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Allocation Of Educational Resources In Indiana School Districts And The Effect On 10Th Grade ISTEP+

Paul Kaiser
Indiana State University

VITA

Paul A. Kaiser

EDUCATION

1979	Ball State University, Muncie, Indiana Bachelor of Science in Business Education
1980	Ball State University, Muncie, Indiana Masters of Arts in Education
1990	Ball State University, Muncie, Indiana Specialist in Education
2009	Indiana State University, Terre Haute, Indiana Ph.D., Educational Administration

PROFESSIONAL EXPERIENCE

1979	Kokomo-Center, Kokomo, Indiana Business Teacher
1983	Monroe-Gregg School District, Monrovia, Indiana Physical Education and Health Teacher
1984	Eastern School Corporation, Greentown, Indiana Business Teacher
1986	Eastern School Corporation, Greentown, Indiana Assistant Principal
1988	M.S.D. of Decatur Township, Indianapolis, Indiana Assistant Principal
1989	M.S.D. of Decatur Township, Indianapolis, Indiana Principal
2000	Noblesville Schools, Noblesville, Indiana Assistant Superintendent
2005	Monroe-Gregg School District, Monrovia, Indiana Superintendent
2008	Beech Grove City Schools, Beech Grove, Indiana Superintendent

ALLOCATION OF EDUCATIONAL RESOURCES IN INDIANA SCHOOL DISTRICTS AND THE EFFECT ON 10TH GRADE ISTEP+

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Paul Kaiser

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Doctor of Philosophy degree in

Educational Administration

May 2009

Dr Carolyn Milner — Date
Carolyn Milner, Ph.D.
Member

Terry McDaniel April 17, 2009 — Date
Terry McDaniel, Ph.D.
Member

4/16/09 — Date
Robert Boyd, Ed.D.
Chair

4/17/09 — Date
Jay Gatrell, Ph.D.
Dean of the Graduate School

ABSTRACT

The state of Indiana is currently requiring school systems to set financial goals to increase the amount of expenditures toward the classroom. On a national level, there is a push to reach the concept of the 65% solution. This concept expects school districts to spend 65% of their total general fund revenue on instruction. Currently, the Indiana Office of Management and Budget must analyze and report to the State Board, the Governor, and the General Assembly concerning the progress each school corporation has made to improve the ratio of Student Instructional Expenditure to all other expenditures for the previous school year.

Is there a relationship between the free and reduced lunch percentage per district and the achievement of students on the ISTEP+ in Indiana? Is there a relationship between the percentage of student instructional expenditures to all other expenditures and achievement of students on the ISTEP+ in Indiana? Is there a relationship between General Fund expenditures per student and the achievement of students on the ISTEP+ in Indiana? Is there a relationship between the average teacher salary and the achievement of students on the ISTEP+ in Indiana? These questions were answered in this study.

The first set of data compared free and reduced lunch participation for 2006-2007 to the percent of students passing 10^{th} grade 2007-2008 ISTEP+. The second set of data compared percentage of student instructional expenditures to all other expenditures in 2006 compared to the percent of students passing 10^{th} grade 2007-2008 ISTEP+. The

third set of data compared the per pupil expenses for 2006-2007 to the percent of students passing 10th grade 2007-2008 ISTEP+. The fourth and final set of data compared the average teacher salary in each school district to the percent of students passing 10th grade 2007-2008 ISTEP+. These comparisons were made with a correlation process to see where the data clusters were and to measure the relationships. There were eight comparisons made to evaluate whether there is a relationship between the academic achievement of Indiana students and the independent variables through a multiple regression model.

Based on the findings, the following conclusions were drawn. The independent variables in this study did demonstrate a significant difference in language arts and math scores in the multiple regression model. Free and reduced lunch percent does make a significant difference in ISTEP+ language arts and math scores on the 10th grade assessment. Teacher salary also made a significant difference in ISTEP+ math scores on the 10th grade assessment. Instructional expenses to the classroom did not demonstrate a significant difference in ISTEP+ language arts and math scores on the 10th grade assessment. Per pupil expenses did not demonstrate a significant difference in ISTEP+ language arts and math scores on the 10th grade assessment. Teacher salary did not demonstrate a significant difference in ISTEP+ language arts.

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CHAPTER 1

INTRODUCTION

Superintendents throughout the state of Indiana have the challenge of working with limited resources while meeting the academic needs of students. There are accountability standards in No Child Left Behind Act (NCLB) that increase the need to change academic programs with no increase in funding. Student and educational accountability has changed dramatically and continues to do so with the implementation of NCLB. NCLB requires all states to develop and administer student examinations in math, reading, science, and any other subjects the state deems appropriate. States are required to publish the results at the state, district, and school levels. Indiana Public Law 221 has also placed high expectations on Indiana schools with very little funding to implement those programs.

The challenge with funding in Indiana is that the financial resources are not currently fluid and schools are restricted in how they spend the cash balance for each fund. The Rainy Day Fund has added some flexibility. This change allows a district to move appropriations from the seven funds into one account for emergency purposes, but there are still restrictions on how the fund can be expended. Each school district must establish the expenditure pattern in which they will spend the Rainy Day appropriations. The seven major school funding categories in the state of Indiana are 1) General Fund,

2) Debt Service, 3) Pension Bond Debt Service, 4) Capital Projects, 5) Transportation, 6) Bus Replacement, and 7) Special Education Preschool. The current funding process for Debt Service, Pension Bond Debt Service, Capital Projects, Bus Replacement, and Transportation rely predominately on local taxes as the revenue foundation. Effective in 2009, the property tax revenue from these funds is capped at 1.5% and capped in 2010 at 1% of a homeowner's total assessed valuation, which further increases the challenges for public schools to fund education.

The status of educational funding in Indiana has changed during the last 35 years as the state continues to attempt to provide equity in funding for schools throughout the state. The General Fund tuition support is a proportional distribution based on local property tax and funding from the state for the 2008 budget but changed in January of 2009. Effective January 2009, the tuition support was totally distributed by the state of Indiana based on the average daily membership count (ADM) each September and other categorical grants. The annual funding was based on how much revenue a school corporation received the previous year and how many students the corporation has during the current year.

The Indiana General Assembly reorganized the tax system to diminish the reliance on property tax. The reorganization occurred due to taxpayers' frustration with the growth in property taxes. There was a shift of the fiscal responsibility for education to state based taxes for Indiana by the tax modification of freezing the property tax levies and the beginning of property tax controls. Local revenue for the General Fund represented 66% of the total expenses in 1973 and the state revenue was 34%. These percentages are now nearly reversed today with the state contributing nearly 60% of these

costs while local revenues represent approximately 40% (Indiana Fiscal Policy Institute, 2007). This is an example of the ever-changing way in which Indiana finances are evolving and these changes have an effect on decision making as leaders in districts and schools.

Local taxpayers who revolted against the increasing cost of education and local government caused the General Fund tax freeze of 1973. This freeze is still currently in place however the Department of Local Government Finance has the ability to adjust the general fund budget for schools based on the amount of local revenue that can be generated as compared to the revenue that the state can collect through other taxes besides property tax. The current local contribution to education of each tax dollar is $0.54 (Indiana Fiscal Policy Institute, 2007).

There were also equity issues in the amount of education resources that different schools were receiving. Equity in Indiana school funding has been an important issue for policymakers. This resulted in a class action suit in the 1970s based on educational funding and taxation (*Lake Central School Corporation et al. v. State of Indiana et al.*, 1987). There have been gradual changes taking place throughout the years in how school systems are funded with special emphasis on the General Fund, and now another change is on the horizon. According to Governor Daniels (as cited in Costerison, 2008),

> Only 61 cents of every dollar spent in schools make it to the classroom, even under liberal interpretation of what counts. Each 1% of enhancement would mean over $100 million new dollars to hire more teachers, pay them better, make class size smaller, reduce the cost of textbooks, and so on. That's a huge opportunity, and we must seize it. (p. 1)

Data from the Indiana Association of School Business Officials (IASBO) and the Department of Education (DOE) states that over 85% of expenditures for General Fund and Special Education go directly to the classroom. The numbers that Governor Daniels utilized are skewed because the data includes Debt Service, Transportation, Bus Replacement, and Capital Projects in the comparison information. Below is a depiction of the General Fund expenditures by category according to the Indiana Department of Education from January 1, 2006 to December 1, 2006.

Table 1

State of Indiana Expenditure by Objects

General Fund Areas	Percentage of Total
Certified Salaries	53.76%
Non-Certified Salaries	12.28%
Other Salaries	1.47%
Employee Benefits	20.28%
Purchased Services	8.53%
Supplies & Materials	2.30%
Capital Outlay	.35%
Other Objects	1.03%
Totals	100.00%

Table 1 shows that schools are already spending over 85% of available resources on teacher salaries, classified salaries, and employee benefits into the classroom in the state of Indiana. There is very little flexibility in moving more money directly into the

classroom unless additional revenue is provided to schools so they can target the classroom with these resources. These funds are what schools can legally spend in the classroom based on the current funding guidelines.

The Governor based his statement on the data that was developed as a result of HEA 1006 (P.L. 191-2006) and the new Financial Management, Analysis, and Report System (Fin MARS). This legislation directed the Department of Education and the Office of Management and Budget to implement the different aspects of the statute. The agencies or associations that comprised the working group are Department of Education, Office of Management and Budget, State Board of Accounts, Legislative Services Agency, Indiana School Boards Association, Indiana Association of Public School Superintendents, and Indiana Association of School Business Officials (Riley, 2007a).

The statement that only 61% of all educational expenditures make it to the classroom is misleading. The basic expenditure amount (100%) total for this calculation includes the General Fund, Debt Service, Retirement/Severance Bond Fund, Capital Projects Fund, Transportation Fund, School Bus Replacement Fund, Special Education Preschool Fund, Rainy Day Fund, Construction Fund, School Lunch Fund, Levy Excess Fund, and various federal and other grant funds. Simply stated, the base expenditures amounts that make up the total expenditure categories contain monies that cannot legally be utilized for instructional purposes (Riley, 2007b).

Governor Daniels stated that more academic resources need to be placed in the classroom. If more academic resources are spent directly in the classroom will this make a difference in academic achievement? This study reviewed four factors that could affect academic achievement in the classroom: Free and reduced lunch percentages, a

comparison of percentage of student instructional expenditures to all other expenditures, per pupil expenditures, and the amount of average teacher salaries was explored to see if there was a significant relationship.

The first factor in this study was the percentage of free and reduced lunch and its effect on academic achievement. The research on K-12 and post secondary education has stated that socioeconomic factors do make an impact on student achievement and will result in the determination of the success levels for students (Toutkoushian & Michael, 2006). Michelson (1972) discussed that students from low-income families and the socioeconomic status within the school were the most leading and constant factors related to schooling success.

Kansas has increased the per pupil fund levels for students who are receiving free lunch by 10%, along with Texas and Oklahoma providing an additional 20% in funding per pupil for the same group of students. Over half the states in this country provide more revenue to school systems that have a high poverty level or at risk of not being successful (Park, 2004). These resources allow school systems to provide more direct individualized instruction and focus on students from poverty.

The second factor in this study was the ratio of student instructional expenditures to all other expenditures. IC 20-42.5-3-4 requires the State Board of Education to analyze each school corporation's expenditures and compare them under the four categories designed by a Department of Education work group (Riley, 2007a). The four categories are academic achievement, instructional support, overhead and operational, and non-operational.

In 2006, 61% of expenses landed in the classroom according to the Department of Education data. Each district is responsible for writing a policy that addresses how they will increase these percentages on an annual basis. The general fund expenditures for 2006 as a percentage of the total budget were compared to the 2007-2008 ISTEP+ to see if there is a significant relationship in this study.

The third factor to explore was per pupil expenditure in the general fund. The state average in Indiana for 2005-2006 per ADM expenditure was $5,905 (L. C. Rose, personal communication, August 27, 2007). There was a sharp contrast in the ranking from the highest in Dewey Township with expenditure per pupil of $11,910 to a low at Frankton-Lapel with expenditures of $4,711 per pupil (Riley, 2007b).

Indiana has chosen to address equity by increasing the per pupil funding to school districts in the foundation grant by utilizing factors representing parental wealth, education and marital status, along with student proficiency in English (Park, 2004). A number of studies have analyzed the relationship between per pupil expenditures in the general fund and student achievement, with the majority showing no relationship (Hanushek, 1986). You can see from the example of the Dewey Township to Franklin-Lapel that there was still a lack of equity in the state of Indiana.

The final factor to be examined in this study was the average teacher salary for each district. Talbot (1986) found a significant relationship between median family income, size of district, location of district, the operating tax rate, and teacher salaries. Hanushek, Kain, and Rivkin (1999) studied many factors between teacher salaries and quality of teachers. They stated that there is very little evidence showing a relationship between teacher salaries and student achievement. This study reviewed the average

teacher salary's relationship with success on the 10th grade ISTEP+ assessment in the state of Indiana.

If education is to be equitable for everyone, then why do some school corporations have the ability to provide more programs and more resources for student learning and higher salary schedules for teachers? The question that education must answer is where should educational resources be placed and what is the effect on student success?

Statement of the Problem

The state of Indiana currently requires school systems to set financial goals to increase the amount of expenditures toward the classroom. On a national level, there is a push to reach the concept of the 65% solution and now specifically local representatives are discussing this concept. This concept expects school districts to spend 65% of their total general fund revenue on instruction. Beginning with the 2006-2007 school year, the Office of Management and Budget must analyze and report to the State Board, the Governor, and the General Assembly concerning the progress each school corporation has made to improve the ratio of Student Instructional Expenditure to all other expenditures for the previous school year (Riley, 2007a).

According to Indiana Governor Daniels (as cited in Costerison, 2008), the state average for expenditure on instruction is 61%. Costerison indicates that 85% of the available dollars for the General Fund and Special Education are spent at the classroom level. Since teachers' salaries are the largest budget item in school districts, it is important that administrators, boards of education, and the local teacher associations understand factors that impact salary schedules. Teacher salaries are a method of

reflecting the amount of educational resources that districts receive to provide programs for student success. It is important for educational leaders to understand salary schedules and how allocation of resources is determined. Superintendents must know the factors that affect the general fund revenue formula so that informed decisions can be made about short-term and long-term academic programs.

This study reviewed the concept of the 65% solution and examined the effects on the 10^{th} grade ISTEP+. The parts of the problem reviewed were (a) identifying and tabulating expenditures from all funds for all school districts in the Indiana; (b) identifying districts that were expending 65% of their general fund budget on instruction in Indiana; (c) determining the factors that affect the 65% solution; and (d) determining the levels of inequity in school funding that exist in Indiana.

