Students w/ disabilities</td>
<td>-0.063</td>
</tr>
<tr>
<td>Operating levy</td>
<td>0.028</td>
</tr>
<tr>
<td>Total instruction</td>
<td>0.159</td>
</tr>
<tr>
<td>Professional Development</td>
<td>-0.050</td>
</tr>
<tr>
<td>Total Budget</td>
<td>-0.072</td>
</tr>
</tbody>
</table>
Discussion

The study analyzed two years of student performance from the 2013-2014 and 2014-2015 school years respectively and a predictive model was created using the analyzed data.

For purpose of the study, the researcher narrowed the study from all school expense categories to seven independent variables. Using the formula from Figure 4, the researcher was able to predict and account for the variance in student performance through a multiple regression analysis as indicated in Table 10. The researcher determined instructional resources and FRL percentages as the two independent variables having a significant relationship with student performance.

**Instructional Resources and Free and Reduced Lunch Percentages**

Instructional resources and Free and Reduced Lunch (FRL) percentages have a significant relationship with student performance. These two variables were used to predict student performance with the formula in Figure 4. This outcome is consistent with Cullen (2012), who determined that as school district instructional expenditures increased, student achievement increased. Additionally, Blazer (2009) found a strong relationship between students’ socioeconomic status and levels of achievement.

The seven independent variables accounted for 16.1% of the variance in student performance as indicated in Table 10. This variance examined two years’ worth of school data from the 2013-2014 and 2014-2015 school years respectively. Additionally, the study indicated total instructional resources to be the only significant variable in predicting student performance. Furthermore, the researcher determined at least a 95% chance that a true relationship exists between total instructional resources and student performance. Hanushek (1997) believed more money for schools does not increase
learning, but rather how schools spend existing money to have the greatest impact on 
student learning and the researcher would support this research as indicated with a 
variance of 16.1%.

Although the research is overall inconsistent, researchers agree that schools can 
use existing resources more efficiently. The Coleman Report (1966) found that school 
funding levels do not significantly affect student achievement, but student background 
and teacher effectiveness have the greatest impact on student learning.

The study indicated primarily weak correlations between the independent 
variables and student performance as indicated in Table 11. The FRL had a mild negative 
correlation of -0.362, which is consistent with research. According to Blazer (2009), there 
is a strong relationship between students' socioeconomic status and their levels of 
academic achievement. Blazer references some of the factors contributing to poor student 
achievement that are beyond schools’ control to include a higher incidence of prenatal 
adversity, illness and injury, exposure to pollutants, nutritional problems, residential 
mobility, and a lack of educational activities and materials in the home.

The correlation between total instruction and student performance was a weak 
positive correlation of .159. When combining this correlation with the significant $p$ value 
in Table 11 for instruction, the study indicates with the sample size two years of data, the 
error measurement associated with these variables is small enough so the correlation is 
reliable. The study indicated the money spent on instructional resources to be significant 
in predicting student performance.

**Recommendations**

With a gap in quantitative research to predict student performance based upon 
statewide spending per expense category, the researcher created a predictive model. This
model accounts for the variance in student achievement based upon school district expense categories and independent variables through a multiple regression analysis. The researcher has eight recommendations to better understand the relationship between Missouri public school district student performance and district expenditures and statistics:

1. School leaders analyze district strategies to address FRL population and always use research based-data to drive the decision making process.

2. Further development of predictor model using additional independent variables to better account for the variance in student performance based upon school district categorical expenditures and independent variables.

3. School leaders compare and analyze accumulated descriptive statistics of Missouri schools and current spending expenditures.

4. School leaders analyze instructional resources within their respective school and always use research based data to drive the decision making process.

5. School leaders evaluate leadership practices and district alignment in support of district goals throughout the organization.

6. School leaders consider policy changes based upon the impact of school spending on student learning.

7. School leaders evaluate leadership-training programs for future leaders based upon performance standards, balanced scorecards and stewardship.

8. School leaders develop a balanced scorecard to monitor and measure student performance.

**School Leaders Analyze District Strategies to Address FRL Population**

According to Blazer (2009), there is a strong relationship between students’
socioeconomic status and their levels of academic achievement. Blazer references some of the factors contributing to poor student achievement that are beyond schools’ control to include a higher incidence of prenatal adversity, illness and injury, exposure to pollutants, nutritional problems, residential mobility, and a lack of educational activities and materials in the home.

A recommendation for school leaders would include the development of specific strategies to address schools with high poverty. According to Gorski (2015), schools must have a willingness to take a stand when low-income students and families are being shortchanged. This willingness must start with district leaders and must align throughout the district to the classroom.

Further research in poverty and the correlation with student achievement is recommended. Payne (2005) believed in developing human capital through relationships that start in the classroom. These relationships can be developed while ensuring good pediatric care for all students, expanding existing low income housing subsidy programs to reduce low income families’ mobility, and funding after school programs (Rothstein, 2008). Furthermore, Noguera (2003) believed there must be substantial investments in the communities in which they live to develop these relationships.

**Further Development of Predictor Model**

As shown in Table 10, the study indicated seven independent variables accounted for 16.1% of the variance in APR academic achievement. But the study does not indicate what variables account for the other 83.9% (100% - 16.1%) of the variance in APR academic achievement. With the creation of the predictor model using seven independent variables, a predictor model using additional independent variables would possibly help identify a greater variance in APR academic achievement. This recommendation would
enable a more extensive predictive model based upon additional independent variables.

A statewide model would benefit educators when reviewing budget development processes and specific job duties. This model could potentially change the way school leaders allocate resources when considering the financial impact on student achievement in Missouri’s public schools by the better use of data at every level of a school. The researcher considered the development of this model but chose to focus on seven independent variables and their correlation with student performance for this study.

**School Leaders Compare and Analyze Descriptive Statistics**

With only focusing on seven independent variables, a recommendation would be for school leaders to assess the descriptive statistics of all expense categories and independent variables for schools across Missouri. This would allow school leaders to compare school data with averages across the state and possibly make better leadership decisions when these comparisons are analyzed. Two years of descriptive statistics from all Missouri schools would help identify possible shortcomings when comparing state averages with their own school.

**School Leaders Analyze Instructional Resources within their Respective District**

The result of instructional resources being significant in predicting student performance serves as a resource and recommendation for school leaders when evaluating which expense categories have the greatest impact on student performance. First, the researcher recommends reviewing research proven practices on best practices of instructional resources. Second, the researcher recommends analyzing instructional resource budgets as it compares to state averages and comparable size schools. Third, the researcher recommends reviewing actual instructional resource spending as it compares to state averages.
While Hanushek (1997) believed schools need to focus on their existing resources and how it is spent, the researcher agrees that schools can use existing resources more efficiently. The Coleman Report (1966) found that school funding levels do not significantly affect student achievement and the researcher believes school leaders must assess all processes within a school system. These processes include evaluating current expenditures, specifically the instructional resources within a school budget.

**School Leaders Evaluate Leadership Practices and District Alignment**

School leaders must evaluate leadership practices and alignment throughout the district in support of district goals. Marzano (2003) indicated school leadership has a substantial effect on student achievement. This starts with the board of education as Waters and Marzano (2006), found the board alignment and support of district goals and the use of resources, which support academic achievement and instruction goals as a critical step in the educational process. This step in the process aligns with transformational leadership.

Bass and Riggio (2006) defined transformational leadership as a style of leadership that involves inspiring followers to commit to a shared vision and goals for an organization. Mintzberg’s (1979) structural frame and Bolman and Deal’s (2008) structural framework both align and point to a core premise of the structural lens for organizational performance that includes clear, well understood goals, roles, relationships, and adequate coordination as essential. The researcher recommends setting clear, defined roles and expectations around instructional resources as indicated in the study.

But before clear defined roles are set, Greenleaf and Spears (2002) believed assessing the current roles and expectations, and development of the current employees...
before implementing instructional goals within a school organization. Greenleaf and Spears believed organizational goals would be achieved over a long period only by first facilitating the growth, development, and general well-being of the individuals who comprise the organization. The development of a shared vision and goals that are aligned throughout the organization will make a positive impact on the relationship between Missouri public school district student performance and district expenditures and statistics.

The researcher recommends the development of BSCs to help school leaders measure progress as schools are evaluated on the basis of student performance. These student performance measures are increasingly prevalent around the world as school accountability drives educational progress (Bonaiuto & Johnson, 2008; Hanushek & Welch, 2006).

**Conclusion**

In conclusion, there is a gap in quantitative research to predict student performance based upon statewide spending per expense category. The purpose of this study was to create a predictive model to account for the variance in student performance based upon school district categorical expenditures. Additionally, school leaders can make better financial decisions when expense categories and independent variables can be identified that have the greatest impact on student performance.

Although the research is overall inconsistent, researchers agree that schools can use existing resources more efficiently. The Coleman Report (1966) found that school funding levels do not significantly affect student achievement, but student background and teacher effectiveness do. Additionally, Hanushek (1997) believed more money for schools does not increase learning but spending existing money wisely has the greatest
impact on student learning.

Through the study, the researcher indicated seven independent variables account for 16.1% of the variance in APR academic achievement. Additionally, the study indicated total instructional resources to be significant in predicting APR by having at least a 95% chance that a true relationship exists between total instruction and APR. The study also indicated FRL percentages as significant in predicting APR by having at least a 95% chance that a true relationship exists between total instruction and APR and this must be monitored. Bonaiuto and Johnson (2008) supported the monitoring of student achievement and believe the increase in accountability is the catalyst that drives educational progress.

Through the lens of accountability, this study will help school leaders consider policy changes based upon the impact of school spending on student learning. Additionally, accounting for the variance in student performance will help improve school leader training programs for future leaders and future research recommendations will be considered, including the process of constructing a predictor statewide model using additional independent variables to better account for the variance in student performance. This variance can be monitored and measured through the use of a balanced scorecard.
SECTION SIX: SCHOLARLY PRACTITIONER REFLECTION

The dissertation process had a tremendous influence on my role in education and me as a person. It was a journey and a process as this reflection reviews the dissertation influence on my practice as an educational leader and my practice as a scholar.