The study examined the data for the percentage of free and reduced lunch to see if there was a relationship between the percentage per school and the ISTEP +. In addition, the study examined the relationship between per pupil expenditure and the average teacher salary because of their connection to the general fund.

Purpose of Study

The purpose of this study was to examine the relationship between the general fund instructional expenditures in the state of Indiana and the achievement on the Indiana Statewide Test for Educational Progress (ISTEP+) in high schools. If the goal of educators is to improve student achievement, then the ratio of instructional expenditures and student achievement should be aligned for student success. In districts that spend 65% of their educational resources on instruction, students should score higher on the

10^{th} grade ISTEP+ for language arts and math than students in those districts who do not expend 65% of their resources if there is a true relationship between the data.

Research Questions

1. Is there a relationship between the free and reduced lunch percentage per district and the achievement of students on the ISTEP+ in Indiana?
2. Is there a relationship between the percentage of student instructional expenditures to all other expenditures and achievement of students on the ISTEP+ in Indiana?
3. Is there a relationship between General Fund expenditures per student and the achievement of students on the ISTEP+ in Indiana?
4. Is there a relationship between the average teacher salary and the achievement of students on the ISTEP+ in Indiana?

Null Hypotheses for Research

H_01_a: There is no significant relationship in the percentage of free and reduced lunch for each district and the results on the 10^{th} grade ISTEP+ language arts.

H_01_b: There is no significant relationship in the percentage of free and reduced lunch for each district and the results on the 10^{th} grade ISTEP+ math.

H_02_a: There is no significant relationship in the amount of academic expenditure percentage to the classroom compared to the total expenses and the results on the 10^{th} grade ISTEP+ language arts

H_02_b: There is no significant relationship in the amount of academic expenditure percentage to the classroom compared to the total expenses and the results on the 10^{th} grade ISTEP+ math.

H_03_a: There is no significant relationship in the per pupil expenditure and the results on the 10th grade ISTEP+ language arts.

H_03_b: There is no significant relationship in the per pupil expenditure and the results on the 10th grade ISTEP+ math.

H_04_a: There is no significant relationship in the average teacher salary expense and the results on the 10th grade ISTEP+ language arts.

H_04_b: There is no significant relationship in the average teacher salary expense and the results on the 10th grade ISTEP+ math.

Significance of Study

This study examined the relationship between the allocation of financial resources and student achievement. If the allocation of financial resources has a significant effect on academic achievement, then this study would communicate the importance of equal allocation of resources from school district to school district. In addition, this study may bring focus to the importance of the 65% solution in allocation of resources at all academic levels. This study might also encourage elected officials to appropriate more state funds to the instructional budget for each school district to assist in reaching academic standards if there is a relationship between instructional expenses and academic achievement.

Definition of Terms

To provide consistency and assist with understanding of this study, the following terms and definitions apply to this research:

Assessed Value (AV) is the total dollar value assigned to all real property and improvements plus personal property subject to taxation.

Average Daily Membership (ADM) is the number of students with legal settlement in the school corporation who are enrolled and attending school in the school corporation including students with legal settlement in another corporation where the parents are paying for the cost of education (cash transfer).

Average Teacher Salary is the total teacher salary for a school district divided by the number of teachers in the district.

Base Levy, *Frozen Levy*, and *Maximum Normal Tax Levy (MNTL)* is the dollar amount of property taxes collected in 1973 with provisions for adjustments, except as provided by adjustments, this levy is the ceiling on the revenue available from the property tax.

Beginning salary is the salary paid to teachers with no experience on the bachelor and master scales.

Bus Replacement Fund is the revenue and expenses for purchases of school buses.

Capital Projects Fund is the allocation for land acquisition, professional services, utilities, technology, construction, rent of buildings, purchase of equipment, maintenance of equipment, and upkeep of sports facilities.

Contiguous School Districts is a school district within Indiana that physically borders each other. For the purpose of this study, this is considered to be synonymous with *Neighborhood School District.*

Debt Service is the expenditures from this fund may be used to make bond or lease rental payments.

Free and Reduced Lunch Count is the percentage of students receiving free or reduced textbooks based on their social economic status.

General Fund is the expenditures from this fund may be made for items associated with the daily operation of a school corporation. This includes salaries of teachers, administrators, support staff, fringe benefits, supplies, heat, lights, maintenance and other day-to-day operation expenses.

Master Contract is a legal written agreement describing salary and salary and fringe benefits between a school district board of school trustees and the school district certified teaching employees.

Maximum Salary is the salary paid to teachers with the maximum amount of experience as determined by the master contract and nothing supplemental.

Per Pupil Expenditure is the total expenditures from the general fund divided by the number of student ADM of each district.

Special Education Preschool Fund is the expenditures for special education preschool pre kindergarten students.

State Tuition Support is the total amount of revenue a school district receives from the Indiana Department of Education funding formula.

Transportation Fund is the revenue and expenses for the payment of operating costs associated with the transportation of students to school (Department of Local Government Finance, Annual Budget Workshop material, 2007).

Delimitations of Study

1. This study was limited to the financial expenditures for each school corporation in the state of Indiana.
2. Only public school corporations within the geographical boundaries of Indiana were studied.

3. Data from charter schools were not to be studied because there was no assessed valuation for these schools and their financial resources are actually transferred from other districts. There was a loss of revenue from public schools to charter school.
4. Data for this study was limited to the free and reduced lunch data for 2006-2007, comparing percentage of student instructional expenditures to all other expenditures for 2006, per pupil expenditure for 2006-2007, average teacher salary for 2006-2007, and 10^{th} Grade ISTEP + scores for 2007-2008 as provided by the Department of Education.
5. Two schools were not included in this study because they did not have high school buildings.

Limitations of Study

1. Many variables could be identified to affect student achievement; therefore, overlooking some variables could result in statistical error.
2. Generalizability to the nation may be limited since the study focuses on the experience of one state.
3. The findings of a quantitative study such as this do not explain why a particular relationship exists nor does a finding infer causation

Assumptions

Employee benefits in total for all employees in school corporations are accounted for under expenditure account 26490. Selected employee benefit expenditure can be allocated to a specific expenditure category such as official bonds, Teacher Retirement Fund plus other expenses, and other employee benefit expenditures cannot be directly

allocated. For the purpose of this review, Public Employees Retirement Fund (PERF), Social Security, workers compensation, group insurance, unemployment compensation, and severance expenditures have been allocated to each of the respective categories above as a percentage of salary paid to employees in each of the individual expenditure categories (academic achievement, instructional support, overhead and operating, and non-operational), as applicable (Riley, 2007b).

Each school corporation establishes its own employee benefits by either employee contract or school board policy. Prorating on the basis of salaries is an acceptable alternative that has been used by the United States Department of Education's National Center for Education Statistics according to Riley. This study examined and provided insight into whether spending additional funds directly into the classroom had a positive impact on the academic achievement of students in the state of Indiana.

Summary and Organization of Study

This research is divided into five chapters. Chapter 1 contained the introduction, problem statement, and purpose of study, significance of the study, research questions, definitions, limitations, delimitations, and organization of the study. Chapter 2 contains a review of the literature, which discusses the 65% solution, teacher salaries, financial expenditures of school districts, free lunch, per pupil expenditures, and the factors that affect academic achievement. Chapter 3 contains the research design and discusses the process for gathering the data for the study and the methods for statistical evaluation of this topic. Chapter 4 contains the statistical findings of the data in the study. Chapter 5 contains the conclusions and recommendations for further study.

CHAPTER 2

LITERATURE REVIEW

The purpose of this study was to examine the school financial factors that affect and influence academic success as measured on the Indiana Statewide Test of Educational Progress (ISTEP+) for 10th graders in Indiana. The research question of this study inquired if there was a relationship between the amount of allocation toward instruction and student achievement as measured by the 10th grade ISTEP+. A comparison of each school district percentage of expenditures for 2006 in the student academic achievement category was correlated with the fall of 2007-2008 10th grade ISTEP+ scores. This study explored in depth, the factors that determine the percentage basis of instructional expenditures expectations as determined through the Indiana Department of Education data.

Salaries and benefits are the largest percentage of the general fund and the student achievement category, thus a study of the different factors that affect salary was a major part of this literature study (Riley, 2007b). There were several major factors that influence the wealth of the district and their ability to pay salaries, benefits, and other educational expenses to meet the academic needs of students. These factors have been researched to determine their effect on the salary schedules for school districts throughout the United States. In addition, the literature search utilized key words to obtain

information. These key words were school budgets, school finance, school budgeting, financial resources, school expenditures, compensation, tax base, mean income, socioeconomic status, 65% base of educational expenditures, academic achievement, standardized test, instructional expenses, per pupil expenditures, and assessed valuation.

The 65% Solution

First Class Education

There is a national trend that has also become part of the educational agenda in the state of Indiana that school systems should spend 65% of their total general fund budget on instruction (Costerison, 2008). There is a nationwide focus by a group called First Class Education (FCE), founded by Patrick Byrne, the CEO of Overstock.com to push for a 65% solution of resources to the classroom. George Will, who is a national columnist, supports the 65% solution and started the program's name of 65% solution. An Arizona based Republican consultant named Tim Mooney, currently leads the FCE organization (National Education Association [NEA], 2006). Mooney used $250,000 from Byrne to establish FCE. In a memo that Mooney wrote, he argues that the 65% solution gives Republicans a feasible answer to classroom improvement without the need to call for a tax increase. Mooney (as cited in Bracey, 2006) listed the following tangible political benefits of the 65% solution:

1. Splitting the education unions.
2. Softening up targeted segments of voters to vouchers.
3. Defining the debate over school funding in terms of taxes and government spending.

4. Increasing voter turnout among the conservative base through use of the initiative process. (pp. 10-11)

According to Bracey (2006), Mooney and Byrne developed their meaning for classroom categories from the National Center for Education Statistics [NCES] (2003) publication, *Financial Accounting for Local and State School Systems*. According to this study there is no empirical data to support the contention that the proposed shift to the 65% solution would improve school performance, Therefore, Bracey recommended the following concepts should be consider by communities and schools that are fighting the 65% solution:

1. Schools and school corporations should examine the research literature to determine what practices have been empirically linked to changes in those outcomes, then decide what outcomes they would consider improved performance, and modify and focus the funds to attain the improvements;
2. Allocation of new funds or reallocation of existing funds occurs at the school level with district supervision. (p. 20-21)

Byrne (as cited in FCE, 2008) originated the solution when he reviewed the data from the NCES and found that five states with the highest student standardized test scores (Massachusetts, New Hampshire, Vermont, Minnesota, and Connecticut) spend an average 64.1% in the classroom. The five worst scoring states (Louisiana, Alabama, Mississippi, New Mexico, and the District of Columbia) spend on average 59.5% in the classroom. Additionally, Georgia chooses to spend 63 cents from every dollar in the classroom. This expenditure ranked them 13th in the country.

The only test that permits state-by-state comparison is the National Assessment of Education Progress (NAEP). According to the NCES' June 2004 report, the four best performing states have incredible differences in the amount they spend per child on education. Utah, Tennessee, New York, and Maine exceed the 65% goal which is down from seven states two years earlier. Utah has the smallest amount spent in the classroom and New York the highest expenditure which demonstrates the diversity in the spending patterns among the states (Bracey, 2006).

According to Bracey (2006), FCE focuses their energy on inputs where the current research supports education placing emphasis on outputs. Bracey feels that this approach is an old model of schooling. The best schools, according to FCE, are those who allocate the larger bulk of resources and not schools that are actually achieving. The National Center for Education Statistics has reported recent increases in K-12 education funding at four times the rate of inflation. In addition, the percentage of dollars reaching the classrooms has declined for four straight years. On a national average, only 61.3% is now reaching the classrooms (FCE, 2008).

When adjusting for demographic differences, public schools outperform private schools according to a recent study. Private schools typically have better educated families along with fewer minorities, fewer special education students, fewer English Language Learners, fewer low-income students, and more students from affluent families (Lubienski & Lubineski, 2006).

FCE (2008) has the goal to pass laws or mandates in all 50 states by that would necessitate school corporations to spend at least 65% of their operating budgets on classroom instruction. FCE sees three potential benefits to this idea which includes

"increasing money spent in the classroom without raising taxes, reducing wasteful spending on administrative cost, and improving student outcomes by focusing money to the classroom" (p. 1).

According to FCE (2008), the average amount of each dollar expended for education in the United States that is delivered directly to the classroom is 61.7%. The FCE stated that by implementing the 65% solution there will be an additional hundreds of millions of dollars per state spent directly into the classroom without raising overall expenditures or new taxes. FCE has a philosophical foundation based on the concept to "make public schools more effective and efficient by requiring at least 65% of every K-12 education dollars be spent on in the classroom instruction as defined by the National Center for Educational Statistics" (p. 1). FCE has been pushing a proposal that

Table 2

First Class Education Classification of Inputs

In the Classroom	Outside the Classroom
Classroom Teachers and Personnel	Administration
General Instructional Supplies	Plant Operations and Maintenance
Instructional Aides	Food Service
Coaches Salaries	Instructional Support-Media Center Staff
Field Trips, Athletics, Music, and Art	Transportation
Tuition Paid to Out-of-State Districts	Teacher Training and Curriculum
	Student Support-Nurses and Counselors

Source: First Class Education (2008).

would require school districts to increase their spending on instruction by 2% per year until they reach 65%. FCE is utilizing the classification of instructional expenses based on this philosophy as shown in Table 2.

There are currently three states that are implementing the 65% solution or a derivation thereof; in Texas by executive order, and by legislation passed in Georgia. The FCE group estimates that over $14 billion a year will be shifted to the classroom (Phillips, 2006). The Kansas Governor and Legislatures adopted the 65% solution as a public policy goal. Governor Perry from Texas issued an Executive Order calling on the Commission of Education to require a new financial accountability system that incorporates the 65% solution within the structure.

The Texas Commissioner of Education decided that school library costs would be included as classroom expenditures within their classification. Georgia is the only state that has in reality adopted the 65% solution into law. Georgia law required that every local school district spend a minimum of 65% of its total operating outputs on direct classroom expenditures beginning with the 2008-2009 school year. Georgia school districts were allowed to ask for a waiver from the 65% solution (New York State Union of Teachers, 2006).

The History of Different States

Colorado

Lt. Governor Norton and Congressmen Beauprez and Holtzman were campaign Co-Chairs for the FCE. According to the NCES, Colorado ranks 48th nationally at 57.3% in educational expenditures that reach the classroom. The FCE filed over 105,000 signatures to have the solution placed on the general election (FCE, 2005).

The Bell Policy Center opposed Amendment 39 in the state of Colorado because there is no research that supports spending more money by the narrow, focused definition of FCE. The Colorado Amendment 39 would amend the state constitution to necessitate school districts to spend at least 65% of their operating funds on classroom instruction. Referendum J would then change state statutes to call for school districts to expend at least 65% of their operating funds on activities directly affecting student achievement and include instructional classroom activities and other related expenditures (Waterous, 2006). The study for the state of Colorado demonstrated no noticeable range in the performance amount districts at any given spending level. There was no statistically significant relationship between the percentage of spending on instruction and student performance (School Matters, 2006).

Oregon

Governor Owens added his signature to the petition for a ballot initiative so that each school district would spend at least 65% of their annual operating budgets in the classroom. FCE (2005) estimates that increasing public school spending will place an additional $485 million annually to expenses such as textbooks, classroom computers, and basic supplies.

The 65% solution was on the ballot in Oregon in 2008 and is referred to as IP 24. The Oregon Center for Public Policy (OCPP) called for a school spending initiative that has been promoted by the Representatives of the Oregon House as inaccurate because it would not improve student performance. The current expenditure toward classroom instruction is 61% in Oregon with the national average at 63% for the 2003-2004 school year. Leachman (as cited in Salem News, 2006) authored the study for OCPP and stated

that the 65% solution is 100% phony. Leachman stated that schools that were spending more of their budget on instruction did not increase the number of students testing proficient in English/math as defined by IP 24. The OCPP states that IP 24 does not count support services as part of the definition of instruction. Lights, heat, and plumbing repairs make up 8% of all school spending in Oregon and are the critical components of the efficiency of the schools. Two percent of the budget is expended in the area of staff development for teachers and students. Another 7% goes toward attendance oversight, guidance counseling, and psychological services (Leachman, 2006).

Georgia

The Georgia House and Senate approved the 65% solution as a key part of Governor Perdue's education plan. The 65% solution would be implemented by 2008. State Senator Chance introduced the bill that requires all Georgia school systems that receive state funding to contribute 65% of their total budgets to classroom instruction. This plan would include spending money on teacher aids, computers, textbooks, and teachers, but not maintenance, food service, or administrative salaries (Gutierrez, 2006).

Oklahoma

The 65% solution was introduced in Oklahoma and was to be placed on the ballot. Sullivan, an Oklahoma oilman, was leading the charge to accomplish the 65% initiative. He was also a Republican candidate for governor. Oklahoma is ranked 46th in the nation based on the percentage of education dollars that reaches the classroom according to the NCES. Raising Oklahoma from 58% to 65% would increase the per pupil expenditure by $423 and provide $270 million into the classroom (McNutt, 2005).

Patrons collected over 165,000 signatures needed for Initiative Petition 384, also known as State Question 731, to be placed on the ballot and the Secretary of State then certified those signatures. The Oklahoma State School Board Association filed a lawsuit claiming the petition failed to meet constitutional requirements. The Oklahoma Supreme Court ruled that the petition did not contain adequate information on the document itself. The State Superintendent of Public Instruction would be given the power to grant waivers to certain school districts that could not meet the 65% requirement and this was not mentioned in the petition. The omission effectively failed to alert potential patrons to the effect the anticipated statute would have on the balance of power between boards and the state along with the local school districts (Francis-Smith, 2007).

Texas

Texas has over 8,000 public schools that serve 4 million students each year and has implemented the 65% solution. The Texas Education Agency (TEA) has incorporated two indicators of instructional share into its Financial Integrity Rating System of Texas (School FIRST). School FIRST is Texas' primary tool for managerial accountability among school districts that assigns ratings from Substandard to Superior Achievement by utilizing an array of fiscal indicators. In 2005-2006, 91.2% of Texas school districts were rated Superior while 6.1% were rated above Standard. In the same period of time, 0.3% of schools were rated Standard while 2.2 % were rated substandard (TEA, 2007).

One School FIRST indicator is a measure of instructional share that is based on the NCES definition. This indicator began to be phased in over three years in 2007-2008. After it is fully phased in, districts must spend at least 65% of their current operating expenditures on instruction, extracurricular activities or tuition payments to alternative

schools. Another School FIRST indicator broadens the NCES definition to include librarians, nurses, and counselors. School districts must spend at least 65% of their current operating expenditures on classroom instruction beginning with the 2007-2008 school year (Taylor, 2004).

The summary of the data from the Taylor (2004) study suggests that Texas schools could benefit from a policy that encourages school districts to use their resources more efficiently. In addition, Taylor found no evidence that inducing schools to spend a greater share of their budgets on instruction will lead to increased efficiency. Most urban schools are choosing an efficient mix of instructional and non-instructional labor, and schools are likely to be devoting too many personnel resources to the classroom as too few. Finally, the Taylor analysis suggests that schools spending larger shares of their budget on instruction are systematically less efficient than other schools.

Kansas

In 2005, Kansas elected representatives who approved a policy goal of spending 65% of educational dollars on classroom instruction using the federal government's budget definition. Kansas school districts reported spending about 60% of their operating budget on instruction in 2004, and this resulted in a ranking of 40th in the country. Four of the ten states that spend the highest percentage on instruction also rank in the top ten on NAEP reading and math tests. Four of the ten states, including Kansas, are spending the lowest percentage on instruction but also rank in the top ten in NAEP performance (Tallman, 2006).

The major functions of public schools in Kansas and corresponding budget categories for school district expenditures based on the State Board regulations for

Quality Performance Accreditation that went into effect in July of 2005 are reflected in Table 3.

Table 3

Kansas Percentage Expenditures

Function	Current expenditures %
Instruction: Teaching Students	60%
Instructional Support: Helping Teachers	5%
Student Support: Helping Students Learn	4%
Operations and Maintenance: Safe Schools	10%
Transportation: Getting to School and Home	4%
School Administration: Building Leadership	4%
General Administration: District Leadership	3%
Other Support: Accountability and Outreach	2%
Food Service: Student Meals	5%
Facilities and Debt Services	Not included

Source: Tallman (2007).

The Stance of Other Organizations

Taxpayer Bill of Rights (TABOR)

The Taxpayer Bill of Rights (TABOR) organization tried to amend state constitutions in Oregon, Nebraska, and Maine that would have directly tied revenue to a formula based on population growth and the consumer price index. Maine voters defeated TABOR by 55% to 45%. Nebraska voters defeated TABOR by 71% to 29%. Oregon voters defeated TABOR by 71% to 29% (NEA, 2006).

One of the major challenges for TABOR issues in these elections was a massive signature fraud resulting from TABOR backer's practice of hiring out-of-state signature harvesters. The Montana Supreme Court stated the following decision:

> The District Court ultimately decided and the Supreme Court affirmed that these three unlawful practices of certification of signature that were not signed in the presence of the affidavit, false addresses, and bait and switch tactics that resulted in legally defective certification affidavits and constituted a pervasive and general pattern and practice of fraud and conscious circumvention of procedural safeguards, in violation of state laws relating to qualification of initiative on the ballot. (NEA, 2006, p. 1)

National Parent Teacher Association

Other organizations have objected to the 65% solution throughout the country. The National Parent Teacher Association (National PTA) Public Policy's (2006) major objective is that every child must be provided with a well-rounded, high quality education and schools must place priority on student performance and achievement. To meet this outcome, The National PTA believes sufficient funding must be provided and schools must be held responsible for ensuring that all children must be successful.

The National PTA Public Policy staff has written a guide for state leaders based on the National PTAs existing positions and resolutions in addition to the research on the merits of the 65% solution. The National PTA believes that the 65% solution is flawed for these three reasons:

1. The initiative gives the appearance of increasing classroom spending but does not, in fact, increase funding for public education at all.

2. A one size-fits-all model is unworkable in a country that has 51 state education systems including the District of Columbia and over 14,000 school districts that are unique.
3. Independent research shows that student performance does not noticeably or consistently increase at 65% or any other minimum percentage spent on instruction. (National PTA, 2006, p. 2)

The National PTA staff stresses these six points related to the 65% solution that should be considered when fighting against this concept:

1. The 65% solution is a shell game where no child wins.
2. Critical services are not considered in the classroom expenses but athletic uniforms are part of the category.
3. One system does not work for all schools.
4. There is no connection between a minimum percentage of spending on instruction and student achievement.
5. 65% is not a magic number.
6. Greater financial resources are needed for schools. (National PTA, pp. 5-6)

The American Association of School Administrators

The American Association of School Administrators (AASA) has written many articles in regard to the 65% solution. The organization summarized key talking points for schools, boards, and administrators to remember when discussing the topic:

1. Leadership improves achievement: Increasingly, research indicates that district leadership is needed to support improvement at all levels.

2. School leaders know that how they spend money matters: The 65% proposal imposes a one-size-fits-all mandate on school districts.
3. Spending Mandates Don't Work: The bulk of a district's budget is spent on personnel, so the non-personnel budget is very small and difficult to change.
4. All district staff contributes to the improvement of student achievement: This mandate hurts children by forcing school districts to lay off librarians, counselors, nurses, bus drivers, food service workers, custodians, and other staff.
5. These mandates threaten the ability of public schools to provide services for our most vulnerable children: The limiting definition of instruction used by the NCES fails to include educational services aimed at students with disabilities and students who are learning to speak English, such as speech therapy, therapies and devices for hearing, health care and nursing services.
6. The 65% rule is politically, not educationally, motivated: The people behind this mandate have a long history of trying to undermine public education. (AASA, 2007, p. 1)

"Politicians love simple solutions. But they shouldn't be allowed to pass simple solutions until they understand the complex problems" (Delisio, 2007, p. 1). "It's a simple solution to a complex problem. Our unofficial position is, we will see them 65% and raise them 80%" according to Houston (as cited in Delisio, p. 2).

School Matters

In November 2005, School Matters reported that student performance does not noticeably or consistently increase at 65%. School Matters concluded that there is not a

significant relationship between spending the minimum percentage of a district's budget on instruction and the reading and math proficiency rates. School Matters found that some of the lowest performing districts spend more than 65% and some of the highest performing districts spend less than 65%. School Matters has not taken a position either in favor or against the 65% solution (School Matters, 2006).

The first study by School Matters reviewed the relationship between student performance and school districts spending on instruction. They focused on nine states that were considering the 65% solution. Then, they conducted additional research on 25 states for the requested data (School Matters, 2006). Their study showed no relationship between student proficiency rates on state reading and math tests and the district's instructional spending allocation. The data in the study suggest that mandating a minimum instructional spending allocation applied evenly across all districts will not increase academic achievement. The range in district's academic performance at every spending allocation suggests that how districts spend their instructional dollars may have as much impact on student achievement as the percentage of dollars spent in the classroom (School Matters).

The School Matters (2006) study further states that there is no relationship between spending more than 65% on instruction and students who perform at a high level. Additionally, there is no relationship between spending any minimum percentage on instruction and student achievement. School Matters found that there are no differences in total district spending in which any percentage figure will result in different dollar amounts spent by each district.

Many states are arguing over the definition of the term classroom instruction and what are district operating budgets. Classroom instruction is defined by NCES data categories and has the advantage of being easy to put into practice because all districts already must report their fiscal data to the federal government. The problem is that the NCES has no category for classroom instruction. A compromise between FCE and the opponents of their organization could utilize the following formula for evaluating expenditures toward the classroom according to School Matters (Figure 1).

$$\text{\% spent on Classroom Instruction} = \frac{\text{Instruction Expenditures + Instructional Staff Support Services}}{\text{Core Spending}} \times 100$$

Figure 1. School Matters (2006) expenditure formula for allocating instructional expenses

The American Library Association

The American Library Association (ALA) adopted a resolution calling on President Bush, Secretary of Education Spellings, NCES Commissioner Schneider, and the chief state school officers to redefine librarians as providers of in-class instruction. NCES category instruction covers more than the classroom. Instruction includes any activity dealing with the contact between teachers and students. Teaching may be provided for students in a school classroom, in another site such as home or hospital, and in other learning places such as those involving curricular events. These may be provided through some other approved means, such as computer, radio, television, Internet, multimedia, and communication that is available within or outside the classroom or in other settings (School Library Journal, 2006).

Nationally, public opinion in 2006 supported the school reform measure. An Interactive Poll by the Harris organization showed that 70% to 80% of all demographic groups backed the 65% solution and the politicians who were supporting this endeavor. Although nationwide statistics demonstrate how a correlation between the percentages of money spent statewide and standardized test scores that correlation is not clear at the local district level (School Library Journal, 2006).

The People for the American Way

The People for the American Way are a staunch defender of public education. They believe that public education, like an independent judiciary and fair elections, is an essential component of the American democracy. They feel that public schools have served our nation well, yet many schools in poor communities struggle to provide a quality education to their students. The People for the American Way stand for the following concepts and now call this movement the 65% Deception:

1. The 65% deception used a decades old formula that counts athletic equipment but not teacher training, libraries, nurses, or school lunches as classroom expenses. It is a definition that makes no sense, and will not do anything to help students learn.
2. The 65% deception does not include any additional funding for needy school districts. Schools that are already struggling would be forced to cut funds from vital services.
3. One-size-fits-all schemes like the 65% deception undermine local control of schools and fail to account for the individual needs of school districts.

4. 65% is a number that comes from nowhere. Research shows no relationship between student performance and any percentage of spending on classroom expenses. (People for the American Way, 2006, p. 2)

Three states that currently have legislation pending based on the 65% solution are South Carolina, South Dakota, and Vermont. Table 4 reflects the states that have rejected the 65% solution in some shape or form.

The major factors affecting the financial basis of school districts that will be explored in this study are 1) percent of expenditure by category, 2) district wealth, 3) cost of living, 4) geography of school district, 5) demographics of school district (Free and Reduced Lunch Percentage), 6) collective bargaining, 7) academic achievement factors, 8) teacher salary, and 9) per pupil expenditure. Three of these, percent of expenditure by category, district wealth, and teacher salaries will be explored in the sections that follow.