Influence of Dissertation on my Practice as an Educational Leader

I am an educational leader. A leader, formal or informal, must provide the strategic direction and inspiration for positive change to occur (Rowold, 2014). But what is the direction and inspiration referenced by Rowold? I believe it is transformational leadership and the dissertation process helped me determine and refine my leadership style and the associated processes to carry it out.

Transformational Leadership

Bass and Riggio (2006) defined transformational leadership as a leadership style that involves inspiring followers to commit to a shared vision and goals for an organization. This is an area in which I am striving to facilitate a commitment to a shared vision. Not only is getting staff members to commit to a shared vision, but specifically getting parent and community members to join in the shared vision as they work together to provide the best education possible for our students. Bittner (2015) believed the transformational leader facilitates this process of working together. Getting parents to get involved has been a challenge and is an area I need to continue to work toward improving. If we would serve more as a transformational leader and as a role model to followers by living by the same principles that he or she expects of their followers, we would increase the willingness of stakeholders to work together (Bittner, 2015).

Transformational leadership was identified through the leadership analysis section of the dissertation process as my educational leadership framework. According to Yukl
(1999), transformational leaders provide intellectual stimulation, develop follower skills, and build collective efficacy while allowing individual consideration depending on the specific situation. I know I can improve in the area of providing intellectual stimulation and I hope to grow in this area.

This program has opened my eyes to transformational leadership and my desire to be a transformational leader. Bittner (2015) believed transformational leaders make a conscious effort to be transparent. Bird (2011) believed a framework can be developed that calls for transparency and the involvement of all stakeholders and simplicity. It puts the superintendent in the vital leadership position of being the catalyst for orchestrating change for continuous improvement across the district. This is my focus of working toward a culture of continuous improvement in everything we do through transparency and that we must be able to justify every decision we make throughout the district to our stakeholders.

Northouse (2013) created this connection when defining transformational leadership as the process whereby a person engages with others. This connection raises the level of motivation and morality in both the leader and the follower. Northouse noted the strengths of the transformational leadership model as that it allows for multiple perspectives, it is intuitive, and it is process-based. I know I can continue to improve in this area, but I feel engaging with stakeholders is one of my strengths. I must continue to work toward improvements in this area through listening to stakeholder needs through engagement opportunities.

The role of a leader is to persuade a follower to support the leader’s goals (Mihelic, Lipicnik, & Tekavcic, 2010). This idea supports Bolman and Deal’s (2008) study and the symbolic frame as transformational leaders help to inspire and motivate
others to collectively accomplish great things through their leadership process. Through the dissertation process, I have expanded my leadership style as I work to become a transformational leader.

Processes

Through this doctoral program, I have learned to understand the power of a systemic process. As a school leader, I am a believer in the process. When you focus on the process, the product will take care of itself. When you focus on doing the right things, as Bolman and Deal (2008) stated, ethics must reside in a sense of character that harbors core beliefs and values. That core beliefs and values focus on ensuring a culture of continuous improvement.

I was able to develop a process and a conceptual framework to guide my practice. According to Creswell (2014), a conceptual framework can guide practice by providing a visual representation of theoretical constructs (and variables) of interest. My interest and desire to be a part of the doctoral program was anchored in three areas: learning, partnerships, and financial stewardship. My conceptual framework has guided a systemic process that I have developed throughout the doctoral program. This process will continue to evolve and guide me as an educational leader. This process is the following:

1. Where are we, both reality and perception?
2. Where do we want to be?
3. How will we get there with a detailed plan?
4. What are the agreed upon expectations with appropriate parties?
5. How will we measure and monitor progress?
6. How will we respond when agreed upon expectations are not met?

I have started using this process in my current role as school superintendent and
have seen positive results. I believe this process will continue to evolve as I continue to strive to facilitate a culture of continuous improvement through transformational leadership.

**Influence of Dissertation on my Practice as a Scholar**

Prior to the dissertation process, I did not utilize the educational resources available to me. Through the dissertation process, I was able to change my way of thinking and learn a process that allows me to obtain accurate research. This process allows me to accurately assess the current research and determine the validity of the research. Gaps in research still exist and it is our responsibility as educational leaders to fill these gaps that focus on student learning.

As an educational leader, it is my responsibility to continuously improve as an education scholar and to always use researched-based information to drive the decision making process regarding instructional resources and free and reduced lunch percentages. According to DuFour and Eaker (1998), continuous improvement is “persistent discomfort with the status quo and a constant search for a better way characterize the heart of a professional learning community” (p. 28). Through the processes learned as an educational scholar, I feel confident moving forward and facing the challenges we will face.