School District Finance

Percent of Expenditure by Category

The Indiana Department of Education has gathered information based on the 2005 and 2006 expenditures and has classified expenses per the guidelines recently established by the General Assembly. P.L. 191-2006 requires the State Board of Education to analyze each school corporation's expenditures under four categories. The categories are student academic achievement expenditures, student instructional support expenditures, overhead and operational expenditures, and nonoperational expenditures. Beginning with the 2006-2007 school year, the Office of Management and Budget must analyze and report to the State Board of Education, the Governor, and the General Assembly the progress each

school corporation has made to improve the ratio of Student Instructional Expenditures to all other expenditures for the previous school year (Riley, 2007a).

Table 4

States Who Have Defeated the 65% Solution

States Defeated	Rationale
Arizona	Petition to qualify proposal was shut down due to insufficient funding.
Colorado	Two plans were presented to voters and both were rejected.
Florida	A 65% proposal supported by the governor was rejected by the legislature.
Illinois	Proposal was rejected by the legislature.
Louisiana	A study was conducted and presented and then rejected by legislature
Minnesota	Proposal rejected by the legislature.
Mississippi	Proposal rejected by the legislature.
Oklahoma	Challenged by school board association being placed on the ballot and the Oklahoma Supreme Court ruled that the petitions were invalid.
Oregon	The petition drive to qualify the issue as a ballot measure was shut down by its backers.
Tennessee	Proposal rejected by the legislature.
Utah	Proposal rejected by the legislature.
Virginia	Proposal rejected by the legislature.
Washington	Petition drive to qualify proposal for statewide ballot was shut down to insufficient funding.
Wisconsin	Proposal rejected by the legislature.

Source: National Education Association (2008).

The state of Indiana has classified financial data into four separate categories for the purpose of evaluating the percentage of expenditures compared to allocating instructional resources to the classroom. The first category, Student Academic Achievement, includes those direct expenditures related to instruction, providing instruction, instructional materials, instructional supervision, whether within the school corporation or through a cooperative arrangement with another governmental unit or charter. Activities dealing directly with the teaching of pupils, including teachers (salaries and related fringe benefits), teacher aides, principals, educational media services, textbooks, etc., are included. The second category, Student Instructional Support, includes expenditures for those services that provide administrative, technical, personnel, and logistical support to facilitate and enhance instruction of pupils. Pupil support services included in these expenditures are attendance, social work, guidance, health, psychology, speech pathology, audiology, instructional and curriculum development, governing body direction, and executive administration activities. The third category, Overhead and Operational, includes expenditures for the operation of the school corporation. Areas included are fiscal services (budgeting, payroll, and accounting), operation and maintenance of facilities, security, pupil transportation, food services, purchasing, and technology. The fourth category, Non-operational, includes expenditures that are not instructional or operational. Expenditures included in this category are facilities acquisition and construction, purchase of non-instructional equipment, and debt service obligations. Student Instructional Expenditures are defined as Student Academic

Achievement plus Student Instructional Support. The committee of professionals that were assigned by the Indiana Department of Education determined these definitions and formula for expenditures.

The state of Indiana expenditures for 2005 and 2006 are analyzed by property tax funds, other local funds, dedicated state funds, dedicated federal funds, and excluded funds. The review of the 2005 and 2006 expenditures are reflected in Table 5.

Table 5

FY 2005-06 Expenditure Categories for Indiana School Corporations

Area	Year	Property Tax	Other Local	Dedicated State	Dedicated Federal	Total Funds
Academic	2006	4,824,845,402	505,939,373	35,007,300	402,288,994	5,768,081,069
Achievement	2005	4,724,663,610	665,604,684	40,092,355	384,832,581	5,815,193,231
Instructional	2006	508,719,997	41,814,532	22,879,027	103,924,244	677,377,779
Support	2005	489,681,168	52,497,282	20,823,085	101,242,900	664,244,435
Overhead &	2006	1,744,050,782	495,777,567	8,600,628	18,719,076	2,267,148,595
Operational	2005	1,637,239,773	484,530,413	12,234,794	37,228,631	2,171,233,350
Non	2006	1,522,502,725	372,303,179	13,582,239	5,063,076	1,913,451,219
Operational	2005	1,417,511,127	347,277,841	19,534,794	7,818,412	1,792,142,174
Total	2006	8,600,118,886	1,415,834,652	80,069,194	529,995,930	10,626,018,662
Expenditures	2005	8,269,095,677	1,549,910,220	92,684,769	531,122,523	10,442,813,189
Instr.	2006	62.0	38.7	72.3	95.5	60.7
%	2005	63.0	46.3	65.7	91.5	62.0

The data demonstrates that 60% or $5,768,081,069 of total funds was dedicated toward the instructional percentage goal. 2004-2005 reached 62% or $5,815,193,231 toward the instructional percentage goal. The decrease in the percentage of funds dedicated toward instruction from 2005 to 2006 is depicted by a decrease in allocations in the categories of academic achievement and instructional support as compared to increases in overhead and operational and non-operational expenditures (Riley, 2007a).

The 2005-2006 budget cycle caused a net change of 1.3% less allocation toward instruction but there were not specific factors that would determine this decrease. One possible factor could be replacing experience teachers with less expensive teachers. This would cause the percentage of salary utilized in the formula to decrease the amount of expenditure going to the classroom because of the savings on the salary schedule. Only 32% of the school districts in the State of Indiana achieved a 65% solution for total instructional expenditures in 2006 as shown in Table 6. Forty-three percent of the school

Table 6

Percentage of Indiana Schools Reaching 65% Solution

Schools That Achieved 65%	Year	School	%
Total School Instructional Expenditures	2006	96	32%
	2005	128	43%
All Property Tax Funds	2006	116	52%
	2005	133	45%

districts in the State of Indiana achieved a 65% solution for the total instructional expenditures in 2005. Indiana school districts actually met a higher level of expectation for the 65% solution in 2005 than 2006. There is no clear data contributing to why there was a decline in the percentage allocated toward total instructional expenditures for Indiana schools (Riley, 2007a).

District Wealth

The General Assembly in 1997 developed a new tuition support formula for the following years. This formula included a foundation grant that recognized a minimum funding level per student. A qualifying tax rate was also included to encourage low

taxing corporations to increase their rates and reduce overall variances in school General Fund property tax rates. School corporations who taxed at a rate above the qualifying level are then guaranteed revenue yield provision. This stipulation ensures equal availability to revenue regardless of the school corporation's property tax wealth (Indiana Fiscal Policy Institute, 2007).

The state of Indiana utilizes the tuition support formula as its main tool to correct the inconsistency in revenues and the tax rates across all 293 school corporations. The plan behind this concept was to address this difference in order to ensure that all Indiana students have equal opportunities. The estimated difference between the lowest to highest spent per student was nearly $3,000 from the 1997 Basic Grant funding. In comparing school corporations' spending at the 90th and 10th percentiles, the disparity was less than $840 per pupil (Indiana Fiscal Policy Institute, 2007).

While Indiana was attempting to balance the funding formula between state support and local support, other states were battling legal challenges based on the property wealth and the presumed variance in educational opportunities for students. The State of Texas was involved in a class action suit on behalf of school children that were members of poor families who live in school districts having a low property tax base and therefore favoring the more affluent school districts (Soltero, 2006). This class action suit was filed on behalf of Demetrio Rodriguez and other parents of the Edgewood district. The federal district court found Texas to be in violation of the equal protection clause of the U. S. Constitution. On appeal, the U. S. Supreme Court determined that a state does not have a constitutional duty to ensure that poor districts get the same funding as the wealthy districts (Schugurensky, 2002).

A study conducted by McKinney (1991) concluded that Indiana teacher's salaries were impacted by wealth of the district as determined by assessed valuation at the beginning salary levels. Since school funding utilizes a combination of local funding and state support, those school districts with high local wealth have more funds to use for educating students.

Teacher Salary

Chambers (1980) argues that using the cost of living index to help compute teacher salaries is not an efficient manner in which to set salary schedules. According to Chambers, "the cost of living and the cost of education, while related to one another, are not the same thing" (p. 242). Chambers states that the cost of education is the amount spent to obtain a certain level of educational services. The cost of living, he stated, is just the part in the "location and work decisions which affect the supply, and hence the salaries of school personnel" (p. 330). Chambers (1981) considers factors that affect teacher location to a region of the country to be cost of living, climate, consumption opportunities, and access to medical facilities, pollution, and crowding on the highways.

On the national level, the University of Georgia found significant relationships between salaries paid to teachers in contiguous districts and the salaries paid to teachers in individual districts. The results show that if salaries in the contiguous districts are raised, the salaries in the adjoining districts will also be raised. The factors in determining the cost of an equal education are the salary schedules for each district (Matthews & Holmes, 1982).

Watt (1990) from the University of Georgia, replicated research from Wisconsin and Florida in studying the finance equity in school districts with geographical

boundaries that touched each other. Watt found evidence that metropolitan school districts paid higher salaries than non-metropolitan area teacher salaries within the state of Georgia and found this to be true especially at the beginning teacher level.

McKinney (1991) studied information as he compared teacher salaries between school districts that were contiguous to each other. His studies found that the wealth of the district had an impact on the amount of salary paid to teachers along with the contiguous relationship to each district. McKinney found that other than at the beginning salary level, teacher salaries were influenced greater by their interdependence on other salaries within their salary schedule rather than on external factors such as salaries of contiguous school districts, state support tuition, or assessed valuation.

Talbot (1986) discovered demographic factors affecting teacher salary schedules. He found significant relationships existing between teacher salary and school district median family income, size of district, location of district, and operating tax rate. King (1979) cited the socioeconomic status of school districts as a key factor in salary determination. He tied this to both the community ability and its effort to pay; both experience and training levels of staffing would be impacted significantly.

Bruno (1981) was not in favor of fixed salary schedules that were tied to the number of years of service and allowed for teacher tenure. He felt that this type of system provided no motivation to perform at a higher level than any other staff member. Bruno felt there were three reasons these types of pay structures failed to encourage teachers to perform at a higher level. The three reasons were 1) annual increments are automatic; 2) the pay is low compared to other professions; and 3) lifetime earnings of administrators are much greater than that of teachers.

Chambers (1980) found differences in the supply of teachers between metropolitan and non-metropolitan school districts. Rural schools have less quantity and quality of teacher candidates even when they were located near a metropolitan area. This trend was apparent throughout the country.

A study of teacher salaries and their effect on academic achievement was conducted by Hanushek et al. (1999). The study reviewed the Texas School Project and the data from it on how the changes in salary schedule affect the balance of teachers. The increase in teacher salaries showed a modest impact on academic achievement.

The research by Duenas, O'Reilly and Parrish (1993) demonstrate a strong relationship between teacher salary, training, and years of experience to academic achievement. Osher, George, and Gonzalez (1991) also found this to be true, that the level of skill and experience in the classroom does make a difference for student success.

Factors of Academic Achievement

The studies that look at the influence of education spending on student achievement have found a variety of results. In a review of the literature on this topic, Picus and Robillard (2007) found that a clear connection between student academic achievement and student spending does not exist. The Austin Texas schools were studied and Murnane and Levy (1996) found that the availability of extra resources does not equal greater student achievement. However, Verstegen and King (1998) looked at over 35 years of research and concluded that financial inputs can and do make a difference in student academic achievement.

Nyhan and Alkadry (1999) attempted to research the effects of school funding on academic achievement. They studied the content areas of writing, math, and reading on

standardized tests. No conclusive results were determined from this study. Sharp (1993) conducted a study of the relationship between spending and student achievement in the state of Illinois. He studied students in grades 3, 6, 8, and 11 in mathematics and language arts for grades 3, 6, and 8. A Pearson correlation was calculated to determine if there was a relationship between spending for operating expenditures per pupil for 1989-90 and student achievement scores for April 1991. His findings indicated that the mean expenditure per pupil was $4,424. There was a small statistically significant negative correlation that existed between spending and achievement in every subject at every grade level with the exception of grade 11. These findings would lead one to determine that there is at best a weak relationship between the variables. Sharp suggested that schools might need to target specific programs with any increase in school funding rather than just providing more money to schools.

Knoeppel, Verstegen, and Rinehart (2007) conducted a study measuring the various inputs in education to the output of student achievement. They contended that sustained efforts to improve the productivity of school so that children reach state-mandated levels of accountability and implement the new financing of inputs and outputs is important if academic achievement is going to be enhanced. Their study utilized canonical analysis where multiple inputs and outputs of schooling were designed into the study. In canonical analysis, two linear combinations are formed; one of the predictor's variables and one of the criteria variables that are differentially weighted so that the maximum possible correlation between them is obtained. Like multiple regression, canonical analysis seeks a set of weights that will maximize a correlation coefficient.

There were two research questions that were asked in this study.

1. Is there a relationship between education resources and student achievement?
2. Can a different method of analysis help clarify existing research that shows mixed results of a relationship between education spending and student achievement?

This study provided an opportunity to measure different inputs and see the results on a variety of outputs. The study measured data from 128 school divisions in the Commonwealth of Virginia. The independent variables or inputs for the study were a combination of financial data and the number of days of school, per pupil expenditures, student teacher ratio, local composite index, average teacher salary, administrative cost per pupil, and facility cost per pupil (Knoeppel et al., 2007).

The dependent variables or outputs from this study are ITBS grade 4 assessment, ITBS grade 11 assessment, graduation rate, 2-year college attendance, 4-year college attendance, other college attendance, and voter participation. Voter participation was used as a measure of citizenship and participation in public affairs because both concepts are goals of public schools (Knoeppel et al.). The study found that only days of school and per pupil expenditures had any significant correlations. None of the other five canonical correlations was found to be of statistical significance. This study provided a comprehensive look at different input variables and output variables.

A study conducted by Greene, Huerta, and Richards (2007) utilized a prediction model that combined real resource and environmental variables as measured by achievement gains and college aspirations rates. The study intent was to enhance the practice and conditions of instruction by allocating resources to those practices, rather than to just provide more blanket money to the school districts. The authors found that

family background, student ability, and instructional conditions along with their interactions are key to working with schools.

In the Greene et al. (2007) study, students from the state of New Jersey during the period of 1999-2002 were studied. The state had an average per-pupil expenditure of $10,138 in 2002-2003 because of continuous efforts to increase additional resources to the classroom. The outcome dependent variables selected for this study consisted of four student achievement gain scores and one non-achievement outcome which were 1) language arts gain score from regular education, 2) mathematics gain score from regular education, 3) language arts gain score from Special Education, 4) mathematics gain score from Special Education, and 5) college aspiration rate from all students (Greene et al.). Gain scores are desirable for this type of study because they control student characteristics present at the time of the pretest, which are unlikely to change to any significant degree over the course of the study. Criteria were established to assemble a set of independent variables that would lead to useful model. These variables were linked to student outcomes and were supported by learning theory or previous research. The independent variables were classified as either resource or environmental and further classified as quality or quantity. Environmental factors were classified as either endogenous or exogenous. This allowed 22 independent variables to be isolated for potential analysis. The original independent variables for this study were 1) socioeconomic status-exogenous environmental, 2) disabled student rate-exogenous environmental, 3) feeder schools-endogenous environmental, 4) school enrollment-endogenous environmental, 5) class size-resource quantity, 6) student-teacher ratio-

resource quantity, 7) student-aide ratio-resource quantity, 8) Master's degree rate-resource quality, and 9) Doctoral degree rate-resource quality (Greene et al.).

A variety of data options were evaluated to determine relationships between the variables in the Greene et al. (2007) study. The feeder school variable was significant in predicting gain scores on both language arts and mathematics. This study suggests that additional graduate education by teachers beyond the bachelor's degree may encourage more students to aim for higher education. The data also suggest that employee compensation should be more directly tied to the correlates of improved student performance.

An in-depth study was conducted by Toutkoushian and Michael (2006) to study the effects of background and policy variables on school performance for the state of Indiana. This study grouped variables into two main categories:

1. Those that can potentially by affected by school corporations and/or state policymakers.
2. Those that are beyond the control school corporation and or state policymakers but may affect student performance.

The study stated that it is important to account for the effect of the background factors on school corporation performance. This data for the study provides a background for the Toutkoushian and Michael (2007) study and the research for the 65% study as follows:

1. The percentage of students passing both the English and Mathematics portion of the ISTEP+ exam has increased from 53.7% in 1996-97 to 64.1% in 2005-2006.

2. The percentage of Indiana students receiving academic honors or Core 40 diplomas has risen steadily since the late 1990s.
3. The percentage of public high school graduates who pursue college education has risen from 59% in 1995-96 to 74% in 2004-2005.
4. The percentage of 12th graders in public schools who have taken the Scholastic Aptitude Test (SAT), a requirement for applying to many postsecondary institutions have increased from 51% in 1995 to 55% in 2004-2005. (p. 3)

This study demonstrated a strong negative relationship for free and reduced lunch and the percent of students passing ISTEP+ English and math. This means that as free and reduced lunch percentages increases, then the success on the ISTEP+ decreases.

In addition, background data of socioeconomic factors were studied and an index was created. Their author's socioeconomic level rated schools and predicted ISTEP+ pass rates for the 2005-2006 school year. The top 10 schools that achieved above and below their predicted values are presented in Tables 7 and 8. The schools listed in Table 7 scored eight points or better above their predicted estimated ISTEP+ pass rate. There is no specific evidence to state why they scored higher than predicted.
(Toutkoushian & Michael, 2006).

Table 7

Actual Score Near or Above Upper Boundary

School Corporation	Actual ISTEP+ Pass Rate	Estimated ISTEP+ Pass Rate	Difference in Pass Rate
River Forest Community Schools	57	43	14
School City of East Chicago	43	32	9
Plainfield Community Schools	80	68	12
School town of Speedway	68	58	10
Milan Community Schools	73	63	10
Argos Community Schools	74	66	8
West Central School Corp.	66	58	8
Beech Grove City Schools	70	61	9
Eastern Howard School Corp.	81	73	8
Union Township School Corp.	82	74	8

Source: Toutkoushian and Michael (2006).

Table 8

Actual Score Near or Below Lower Boundary

School Corporation	Actual ISTEP+ Pass Rate	Estimated ISTEP+ Pass Rate	Difference in Pass Rate
Lake Station Community Schools	42	49	-7
Southwestern Con. Schools Shelby	64	71	-7
Seymour Community Schools	57	64	-7
Franklin Township Com. School Corp.	63	71	-8
Crothersville Community Schools	52	61	-9
Eminence Community School corp.	60	69	-9
Goshen Community Schools	50	59	-9
Rensselaer Central School Corp.	55	64	-9
MSD Shakamak Schools	50	60	-10
Monroe-Gregg Schools District	59	70	-11

Source: Toutkoushian and Michael (2006).

Summary

A review of the literature finds that there are many factors that affect academic achievements for school corporations. These factors vary from input of financial resources, district wealth, socio-economics, cost of living, geography of school district, demographics of school district, teacher experience, and collective bargaining.

Since the state of Indiana already focuses 85% of their available and legal required revenue to the classroom, then our challenge is to utilize these resources in a different fashion to affect student learning. The 65% solution is really a null fact because schools throughout the state are already achieving financial inputs at a higher level than Bryne, Mooney, and Governor Daniels are pushing schools to accomplish.

CHAPTER 3

RESEARCH METHODS AND PROCEDURES

This study examined four factors that affect academic success on the 10th grade ISTEP+. The methods and procedures were designed to measure these four factors to see if there was a significant relationship with academic achievement by accepting or rejecting the eight null hypotheses discussed in this chapter as well as Chapter 1.

Research Design

This study examined the data from all public school districts in the state of Indiana with the exception of charter schools. Charter schools were not examined because of the possibility of skewing the data based on the fact that the size of student population as it relates to expenditure and also the salary level for each teacher. The revenue for charter schools was derived from public schools in the state of Indiana based on choice. In addition, there was no assessed valuation for charter schools.

The study made comparison of the following:

1. Percentage of free and reduced lunch for the 2006-2007 school year
2. Percentage of student instructional expenditures to all other expenditures for the 2006 budget year
3. Per pupil expenditure for the 2006-2007 budget year
4. Average teacher salary for the 2006-2007 school year

5. 10^{th} Grade ISTEP+ language arts and math scores for 2007-2008.

This data was chosen because it was readily available and also reflected and affects the total budgetary process for schools in the state of Indiana. Each one of these factors was compared to the ISTEP+ language arts and math scores for 10^{th} graders to see if there was a significant relationship.

Data Collection

ISTEP+ language arts and math scores for 2007-2008, free and reduced population for 2006-2007, percentage of instructional expenses for 2006, per pupil expenditure for 2006-2007, and average teacher salary 2006-2007 was examined for 291 school corporations in the state of Indiana. This data was derived from the Indiana Department of Education, the Department of Local Government Finance, and the Office of Budget and Finance for all school districts. This data is available through public records access from the state of Indiana. There were no surveys necessary to obtain this data.

The Indiana Statewide Testing for Educational Progress-Plus (ISTEP+) measures what students know and are able to do at each grade level. Based on Indiana's Academic Standards, ISTEP+ provides a learning check-up to make sure students are on track and whether or not they need additional assistance. ISTEP+ is a criterion-referenced test or standards based assessment. The test consists of items that evaluate a student's achievement with respect to particular criteria from the Indiana Academic Standards. The test does not provide norm-referenced information. This test does not compare the performance of Indiana students with that of other students across the nation. Criterion-

referenced scores tell a student where he/she scores in relation to the Indiana Academic Standards. (Indiana Department of Education, 2008).

Indiana's educational leaders and businessmen wanted students and their employees to be able to solve problems and do more than just answer multiple-choice questions so they asked to add the applied skills portion. The ISTEP+ today involved students in grades 3 through 10 for language arts and mathematics. Science is tested at grades 5 and 7.

The Graduation Qualifying Exam (GQE) is administered to 10^{th} graders to test the basic and applied skills through the utilization of multiple-choice, short answers and essay responses to questions and the solving of math problems. This assessment is divided into two parts, language arts and mathematics. The passing scores are set by the Indiana State Board of Education based on recommendations of teachers from the two areas. The scores in this study are the percentage of students passing either language arts or math on the Indiana Statewide Test for Educational Progress (ISTEP+) on their first attempt (Indiana Department of Education, 2008).

Data Design

School districts were listed originally by their identification number to collect the data from the variety of sources available from the State. The means of all four data categories were listed for an overall comparison of the school district above the mean and the school districts below the mean. This comparison was made to see how many districts were scoring above or below the dependent variable of academic achievement mean, as demonstrated on ISTEP+, compared to the four categories of independent variables. The

study demonstrated whether there was a relationship between the four independent variables and the dependent variable.

The first set of data compared free and reduced lunch participation for 2006-2007 to the percent of students passing 10th grade 2007-2008 ISTEP+. The second set of data compared percentage of student instructional expenditures to all other expenditures in 2006 compared to the percent of students passing 10th grade 2007-2008 ISTEP+. The third set of data compared the per pupil expenses for 2006-2007 to the percent of students passing 10th grade 2007-2008 ISTEP+. The fourth and final set of data compared the average teacher salary in each school district to the percent of students passing 10th grade 2007-2008 ISTEP+. These comparisons were made with a correlation process to see where the data clusters were and to measure the relationships. There were eight comparisons made to evaluate whether there was a relationship between the academic achievement of Indiana students and the independent variables.

A multiple regression model was utilized based on the following reasons:

1. To develop a mathematical equation point of view about a phenomenon.
2. To predict outcome variables for future subjects.
3. To determine the strength of the relationship between a linear combination of independent variables and the predicted outcome variable.
4. Assess the relative contribution of a particular variable in the prediction equation.

Research Questions

1. Is there a relationship between the free and reduced lunch percentage per district and the achievement of students on the ISTEP+ in Indiana?

2. Is there a relationship between the percentage of student instructional expenditures to all other expenditures and achievement of students on the ISTEP+ in Indiana?
3. Is there a relationship between General Fund expenditures per student and the achievement of students on the ISTEP+ in Indiana?
4. Is there a relationship between the average teacher salary and the achievement of students on the ISTEP+ in Indiana?

Null Hypotheses for Research

H_01_a: There is no significant relationship in the percentage of free and reduced lunch for each district and the results on the 10th grade ISTEP+ language arts.

H_01_b: There is no significant relationship in the percentage of free and reduced lunch for each district and the results on the 10th grade ISTEP+ math.

H_02_a: There is no significant relationship in the amount of academic expenditure to the classroom compared to the total expenses and the results on the 10th grade ISTEP+ language arts.

H_02_b: There is no significant relationship in the amount of academic expenditure to the classroom compared to the total expenses and the results on the 10th grade ISTEP+ math.

H_03_a: There is no significant relationship in the per pupil expenditure and the results on the 10th grade ISTEP+ language arts.

H_03_b: There is no significant relationship in the per pupil expenditure and the results on the 10th grade ISTEP+ math.

$H_0 4_a$: There is no significant relationship in the average teacher salary expense and the results on the 10th grade ISTEP+ language arts.

$H_0 4_b$: There is no significant relationship in the average teacher salary expense and the results on the 10th grade ISTEP+ math.

Statistical Analysis

A series of correlations were utilized to measure and describe the relationship between the 10th Grade ISTEP+ scores and the four variables. Eight different scatter plots were utilized to demonstrate either a positive correlation or negative correlation or no correlation. The direction of the relationship was demonstrated in either a positive or negative classification. In a positive correlation, the two variables tend to move in the same direction: As the value of X variable increases from one individual to another, the Y variable also tends to increase; when the X variable decreases, the Y variable also decreases.

In a negative correlation, the two variables tend to go in opposite directions. As X variable increases, (free and reduced population) the Y variable decreases. This demonstrates a negative relationship.

The form of the relationship was examined to determine if there was a straight-line relationship, curved relationship, or in an envelope relationship. The degree of the relationship was depicted by a perfect correlation of 1.00 or a correlation of 0, which indicated no fit at all. A correlation of 1.00 or – 1.00 demonstrated a perfect relationship.

The correlation describes the relationship between the two variables but does not explain why the two variables are related. The relationship would not show a cause and

effect between the two variables. The eight null hypotheses were utilized and tested during this study.

The second statistical analysis utilized a multiple regression model. The criterion variable of ISTEP + scores was the variable in the study which was predicted. The predictor variable was the variable in this study used to predict the criterion equation. The four predictor variables were 1) free and reduce lunch percentage, 2) percentage of student instructional expenditures to all other expenditures, 3) per pupil expenditure, and 4) average teacher salary.

The research was a derivation study involving obtaining scores on the criterion and predictor variables for the sample of participants. Utilizing the scores in the derivation of the regression equation and other indices shows the association between the predictors and the criterion. This model helps predict a Y value for any value of X but, is not a perfect prediction. There was a predicted portion and an unpredicted or residual portion.

Summary

Chapter 3 discussed the research questions, research designs, data collection, data design, null hypotheses for research, and statistical analysis for this study. The data related to 10^{th} grade ISTEP+, free and reduced population, percentage of education expenses, percentage of expenditure per pupil, and average teacher salary, was compared for any significant relationship. The data analysis utilized correlations, scatter plots, and multiple regressions to interpret the information. These results are presented in Chapter 4.

CHAPTER 4

DATA ANALYSIS

The goal of this study was to examine the financial input factors for school systems and the relationship with academic achievement. The data for this study was derived from the Indiana Department of Education. Data for 2007-2008 10th Grade ISTEP+ for language arts and math were compared to 2007-2008 free and reduced lunch, 2006 percent of instructional expenses, 2006-2007 per pupil expenditures, and 2006-2007 teacher salary. This data was chosen to provide information for analysis and interpretation to measure the effect on ISTEP+ language arts and math scores from the independent variables. These variables were selected for this study based on the research that was conducted from a variety of authors and also what is relevant in today's education learning and financial environment. The statistical test utilized to treat the null hypothesis for this study was a regression model using the two dependent variables and four independent variables listed in Table 9.

Table 9

Variables for Study

Variables	Year	Indiana School Districts	Indiana Districts in This Study
Dependent Variables			
10th Grade ISTEP+ Language arts	2007-2008	293	291
10th Grade ISTEP+ Math	2007-2008	293	291
Independent Variables			
Free and Reduced Lunch	2006-2007	293	291
Instructional Classroom Expenses	2006 BUDGET	293	291
Per Pupil Expenditures	2006-2007	293	291
Teacher Salary	2006-2007	293	291

Descriptive Results

ISTEP+ Scores

The financial data for 291 school corporations in the study were compared to the academic results on the ISTEP+ test for 10th grades for language arts and math. Prairie Township Schools and Cass Township Schools in northern Indiana were excluded from the study because they do not have an actual high school. The students that live in these two school corporations attend high school in neighboring school systems. The data for this study was listed by school corporation name and the corporation number. In addition, the dependent variables were ranked from lowest to highest and then an analysis of the language arts and math ISTEP+ scores were made.