My goal is using common sense as I make decisions as an educational leader. Through the dissertation process readings, I was challenged to utilize a process when making decisions versus relying on common sense. Bardach (2012) provided steps as a guide for policy analysis as outlined:

1. Defining the problem;

2. Assembling the evidence;
3. Constructing alternatives;
4. Selecting the criteria;
5. Projecting outcomes;
6. Confronting trade-offs; and
7. Ultimately making a decision and telling your story.

Through these seven steps, the dissertation process influenced my practice as an educational scholar.

I have eight recommendations moving forward to better understand the relationship between Missouri public school district student performance and district expenditures and statistics:

1. School leaders analyze district strategies to address FRL population and always use research based data to drive the decision making process.
2. Further development of predictor model using additional independent variables to better account for the variance in student performance based upon school district categorical expenditures and independent variables.
3. School leaders compare and analyze accumulated descriptive statistics of Missouri schools and current spending expenditures.
4. School leaders analyze instructional resources within their respective school and always use research based data to drive the decision making process.
5. School leaders evaluate leadership practices and district alignment in support of district goals throughout the organization.
6. School leaders consider policy changes based upon the impact of school spending on student learning.
7. School leaders evaluate leadership-training programs for future leaders based
upon performance standards, balanced scorecards and stewardship.

8. School leaders develop a balanced scorecard to monitor and measure student performance.

These recommendations resulting from the dissertation process would not exist without my development as an educational scholar. I believe these recommendations support existing research and help fill the existing gaps in research to better predict student performance.

Conclusion

I hope to continue to grow as an educational leader. I have a desire to learn as the Strengths Quest personality assessment inventory indicated learner as one of my top two characteristics. As I focus on continuing to learn, this program has changed my perspective to grow professionally through a process that is researched based and tremendously intellectually challenging. Bardach (2012) provided steps as a guide for policy analysis that provides a decision-making model based upon best practices while also improving my leadership skills.

Maxwell (1993) defined leadership as the willingness of people to follow and this program has improved my leadership skills. If I am effectively leading, I will have followers if I work to become a transformational leader and facilitate the school improvement process to help schools use existing resources more efficiently while working collaboratively with other educational leaders. This leadership will be harmonized through the community of other doctoral candidates. These candidates expanded my network of leadership resources through the interconnected group of professionals that will help me continue growing as an educational leader.
REFERENCES


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Relationship between 2013-2015 Missouri Public School District Student Performance and District Expenditures
Quantitative Research Study
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Statement of Problem

• There is a gap in quantitative research to predict student performance based upon statewide spending per expense category.
Purpose of Research

• Create a predictive model to account for the variance in student performance based upon school district categorical expenditures.
• Identify which expense categories and independent variables have the greatest impact on student performance.

Notes:

• Predictive model will account for the variance in student performance based upon school district categorical expenditures.
• Assist school leaders in financial stewardship by identifying which expense categories and independent variables have the greatest impact on student performance.
Primary Research Question

• Which expense categories and independent variables have the greatest impact on student learning?
Sub-questions

• **Q2**: How does a predictive model account for variance in student performance based upon school district expense categories and independent variables?

• **Q3**: What are the descriptive statistics of the Missouri public school districts participating in the study from 2013-2015?
Sub-questions (continued)

• **Q4:** How do seven independent variables impact student learning through a multiple regression analysis??

• **H4:** Seven independent variables account for 100% of the variance in student performance as measured by APR.

• **Q5:** What is the correlation between each of the seven independent variables and APR academic achievement?
Accountability
Theoretical Framework


• Bonaiuto and Johnson (2008) support the monitoring of student achievement and believe the increase in accountability is the catalyst that drives educational progress.
Conceptual Underpinnings

- Performance Standards (DESE, 2015)
- Financial Stewardship (Sergiovanni, 1992)
- Balanced Scorecards (Kaplan and Norton, 2005)
Design of the Study - Setting

- Creswell (2014), transformative worldview research
- Mertens (2014) transformative worldview research
- Possible political change

Notes:

- According to Creswell (2014), transformative worldview research “contains an action agenda for reform that may change lives of the participants, the institutions in which individuals work or live, and the researcher’s life”.
- Mertens (2014) holds that a transformative worldview research inquiry needs to be intertwined with politics and a political change agenda to confront social oppression at whatever levels it occurs.
- This study may drive a political change through the lives of participants with the creation of a predictive statewide model to optimize Missouri public school district categorical expenditures to best promote K-12 student learning while affording stakeholders new data to make informed, effective decisions.
Participants

- Population - all 519 K-12 school districts in Missouri.
- The 2013-2014 and 2014-2015 school years were used.

Notes:
- The population used for this study was all 519 K-12 school districts in Missouri.
- Two years of data was used for each district from the 2013-2014 and 2014-2015 school years.
- All K-12 districts was included in this study because the independent variables apply to every district and the dependent variable (student achievement) will be taken from APR scores.
Data Collection Tools

• Data available through DESE.
• The researcher worked with DESE staff to obtain the data.
• Sampling will not be necessary.