A variety of descriptive statistics were examined comparing the specific fiscal and academic achievement data from the state. The data was ranked from lowest to highest in each independent variable to compare the differences in each dependent variable. The language arts and math data demonstrates the percentage of schools who were above or below the state means for the independent variables such as free and reduced lunch and achievement above or below in the academic categories for the dependent variables.

There were 152 language arts scores out of 291 or 52.2% below the mean of 70.3%. Out of 291, 145 math scores or 49.8% were below the mean of 69.4 as reflected in Table 10.

Table 10

Percent of Schools Below the State Average for Dependent Variables

Dependent Variable	Percentage Mean Score	Scores Below the Mean	Percent Below the Mean
Language Arts	70.3	152 out of 291	52.2
Math	69.4	145 out of 291	49.8

There were 139 language arts scores out of 291 or 47.8% above the mean of 70.3%. One hundred forty-six out of 291 math scores or 50.2% fell above the mean of 69.4. The range of scores for language arts went from 32% for Gary Community Schools to 98% for Whiting School City, resulting in a difference of 66 percentage points. The range of scores for math went from 31% for Gary Community Schools to 97% for Whiting School City resulting in a difference of 66 percentage points as shown in Table 11.

Table 11

Percent of Schools Above the State Average for Dependent Variables

Dependent Variable	Percentage Mean Score	Scores Above the Mean	Percent Above the Mean
Language Arts	70.3	139 out of 291	47.8
Math	69.4	146 out of 291	50.2

Free and Reduced Lunch

The range for the independent variable free and reduced lunch was a low of 4% for the Zionsville Community Schools to a high of 93% for the School City of East Chicago for a difference of 89%. One hundred sixty-seven school districts or 57.4% were below the mean for free and reduced lunch. Of those schools below the mean, 54 of the school districts or 32.3% scored below the mean for the 10th grade ISTEP+ in language arts. Fifty-five schools districts or 32.9% that were below the free and reduced mean also scored below the mean for the 10th grade ISTEP+ in mathematics. This data is counter to the research that Toutkoushiann and Michael (2006) discussed in their study on the socio-economics of students and academic achievement. School districts with a high social-economic status normally score higher on achievement test based on their research.

One hundred twenty-four school districts or 42.6% were above the mean for the free and reduced lunches. Of those school districts, only 24 school districts or 19.4% were also able to score above the mean for 10th grade ISTEP+ in language arts. Thirty-two school districts or 25.8% that scored above the mean for free and reduced lunch scored above the mean for the 10th grade ISTEP+ in mathematics.

Instructional Expenses to the Classroom

The range for the independent variable instructional expenses to the classroom was a low of 37% for the Mill Creek Community Schools to a high of 83% for Cannelton City Schools for a difference of 46%. One hundred thirty-eight school districts or 47.4% were below the mean for instructional expenses to the classroom. Of those schools below the mean, 81 of the school districts or 58.8% scored above the mean for the 10th grade ISTEP+ in language arts. Seventy-seven school districts or 55.7% that were below the instructional expenses to the classroom mean also scored above the mean for the 10th grade ISTEP+ in math.

One hundred fifty-three school districts or 52.6% were above the mean for the instructional expenses to the classroom. Of those school districts, 96 school districts or 62.7% scored below the mean for 10th grade ISTEP+ in language arts. Eighty-four school districts, or 54.9% that scored above the mean for instructional expenses to the classroom, scored below the mean for the 10th grade ISTEP+ in math.

Per Pupil Expenses

The range for the independent variable per pupil expenses was a low of $4,675 for the Frankton-Lapel Community Schools to a high of $11,858 for Dewey Township Schools for a difference of $7,183. One hundred seventy-nine school districts or 61.5% were below the mean for per pupil expenses. Of those schools below the mean, 102 of the school districts or 57% scored above the mean for the 10th grade ISTEP+ in language arts. One hundred five schools districts, or 58.7% that were below the per pupil expenses mean, also scored above the mean for the 10th grade ISTEP+ in mathematics.

One hundred twelve school districts or 38.5% were above the mean for the per pupil expenses. Of those school districts, 77 school districts or 68.8% scored below the mean for 10th grade ISTEP+ in language arts. Seventy-three school districts, or 65.2% that scored above the mean for per pupil expenses, scored below the mean for the 10th grade ISTEP+ in mathematics.

Teacher Salaries

The range for the independent variable teacher salaries was a low of $34,250 for the Eminence Community Schools to a high of $56,555 for West Lafayette Community Schools for a difference of $22,305. One hundred forty-four school districts or 49.5% were below the mean for teacher salaries. Of those schools below the mean, 67 of the school districts, or 46.5%, scored above the mean for the 10th grade ISTEP+ in language arts. Fifty-seven school districts, or 39.6% that were below the teacher salaries mean, also scored above the mean for the 10th grade ISTEP+ in mathematics. One hundred forty-seven school districts or 50.5% were above the mean for the teacher salaries. Of those school districts 76 school districts or 51.7% were also scored below the mean for 10th grade ISTEP+ in language arts. Sixty-five school districts or 44.2% that scored above the mean for teacher salaries scored below the mean for the 10th grade ISTEP+ in mathematics.

Summary of Descriptive Statistics

Table 12 and 13 summarize the percentage of schools below and above the state average for the independent variables. Table 14 demonstrates the means for each of the variables and also the standard deviations for each independent variable and dependent

variable. This data is referenced for both the descriptive and inferential discussion in this study.

Table 12

Percent of Schools Below the State Average for Independent Variables

Variable	Mean Score	School Districts Below the Mean	Percent Below the Mean
Free and reduced lunch	35.0	167 out of 291	57.4
Instructional Classroom Expenses	61.4	138 out of 291	47.4
Per Pupil Expenditures	6,236.0	179 out of 291	61.5
Teacher Salary	46,677.0	144 out of 291	49.5

Table 13

Percent of Schools Above the State Average for Independent Variables

Variable	Mean Score	School Districts Above the Mean	Percent Above the Mean
Free and reduced lunch	35.0	124 out of 291	42.6
Instructional classroom expenses	61.4	153 out of 291	52.6
Per pupil expenditures	6,236.0	112 out of 291	38.5
Teacher Salary	46,477.0	147 out of 291	50.5

Table 14

Mean, Standard Deviation, and Sample for Dependent and Independent Variables

Variables	Mean	*SD*	*N*
Dependent Variables			
Language Arts	70.317	9.7300	291
Math	69.438	11.3594	291
Independent Variables			
Free and reduced lunch	34.620	15.0310	291
Instructional expense	61.412	6.8104	291
Per pupil expenditures	6,236.400	830.3990	291
Teacher Salary	46,477.000	3,413.2500	291

Inferential Results

Model Summary for Language Arts and Math

The *R* value or multiple correlation coefficient for language arts was .77 and .68 for math while examining the predictors variables of salary, instruction, pupil expenditures and free and reduced lunch. This provides the degree of relationship from 0 to 1 between the set of predictors and the criterion variable of ISTEP+ scores. This is the overall degree of relationship between the linear combination of four predictor variables and the criterion variable of language arts and math. An *R* value is considered significant if it is 60% or higher. In this study both language arts and math demonstrated a significantly relationship between the independent variables and the dependent variables because they were above the 70% threshold.

The R^2 value or coefficient of multiple determination value for language arts is .60 and .47 for math. The R^2value of .60 means that 60% of the predictor accounts for the shared variance with language arts. The R^2 must be significantly different from 0 to reject the null. The Anova tests the significance of R^2. This is the proportion of the total variance in the criterion that is shared with the linear combination of predictor variables. In other words, 60% of the variance is shared among the criterion variables and the predictors for language arts. By adding one predictor variable at a time, the study will show that each subsequent predictor makes a difference. This shows how much variance is predictable in the criterion, utilizing all four predictor variables.

The Adjusted R^2 value of .59 for language arts and .46 for math demonstrates the variation on language arts and math ISTEP+ scores explained by the four dependent variables. This provides an unbiased look at R^2in the population. This adjusts R^2 based on the sample and number of predictors.

Utilizing the shrinkage formula provides an estimate of what the coefficient of multiple determinations would be in the population without having to gather two samples of people or split the one sample into a derivation sample. The difference between the calculated and the adjusted coefficient of multiple determinations is termed the shrinkage. Another way to state this is the difference in what is shared between the sample and the population. The smaller the amount of shrinkage, the better the prediction equation will work for the population. Shrinkage should be within .1 or 10% for this statistic. The R^2 value for language arts of .60 is compared to the adjusted R^2 value of .59 to determine the level of shrinkage of .006 for language arts. The R^2 value of .47 is compared to the adjusted R^2 of .46 for math with ashrinkage of .008.

Standard Error of the Estimate of 6.22 for language arts and 8.32 for math is a measure of dispersion of points about the regression line. It is also a measure of the accuracy of our prediction. The smaller the error of estimates is, the smaller standard of error, and then the more precise or accurate our prediction.

Anova for Language Arts and Math

The *F* value for language arts was 107.11 and 63.80 for math in relation to the predictors of salary, instruction, pupil expenditures and free and reduced lunch. The significance value was .000 for the dependent variable of language arts and math. The *F* observed is equal to or larger than *F* critical, and thus it falls in the region and is significant. Therefore, the null can be rejected. This means that a significant proportion of the variance is in the criterion. Based on these results, we know that there is a relationship between the independent variables and dependent variable of language arts $F(4, 286) = 107.11, p<.05$ and math $F(4, 286) = 63.80, p<.05$.

Coefficients for Language Arts and Math

The *t*-test looks at the significance of the predictors and the partial and semi-partial correlation coefficients. The coefficients for the dependent variable of language arts resulted in a value of $t(290) = -.18.41, p<.05$ and math at $t(290 = -14.19, p <.05$ for the independent variable of free and reduced lunch along with a significance value of .001 and .000. Since the significance value is less than .05, we can reject the null for free and reduced lunch on language arts and math. Instructional expenses to the classroom resulted in a value of $t(290) = -1.58, p <.05$ for language arts and for math at $t(290) = .45, p <.05$ along with a sig. value of .12 and .65 respectively. Since the sig. value was greater than .05, we cannot reject the null for instructional expenses for language arts or

math. Per pupil expenditures had a value of $t(290) = 1.94$, $p<.05$ for language arts and a value of $t(290) = .49$, $p<.05$ for math along with a significance value of .05 and .63. Since the significance value was greater than .05, we cannot reject the null for per pupil for language arts or math. The final independent variable of salary had a value of $t(290) = 1.67$, $p<.05$ for language arts and math at $t(290) = 2.24$, $p < .05$) along with a significance value of .10 and .03. We cannot reject the null for teacher salary on language arts but we can reject the null for math. There is less than a 5% chance that a type one error will occur for free and reduced lunch, language arts, and math and teacher salary and math.

Table 15

Unstandardized and Standardized Partial Regression Coefficients for Language Arts

Independent Variables	B	*SE*	β	*t*	Sig
Free and reduced lunch	-.514	.028	-.791	-18.412	.000
Instructional expense	-.089	.056	-.062	-1.575	.116
Per pupil expenses	.001	.001	.083	1.941	.053
Teacher salary	.000	.000	.063	1.673	.095

Table 16

Unstandardized and Standardized Partial Regression Coefficients for Math

Independent Variables	B	*SE*	β	*t*	Sig
Free and reduced lunch	-.529	.037	-.700	-14.190	.000
Instructional expense	.034	.076	.020	.452	.651
Per pupil expenses	.000	.001	.024	.486	.627
Teacher salary	.000	.000	.096	2.240	.026

Partial regression coefficient in Tables 15 and 16 tells the predicted change in the criterion given a one unit change in the particular predictor, while partialling out all other predictors. There are two forms of partial regression coefficients, an unstandardized b partial regression coefficient and a standardized beta partial regression coefficient. Semi-partial correlation coefficient in Tables 15 and 16 demonstrate the relationship between the predictor and the criterion. This is a measure of magnitude and direction of relationship between the predictor and the criterion, while partialling out the other predictors from the one predictor being studied. The criterion is left alone with the influence of the other predictors from it.

The partial correlation coefficient in Tables 15 and 16 are similar to the semi-partial correlation coefficient but they also remove the relationship of other predictors with the criterion prior to correlating. This is a measure of the magnitude and direction of relationship between the predictor and criterion while partialling out other predictors from both the predictors in the study and the criterion.

The unstandardized coefficients tells the researcher the amount of predicted change in the criterion variable one is trying to predict given a one unit change in the particular predictor having this weight, while partialling out the effects of all other predictors. There is a partial regression coefficient for each predictor as shown in Tables 15 and 16 in the first column. If there is a one-unit change free and reduce lunch, then there is a -.51 change in language arts scores and a -.53 change in math scores.

Table 17

Partial Regression Coefficients Tolerance Levels for Language Arts Predictors

Independent Variables	Zero Order	Partial	Part	Tolerance
Free and reduced lunch	-.767	-.736	-.689	.759
Instructional expense	-.260	-.093	-.059	.902
Per pupil expenses	-.298	.114	.073	.759
Teacher salary	.025	.098	.063	.997

Table 18

Partial Regression Coefficients Tolerance Levels for Math Predictors

Independent Variables	Zero Order	Partial	Part	Tolerance
Free and reduced lunch	-.679	-.643	-.610	.759
Instructional expense	-.167	-.027	-.019	.902
Per pupil expenses	-.294	.027	.021	.759
Teacher salary	.064	.131	.096	.997

Tolerance tells us if predictors are related and how much collinearity exists; the lower the collinearity, then the higher the tolerance. The higher the tolerance, the more unrelated each independent variable is to each other. Tolerance values will be accepted if they are above .20. Since the tolerance level is above 70% on all four independent variables, then all four independent variables are unrelated to one another. This means that there is less than a 30% chance that the independent variable of free and reduced is

related to the other three independent variables. Tables 17 and 18 present the tolerances for the two dependent variable models and all are within acceptable ranges to assume the absence of collinearity.

Histograms of Data Relationships

Histograms are a valuable tool for examining possible violations of data normality. The first histograms for the dependent variable language arts and math demonstrate the normality of the distribution of scores (Figures 2 and 3). The residual is the difference between the actual observed value and a value predicted by a regression. Scores are distributed in a normal curve fashion when reviewing the 291 scores for language arts and math.

The second measure of normality for the regression standardized residual for language arts and math are determined by how close the residuals fall to the diagonal P-P line. The closer the residuals are to the diagonal line, then the more it is a normal distribution. Figures 4 and 5 present this data. There are some scores that are not directly on the regression line but the majority of scores fall within a reasonable alignment. This should fall within + or – 2 standard errors in the scatter plot.

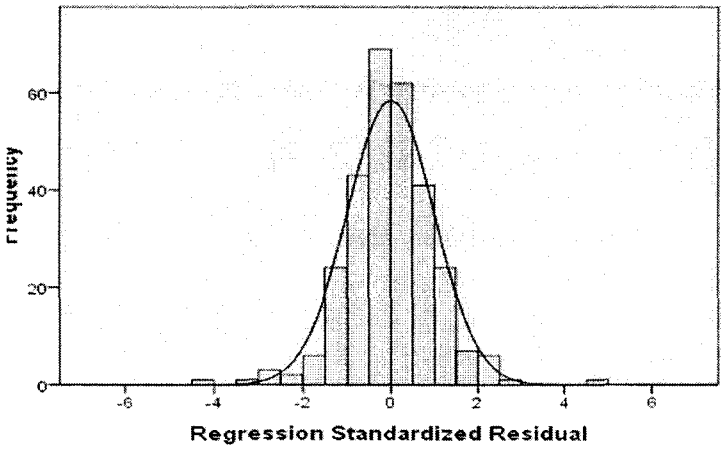

Figure 2. Regression standardized residual for language arts

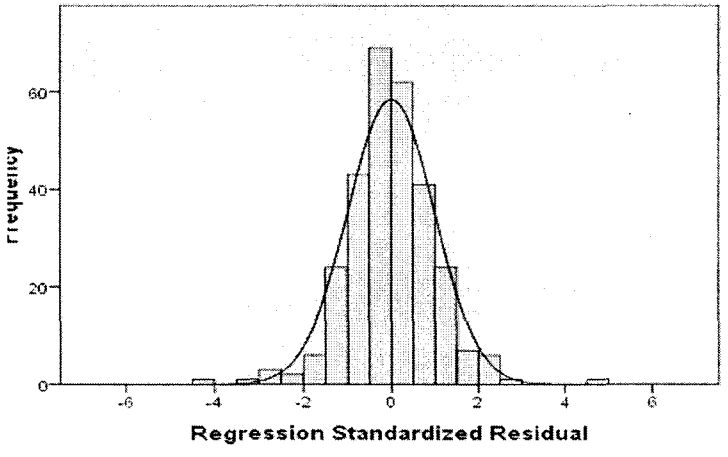

Figure 3. Regression standardized residual for math

If the data falls within these parameters, then the residuals are not overly large anywhere.This means that one straight line explained the data well. If there are residuals beyond this point or straight line, this would indicate nonlinearity which would be represented by data points far from the regression line.

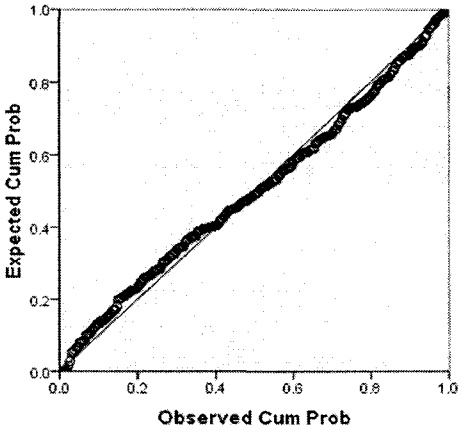

Figure 4. Normal P-P of regression standardized residual for language arts

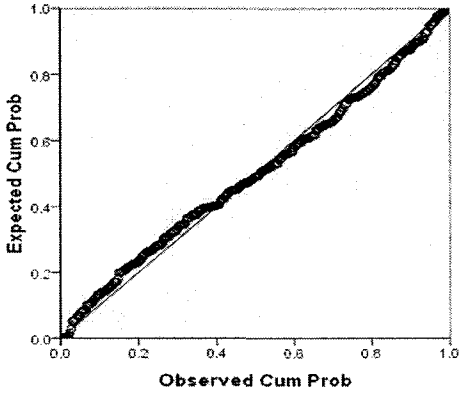

Figure 5. Normal P-P of regression standardized residual for math

Scatterplots of Regression Results

The scatter plot of the regression standardized predicted value for the dependent variables language arts and math shows independence because there was no pattern in the plot (Figures 6 and 7). Prediction errors have the same variance across levels of the predictor. Residuals are independent of one another. The scores appear random and do not create a fan shape. Since there was not specific pattern in the scatter plot, then independence can be assumed.

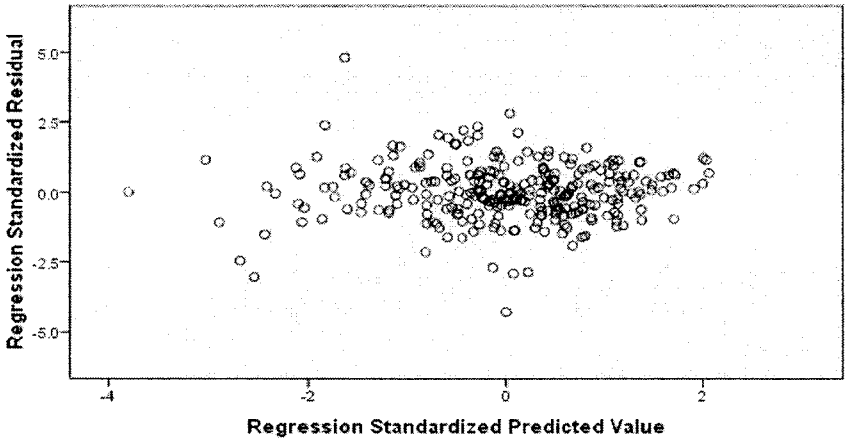

Figure 6. Regression standardized predicted value for language arts

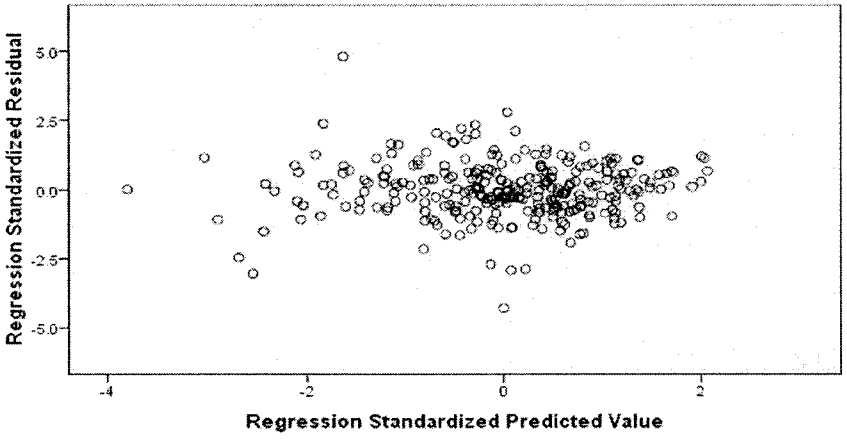

Figure 7. Regression standardized predicted value for math

The scatter plot demonstrating the relationship between language arts and math scores for free and reduce lunch had a negative correlation (Figure 8). As the number of free and reduced lunch increases, then the scores on the language arts and math ISTEP+ decrease.

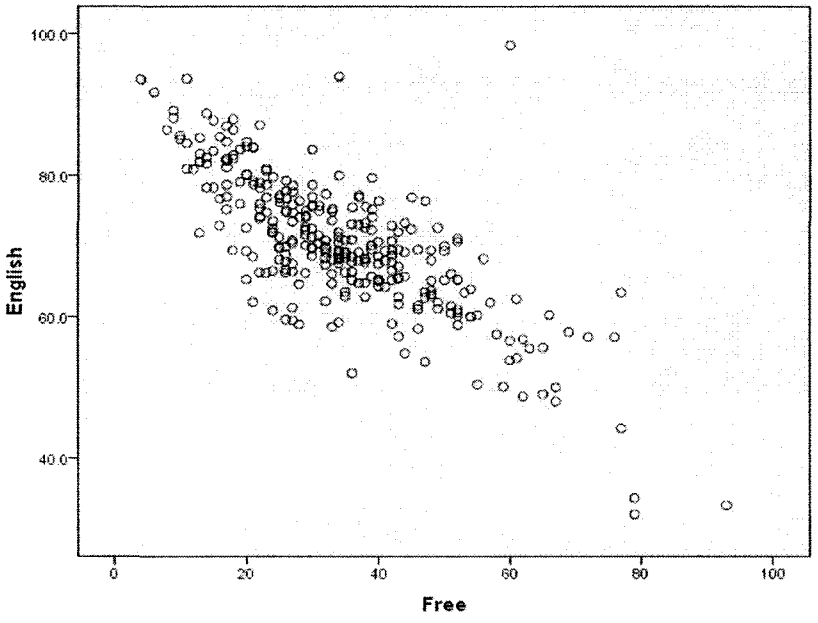

Figure 8. Free and reduced lunch and language arts

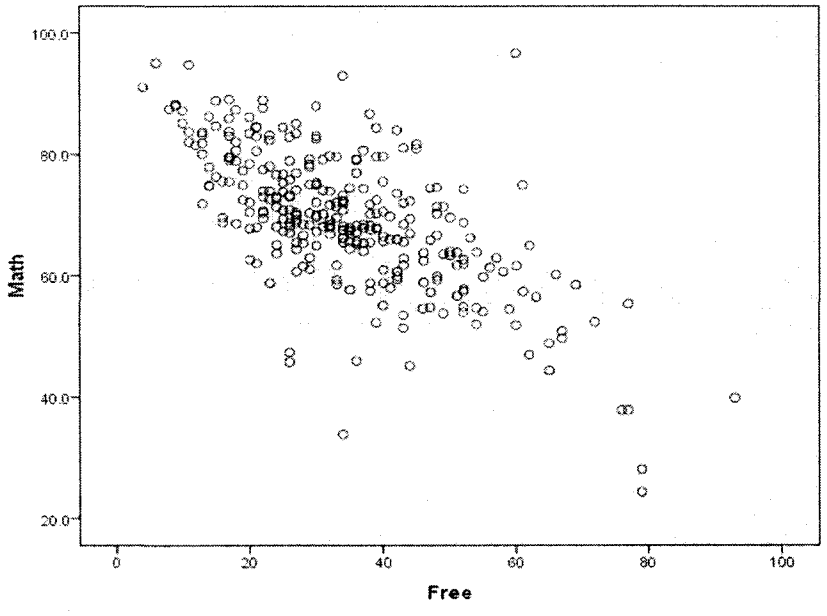

Figure 9. Free and reduced lunch and math

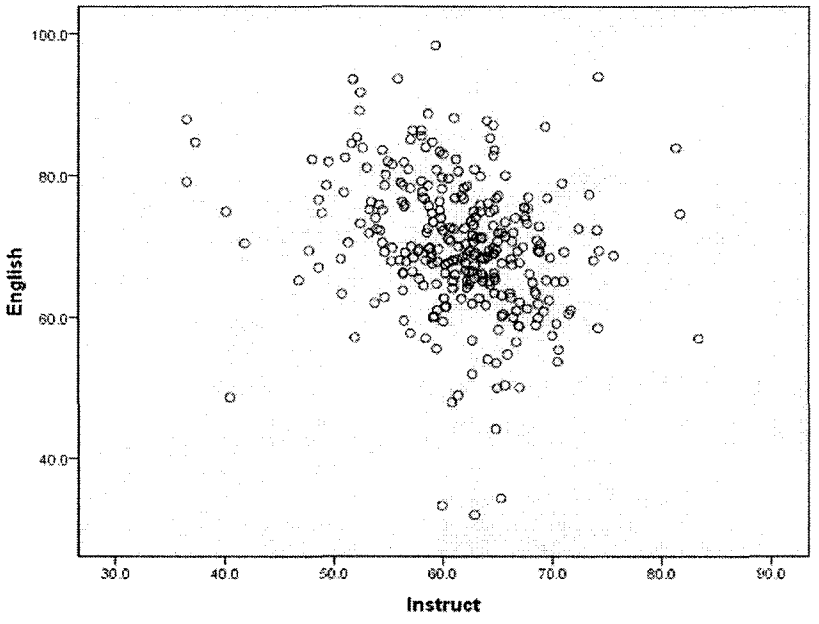

Figure 10. Instructional expenses to the classroom and language arts

The scatter plot for instructional expenditures in the classroom shows no specific pattern or relationship for language arts and math (Figure 10). The per pupil expenditure

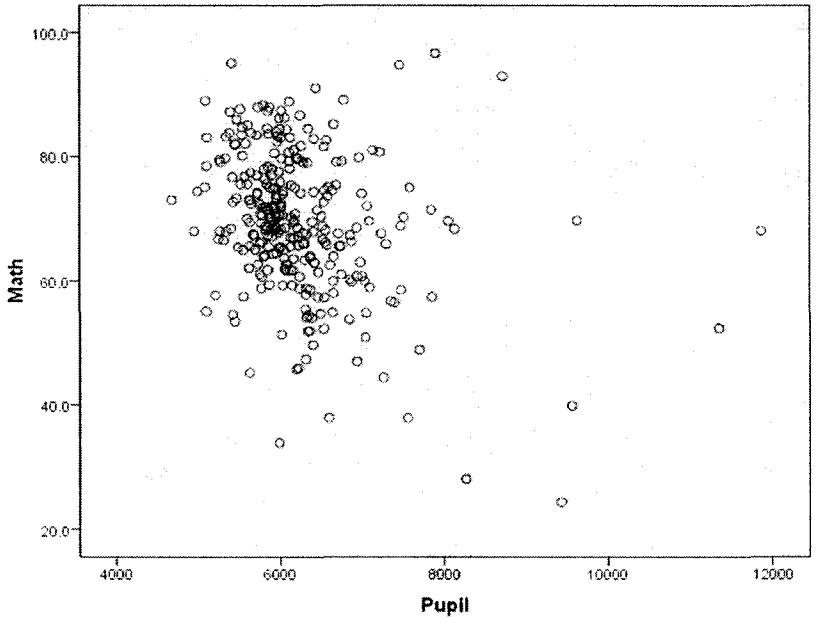

Figure 11. Instructional expenses to the classroom and math

independent variable also does not show a pattern or relationship for language arts and math (Figure 11). The final independent variable teacher salary scatter plot also does not show a pattern or relationship for language arts or math (Figure 12 and 13).