Notes:
• The data used in the study was available through DESE. The researcher worked with DESE staff to obtain the data and sampling was not necessary because the entire population of K-12 school districts in Missouri was used.
Data Analysis

• Quantitative study (Creswell, 2003).
• Determine the relationship between identified independent variables and student performance.
• Account for the variance in student performance in MO schools.
• Multiple regression analysis
• A regression analysis measures an outcome, in this case a quantitative measure as predicted by one or more independent variables (Field & Gillette, 2010).

Notes:
• The quantitative study took the form of a multiple regression analysis to determine the relationship among the independent variables identified and to account for the variance in student performance.
• According to Field (2009), a regression analysis measures an outcome as predicted by one or more independent variables. A linear multiple regression model will be attempted to consider creating a model to optimize district spending by comparing school district spending by categories.
• To accomplish this goal a multiple regression analysis was used to determine the statistical relationship between and among the independent variables as they are related to the dependent variable.
• A regression analysis measures an outcome, in this case a quantitative measure as predicted by one or more independent variables (Field & Gillette, 2010).
• Quantitative research was the best fit to determine the relationship between and among the independent variables as they are related to the dependent variable. Quantitative research is used when the theory can be tested by measuring the relationship among continuous or scale variables (Creswell, 2003).
Research Methodology

• Limitations
• Assumptions
• Delimitations
Limitations

- Two years of data
- Variance in student performance
- Study was a correlational analysis
- The results are limited by only determining if a relationship exists.

Notes:
- Only the most recent school data was available through the DESE website.
- Contact was made with DESE to obtain the second year of data.
- Variance in student performance was measurable, comparable, and was related to student achievement.
- Study was a correlational analysis and not an experimental design; the results were limited by only determining if a relationship exists.
Assumptions

• The study assumed consistency in the data reported to DESE.
• The study assumed that each school district reported data in the correct accounting code as stated in the Missouri Financial Accounting Manual.
Delimitations

- Public school districts from Missouri were the only state considered. Given the researcher is a Superintendent of a K-12 school district in Missouri; the researcher believes the proper use of school finances has an impact on the success of a district.
Practitioner Setting for the Study

• Northouse (2013) defines leadership as “a process whereby an individual influences a group of individuals to achieve a common goal”. School leaders must determine the right process to achieve the common goal for students to be successful.
History of the Organization

- Missouri State Board of Education
- Missouri Dept of Elem & Second Education
- Missouri public school funding
Missouri State Board of Education

Missouri State Board of Education Major Duties

1. Appointing the Commissioner of Education and setting policies for the Department of Elementary and Secondary Education.
3. Accrediting local school districts. The Board accredits school districts through the “Missouri School Improvement Program,” which includes minimum standards for high school graduation, curriculum, student testing, support services and other areas of school operations.
4. Establishing requirements for the education, testing, assessment, certification and recertification of all public school teachers and administrators.
5. Operating the Missouri School for the Blind (St. Louis), the Missouri School for the Deaf (Fulton), and the statewide system of Missouri Schools for the Severely Disabled.
6. Overseeing federal education programs and the distribution of federal funds to school districts.
7. Establishing regulations for school bus safety and for fiscal management in local school districts.
8. Submitting annual budget recommendations for education to the Missouri Legislature.
9. Administering the state’s Vocational Rehabilitation and Sheltered Workshop programs, which provide services for adult Missouri citizens with disabilities.

Note. Adapted from Missouri Department of Elementary and Secondary Education, Retrieved from https://dese.mo.gov/state-board-education/about-state-board #majorduties.
State Board of Education appointed a Commissioner of Education and the staff of the Department of Elementary and Secondary Education (DESE) in 1947.

H. Pat Wardlaw, Assistant Commissioner conducted a study to update the system of classification to the State Board of Education (Wardlaw, 1948).

Classification focused on the educational resources provided by districts.

Notes:

• In 1947, the State Board of Education appointed a Commissioner of Education and the staff of the Department of Elementary and Secondary Education (DESE) to administer its constitutional and statutory duties (Article IX of the Constitution and Chapter 161, RSMo.).

• H. Pat Wardlaw, Assistant Commissioner for instruction and planning conducted a study to update the system of classification to the State Board of Education (Wardlaw, 1948).

• This classification focused on the educational resources provided by districts along with course offerings and adequate facilities.
Missouri History of School Funding

- Public school funding is derived from federal, state and local levels.
- 90% of all funding comes from state and local levels (Hanushek & Lindseth, 2009).
- Shift in school funding over last century.
  - 1920s, 80% of school revenues came from local sources (Hightower et al., 2010).

Notes:
- The majority of public school funding is derived from federal, state and local levels with state and local funds making up approximately 90% of all funding (Hanushek & Lindseth, 2009).
- The source of public school funding has shifted over the last century. In 1920, local budgets and property taxes were the main source of funding with 80% of the revenue coming from local sources (Hightower et al., 2010). The philosophy behind this funding was the common belief that education was a local responsibility and school boards should make the educational decisions for their local schools.
Background of MO public school district funding

• Federal, state and local level funding
• K-12 funding formula
• Tax levy
State BOE Structure

[Diagram showing the structure of the State Board of Education including offices and divisions]

- State Board of Education
  - Commissioner of Education
    - Deputy Commissioner (Division of Learning Services)
      - Office of Quality Schools
      - Office of Education Quality
      - Office of College & Career Resources
      - Office of Data Systems Management
      - Office of Special Education
      - Office of Early & Extended Learning
      - Office of Adult Learning & Rehabilitation Services
    - Chief of Staff
    - Communications
    - General Counsel & Governmental Affairs
  - Deputy Commissioner (Division of Financial and Administrative Services)
    - Budget
    - School Food Services
    - Human Resources
    - Administrative & Governance Services
    - Accounting & Procurement
MO School Districts BOE & Supt

• Duties of School Districts BOE
  — adopting policies for the school system to provide adequate means for executing them, and to see that they are effectively executed”

• The Superintendent reports directly to the Board of Education.

• Superintendent ensures student learning through partnerships with students, staff, parents and community members while being a good steward of tax dollars by practicing good financial stewardship.

Notes:

• Reeder (1954) describes the duties of the school board as, “adopting policies for the school system to provide adequate means for executing them, and to see that they are effectively executed”.

• The Superintendent of Schools reports directly to the Board of Education. Their primary responsibility is to ensure student learning through partnerships with students, staff, parents and community members while being a good steward of tax dollars by practicing good financial stewardship.
Notes:

- Five components of an organization:
  - strategic apex
  - techno structure
  - operational core
  - supporting staff
  - middle line.

- In educational terms, teachers constitute the operating core (Lunenburg, 2012; Bolman & Deal, 2008, Mintzberg, 1979).
Leadership Analysis

• MO State Board of Education
  – Performance of schools is directly tied to the state board (Herrington & Fowler, 2002).
  – Policies that promote educational quality throughout the state.

Notes:
  – Herrington & Fowler (2002) believes the performance of schools is directly tied to the state board and there is a great variation in the amount of control exerted by the board on the department and on the overall state educational system.
  – The state board is responsible for policies that promote educational quality throughout the state.
DESE – Data Driven Decisions

• DESE encourages data teams to implement data-driven decision-making at the classroom practitioner level.

• Data-driven decision-making is a process that educators use to make decisions on a continuous basis.

• Schools that analyze and utilize data are better able to make decisions about sustaining powerful practices, making midcourse corrections, and discontinuing ineffective practices (DESE, 2015).
Local BOE Roles

• Bryant (2000) states unequivocally that excellence in the classroom begins with excellence in the boardroom (p. iii). Eadie (2005) explored five key behavioral traits of high impact school boards:
  – Concentration on governing above all other board work.
  – Active participation in leading district innovation and strategic change.
  – Meticulous attention to a healthy board-superintendent partnership.
  – Outreach to internal and external community.
  – Development of the capacity to govern.
Supt’s Role in Decision Making

• Waters and Marzano (2006) found a positive relationship between district-level leadership and student achievement when district leaders, including the superintendent, district office staff, and school board members do the right work in the right way (p. 20).
Transformational Leadership

- Inspiring followers to commit to a shared vision and goals for an organization (Bass and Riggio, 2006).
- Facilitates the process of working together (Bittner, 2015).

Notes:

- Bass and Riggio (2006) defined transformational leadership as a style of leadership that involves inspiring followers to commit to a shared vision and goals for an organization.
- Bittner (2015) believes the transformational leader facilitates this process of working together.
Implications for Research

• The process of constructing a predictor statewide model for Missouri public school spending will benefit schools across America.

• It may improve the Missouri public school system by improving student achievement through research-proven school spending.

• By creating a statewide model for school leaders, the researchers can potentially determine the relationship between Missouri public school district APR and Missouri public school district expense categories.

• The researcher will potentially determine which expense categories have the greatest impact on student learning through a multiple regression model.
Scholarly Review

• Conceptual Framework
  – Accountability
Accountability defined

• School accountability, the process of evaluating school performance on the basis of student performance measures is increasingly prevalent around the world (Hanushek & Welch, 2006).
Accountability considerations

• Koedel (2011) believed accountability in itself is not sufficient - competition.
• Hanushek and Welch (2006) believed student performance is increasingly prevalent worldwide.
• Darling-Hammond (2002) believes accountability is not enough – assessments.
• Ravitch (2002) believes schools are spending millions on testing and accountability with little to show for it.
• Kohn (2000) believes children are over tested that are biased and low-income families cannot afford proper test preparation.

Notes:
• Koedel (2011) believed accountability in itself is not sufficient; schools need competitive markets in education. Koedel’s (2011) solution is external interventions that include admin and accountability.
• Hanushek and Welch (2006) believed student performance is increasingly prevalent worldwide.
• Darling-Hammond (2002) believes accountability in itself is not enough. Must have the right design of the assessment and that assessment practices are interwoven with school goals.
• Ravitch (2002) believes an increase in accountability is not producing positive results. Ravitch believes schools are spending millions on testing and accountability with little to show for it.
• Kohn (2000) believes children are over tested that are biased and low-income families cannot afford proper test preparation. Also, Kohn believes tests measure acquisition of facts and skills more than genuine understanding.
Conceptual Underpinnings

- Performance Standards
- Financial Stewardship
- Balanced Scorecards
Performance Standards

• MSIP (Missouri School Improvement Program) was designed to promote excellence in the public schools of Missouri (1997). Excellence based upon assessing education needs, setting goals, developing school improvement plans, monitoring progress and reporting results to the public through the MSIP (2013).
Two Types of Performance Standards

• MSIP 5
• APR (Annual Performance Report)
Performance Standards – MSIP 5

• MSIP 5
  – Outlines the expectations for student achievement - ultimate goal of each student graduating ready for success in college and careers.

Notes

• The fifth version of the Missouri School Improvement Program (MSIP 5), Missouri’s accountability system for reviewing and accrediting public school districts, outlines the expectations for student achievement with the ultimate goal of each student graduating ready for success in college and careers.
Performance Standards - APR

• APR
  – DESE annually evaluates the performance of all public school districts through the APR.
  – Score comprised of scores for each of the MSIP 5 Performance Standards:
    • Academic Achievement
    • Subgroup Achievement
    • High School Readiness (K-8 districts) or College and Career Readiness (K-12 districts)
    • Attendance Rate
    • Graduation Rate (K-12 districts)

Notes:
  – DESE annually evaluates the performance of all public school districts through the APR. This report shows how well each school and school district is meeting Missouri’s education standards under the state’s accountability system, MSIP 5 (DESE, 2014). The reports are used to review and accredit Missouri’s school districts.
  – This overall score is comprised of scores for each of the MSIP 5 Performance Standards: (1) Academic Achievement (2) Subgroup Achievement (3) High School Readiness (K-8 districts) or College and Career Readiness (K-12 districts), (4) Attendance Rate and (5) Graduation Rate (K-12 districts).
Financial Stewardship

• Careful and responsible management of something entrusted to one’s care (Merriam-Webster’s online dictionary, n.d.).

• Attention focused on duties and responsibilities to other persons and more importantly to the school itself (Sergiovanni, 1992).

Notes:

• Merriam-Webster’s dictionary defines financial stewardship as the careful and responsible management of something entrusted to one’s care (Merriam-Webster’s online dictionary, n.d.).

• Sergiovanni (1992) defines school financial stewardship as the rights in the administrator’s position with attention that is focused on duties and responsibilities to other persons and more importantly to the school itself.
Financial Stewardship in Schools

• (Odden & Busch, 1998) 10 percent increase in per-pupil spending each year leads to:
  – .27 more completed years of education
  – 7.25 percent higher wages
  – 3.67 percentage point reduction in the annual incidence of adult poverty, with effects much higher for children from low-income families.

• Some schools spending three times more per pupil on inflation-adjusted bases than they did 40 years ago (Odden & Busch, 1998).
Financial Stewardship Supporting Evidence

- Cullen (2012) determined that as school district instructional expenditures increased, student achievement increased.
- A study of eighth grade students in Illinois found expenditures per student and average teacher salary have modest positive effects in mathematics test scores (Sander, 1999).
- Sander (1999) found “there is supportive evidence on the positive relationship between student achievement and the use of district finances in spending may be associated with significant increases in achievement” (p. 361).
- Ellinger, Hirlinger and Wright (1995) found a significant positive relationship (p<.01) between school funding and student achievement for both 1989-90 and 1990-91 in Oklahoma. They were significantly significant at the .01 level in both years.
Financial Stewardship Opposing Evidence

- According to Neymotin (2010), a study in Kansas found an increase in school district finances from $7,500 per student to $9,400 per student had little effect on student persistence or test scores.
- Brazeale (2014) would argue a weak negative correlation between expenditure per pupil and student achievement.
Financial Stewardship Inconsistencies

- According to Lips, Watkins, and Fleming (2008), there is a lack of evidence on whether education expenditures are related to academic achievement.
- Hanushek (1997) reviewed meta-analysis studies on the effect of per-pupil expenditures on academic achievement and found either no relationship or a relationship that is either weak or inconsistent. However, researchers Hedges and Greenwald “analyzed the same data used by Hanushek and concluded that increasing per-pupil expenditures has a significant positive impact on student achievement” (as cited in Lips et al, p. 4).
Financial Stewardship Recommendations

- Darling-Hammond (2010) - bonuses alone cannot succeed in recruiting and retaining teachers without efforts to create competitive, equitable salaries and working conditions.
- Koedel (2011) - focus on struggling students through interventions such as after-school tutoring or summer school (Betts, Zau, and Koedel, 2010).
- This research supports financial stewardship, as they believe in a fair wage and favorable work place for staff members and targeted use of school finances on struggling students (Ravitch, 2011; Darling-Hammond, 2010; Betts, Zau, and Koedel, 2010).
- Gloudemans (2010) would suggest transforming school funding through student-based budgeting.

Notes:
- Ravitch (2011) supports financial stewardship by advocating paying teachers a fair wage for their work and not “merit pay” based on deeply flawed and unreliable test scores.
- Darling-Hammond (2010) would support this research by recognizing bonuses alone cannot succeed in recruiting and retaining teachers without efforts to create competitive, equitable salaries and working conditions.
- Koedel recognizes costs associates with reducing class sizes and believes the wise use of school resources by recommending a more efficient use of school finances might be to focus on struggling students through interventions such as after-school tutoring or summer school (Betts, Zau, and Koedel, 2010).
- This research supports financial stewardship, as they believe in a fair wage and favorable work place for staff members and targeted use of school finances on struggling students (Ravitch, 2011; Darling-Hammond, 2010; Betts, Zau, and Koedel, 2010).
- Gloudemans (2010) would suggest transforming school funding through student-based budgeting.
Balanced Scorecards

- Kaplan and Norton (2005) convinced traditional measures didn’t allow them to manage effectively.
- Kaplan and Norton (2005) developed a framework to link and align companies at all levels.
Malcolm Baldrige Framework

• The Baldrige framework is a school improvement process involving analyzing data, restructuring climate, and changing the processes that are not contributing to continuous improvement (Petruncola, 2008).

• The Malcolm Baldrige National Quality Award recognizes U.S. organizations in the business, health care, education, and nonprofit sectors for performance excellence.
Malcolm Baldrige National Quality (cont.)

• The Malcolm Baldrige National Quality Award recognizes U.S. organizations in the business, health care, education, and nonprofit sectors for performance excellence.
Baldrige Criteria for Performance Excellence Framework

Organizational Profile: Environment, Relationships, and Challenges

1 Leadership
2 Strategic Planning
3 Customer and Market Focus
4 Measurement, Analysis, and Knowledge Management
5 Human Resource Focus
6 Process Management
7 Results

Source: Baldrige (2006)
MO Public School Finance - Accountability

• The process of evaluating school performance on the basis of student performance (Hanushek & Welch, 2006).
• Flows through performance standards, financial stewardship, and balanced scorecards.
• Missouri’s development of performance standards MSIP 5 and APR measure whether students are failing and schools are being held accountable.
• These performance standards and the increase in accountability (Bonaiuto and Johnson, 2008) drive educational progress.
Quantitative Findings

**Descriptive Statistics:**
- MO K12 schools APR academic achievement mean of .891 for 2013-2015.
- MO K12 schools free and reduced % mean of 56.35 for 2013-2015
- MO K12 schools students w/disabilities % mean of .136 for 2013-2015
- MO K12 schools total instruction % of total budget mean of .593 for 2013-2015

**Correlations:**
- Enrollment and APR – weak negative correlation of .061 for 2013-2015
- Free & Reduced and APR – mild negative correlation of .362 for 2013-2015
- Operating levy and APR – weak positive correlation of .028 for 2013-2015
- Total instruction and APR – weak positive of .159 for 2013-2015
- Total PD and APR – weak negative correlation of .050 for 2013-2015
- Total budget and APR – weak negative correlation of .072 for 2013-2015

**P Value:**
- .00038 - There is at least a 95% chance there is a true relationship between total instruction & APR for 2013-2015
- .00000 – There is at least a 95% chance there is a true relationship between free and reduced & APR for 2013-2015

**Variance:**
- Coefficient of Determination – 7 indep. variables account for 16.1% of the variance in APR
Recommendations

• School leaders analyze district strategies to address FRL population and always use research based data to drive the decision making process.
  — Payne (2005) – relationships in the classrooms
• Further development of predictor model using additional independent variables to better account for the variance in student performance based upon school district categorical expenditures and independent variables.
• School leaders compare and analyze accumulated descriptive statistics of Missouri schools and current spending expenditures.
• School leaders analyze instructional resources within their respective school and always use research based data to drive the decision making process.
  — Waters and Marzano, 2006 – Balanced leadership framework
• School leaders evaluate leadership practices and district alignment in support of district goals throughout the organization.
• School leaders consider policy changes based upon the impact of school spending on student learning.
• School leaders evaluate leadership-training programs for future leaders based upon performance standards, balanced scorecards and stewardship.
• School leaders develop a balanced scorecard to monitor and measure student performance.
VITA

The author of this quantitative study, Larry Linthacum, has lived throughout Missouri most of his life. Larry is a graduate of South Harrison High School in Bethany, MO, and attended the University of Missouri-Columbia and was a four-year letterman on the Missouri football team. He graduated in 1991 with bachelor’s degree in Business Administration.

Larry has a master’s degree and specialist degree from Northwest Missouri State University and is currently completing a Doctorate in Educational Leadership and Policy Analysis from the University of Missouri. Larry serves as the Superintendent of Schools at Jefferson City Public Schools and lives in Jefferson City, MO with his wife and four children. Prior to his role in education, Larry worked for Procter and Gamble Distributing Company and The Reynolds and Reynolds Corporation in sales.

Larry’s mission is to be a difference maker in the lives of those he encounters and in his educational leadership role while he serves the Jefferson City community.