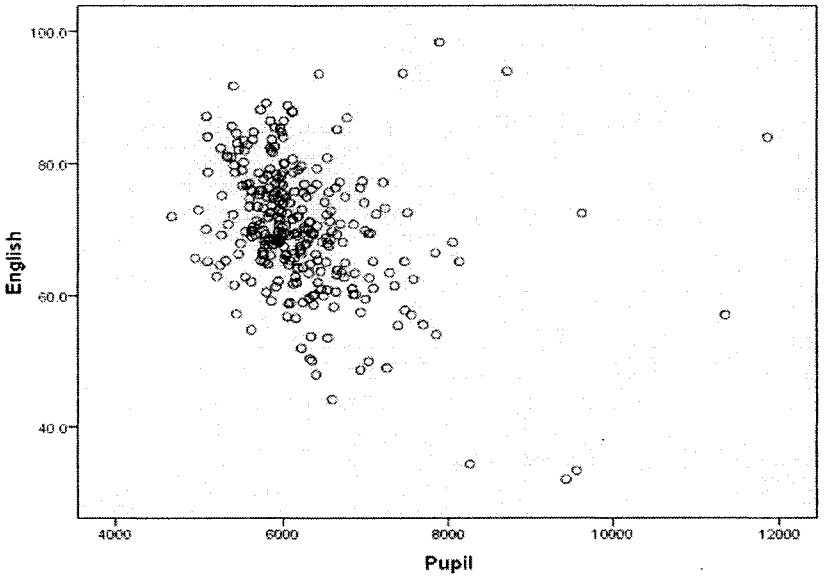

Figure 12. Per pupil expenses and language arts

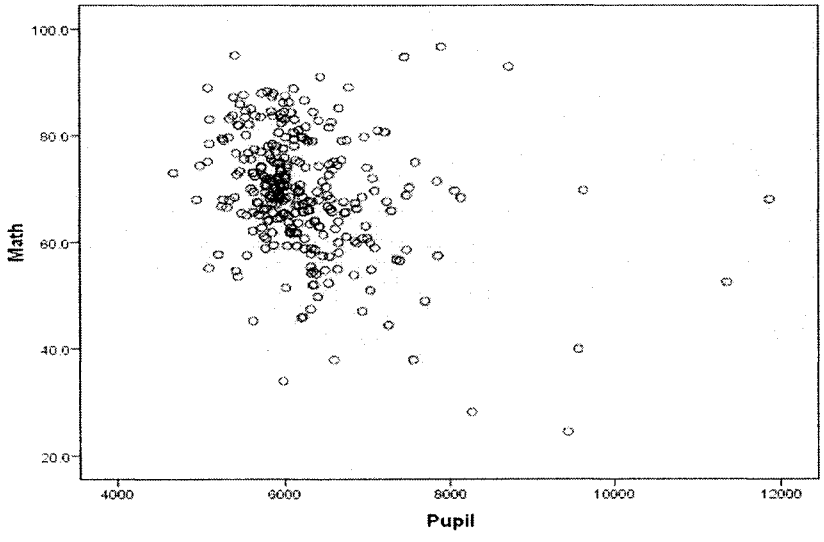

Figure 13. Per pupil expenses and math

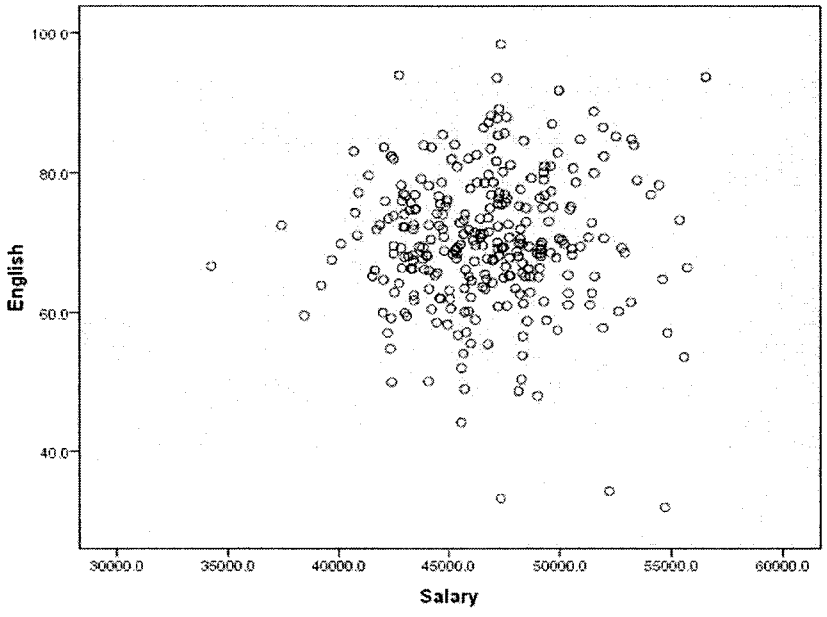

Figure 14. Teacher salary and language arts

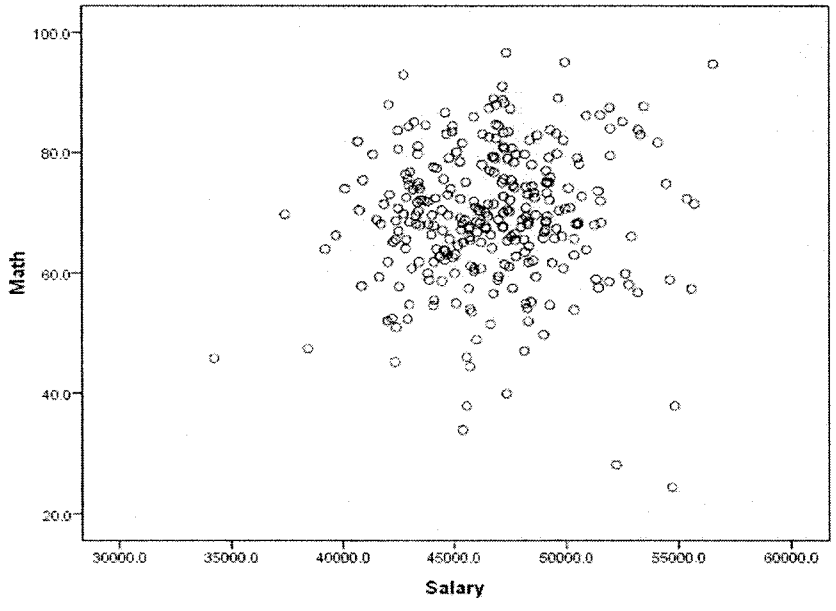

Figure 15. Teacher salary and math

Figures 14 does not demonstrate a significant relationship between teachers salary and language arts test scores. The data in the study also does not support a relationship

between the independent and dependant variables. Even though there was a significant relationship in the data for teacher's salary and math scores, figure 15 does not demonstrate clear visual relationship for those variables.

CHAPTER 5

RESULTS, IMPLICATIONS, AND RECOMMENDATIONS

The final chapter in this study was established to provide a review of the first four chapters. In addition, this chapter was designed to provide the summary of the data and to provide conclusions from the detailed findings. Chapter 5 is divided into five sections: introduction, summary, results, conclusions, and recommendations for further research. While the findings of this study have been presented in the previous chapter, the conclusions developed by this study are presented in detail later in this chapter.

Summary

This study was designed to investigate the relationship between financial inputs factors for 291 school systems and the relationship with academic achievement as measured on 10^{th} grade ISTEP+ language arts and math scores. The study made the comparison of the percentage of free and reduced lunch for the 2006-2007 school year, percentage of student instructional expenditures to all other expenditures for the 2006 budget year, per pupil expenditure for the 2006-2007 budget year, and the average teacher salary for the 2006-2007 school year. These four independent variables were compared to the dependent variables for 10^{th} Grade ISTEP+ language arts and math scores for 2007-2008.

Governor Daniels has made the statement that only 61% of all educational expenditures actually make it to the classroom. This statement is very misleading because the calculation includes the general fund, debt service, retirement/severance bond fund, capital projects fund, transportation fund, school bus replacement fund and special education fund. School districts do have the flexibility to move funds into the rainy day fund but this creates shortages in those specific funds. According to Costerison (2008), the school systems in the state of Indiana are currently spending over 85% of their available resources directly into the classroom. Salaries and benefits are the largest percentage of the general fund which is the basis of the 85% that Denny Costerison has reported in his information (Riley, 2007a).

The researcher wanted to investigate if spending more money directly into the classroom had a significant relationship with academic achievement as measured by the 10^{th} grade ISTEP+ language arts and math assessment. This study showed no relationship between the independent variable of instruction to the classroom and academic achievement measured by 10^{th} grade ISTEP+ for either language arts or math.

On a national level, First Class Education pushed for school districts to target the 65% solution and increase spending directly into the classroom. States from throughout the country were studied to see if achievement at a 65% level to the classroom would impact academic achievement. Individual states did not have a difference in academic achievement when more resources were directed to the classroom. Texas, Georgia, Kansas, Colorado, Oklahoma, and Oregon, were reviewed in the research and there was no significant academic gains demonstrated by any of these states.

Results

The study centered on the following questions related to financial inputs and academic achievement for 10th grade students throughout the state of Indiana. Is there a relationship between the free and reduced lunch percentage per district and the achievement of students on the ISTEP+ in Indiana? Is there a relationship between the percentage of student instructional expenditures to all other expenditures and achievement of students on the ISTEP+ in Indiana? Is there a relationship between General Fund expenditures per student and the achievement of students on the ISTEP+ in Indiana? Is there a relationship between the average teacher salary and the achievement of students on the ISTEP+ in Indiana?

The statistics provided a picture of the differentiated data of financial inputs and academic achievement. The mean score for language arts on the 10th grade ISTEP+ exam was 70.3%. There were 152 school districts below this mean or 52.2% and 139 schools above the mean or 47.8% of the 291 school districts studied. The mean score for math on the 10th grade ISTEP+ was 69.4%. There were 145 school districts below this mean or 49.8% and 146 school districts or 50.2% above the mean for math.

There was no consistent pattern in how the percentage of schools above or below the mean for the four independent variables scored on the ISTEP+ language arts or math assessment. One hundred sixty-seven school districts or 57.4% were below the mean for free and reduced lunch. Of those schools below the mean, 54 of the school districts or 32.3% scored below the mean for the 10th grade ISTEP+ in language arts. Fifty-five schools districts or 32.9% that were below the free and reduced mean also scored below the mean for the 10th grade ISTEP+ in mathematics.

This trend continued as the researcher reviewed the data for instructional expenses to the classroom. One hundred thirty-eight school districts or 47.4% were below the mean for instructional expenses to the classroom. Of those schools below the mean, eighty-one of the school districts or 58.7% scored above the mean for the 10th grade ISTEP+ in language arts. Seventy-seven schools districts or 55.7% that were below the instructional expenses to the classroom mean also scored above the mean for the 10th grade ISTEP+ in mathematics.

The same trend of inconsistency continued in the descriptive statistics for per pupil expenditure and teacher salary. The range in expenditures for instructional expenses to the classroom, per pupil expenditure, and teacher salary offered a varied level of funding for school systems. Does the amount of money spent on education make a difference as measured by standardized assessment? The results of this study do not support that spending more money in the classroom will increase academic achievement as measured by ISTEP+ for 10th grade students.

Instructional expenses to the classroom for both language arts and math did not have a consistent relationship with academic achievement. Per pupil expenditure did not show a relationship with academic achievement for language arts or math. Teacher salary did not show a relationship with academic achievement for language arts, but did demonstrate a relationship with math.

The F value for language arts was 107.11 and 63.80 for math as compared to the predictors of free and reduced lunch percentage, instructional expenses to the classroom, per pupil expenses, and teacher salary. The ANOVA data indicates that a significant proportion of the total variance in the language arts and math scores were predicted by

the four dependent variables. The F values of 107.11 for language arts and 63.80 for math were greater than the sig. value of .000.

The findings for this study were based on the results from the statistical analysis of the study of financial inputs and the results for ISTEP+ language arts and math:

1. There was a significant relationship in the percentage of free and reduce lunch for each district and the results on the 10th grade ISTEP+ language arts. Specifically, there was a significant relationship between free and reduced lunch and language arts based on the significance value of .000 being less than .05; therefore, the null is rejected.
2. There was a significant relationship in the percentage of free and reduced lunch for each district and the results on the 10th grade ISTEP+ math. Specifically, there was a significant relationship between free and reduced lunch and math based on the significance value of .000 being less than .05; therefore, the null is rejected.
3. There was no significant relationship in the amount of academic expenditure percentage to the classroom compared to the total expenses and the results on the 10th grade ISTEP+ language arts. Instructional expenses to the classroom for language arts was not significant because the significance value of .116 was greater than .05; therefore, the null is not rejected.
4. There was no significant relationship in the amount of academic expenditure percentage to the classroom compared to the total expenses and the results on the 10th grade ISTEP+ math. Instructional expenses to the classroom for math

was not significant because the significance value of .651 was greater than .05 therefore, the null was not rejected.

5. There was no significant relationship in the per pupil expenditure and the results on the 10th grade ISTEP+ language arts. Instructional expenses to the classroom for language arts was not significant because the significance value of .053 was greater than .05; therefore, the null was not rejected.
6. There was no significant relationship in the per pupil expenditure and the results on the 10th grade ISTEP+ math. Per pupil expenses for language arts was not significant because the significance value of .627 was greater than .05 therefore, the null was not rejected.
7. There was no significant relationship in the average teacher salary expense and the results on the 10th grade ISTEP+ language arts. Teacher salary expenses for language arts was not significant because the significance value of .095 was greater than .05; therefore, the null was not rejected.
8. There was a significant relationship in the average teacher salary expense and the results on the 10th grade ISTEP+ math. Teacher salary expenses for math was significant because the significance value of .026 was less than .05; therefore, the null was rejected.

In reviewing the data there are assumptions that were examined to make sure that there were no violations of the data. Independence, normality, and linearity were studied by the histograms and scatter plots. The regression standard residuals for language arts and math demonstrated a normal curve. The second measure of normality for the regression standardized residual for language arts and math was demonstrated by how

close the residuals fell along the diagonal P-P line. Even though there were a few outliers, the majority of residuals fell on or near the line. The final assumption that was reviewed was the regression standardized predicted value for the dependent variables of language arts and math. The scores were random and did not create a fan shape. Since there was no specific pattern in the scatter plot, independence could be assumed.

Tolerance levels for all four independent variables in this study were high. The higher the tolerance, the more unrelated each independent variable is to each other. Tolerance values will be accepted if they are above .20. Since the tolerance level was above 70% on all four independent variables, then, all four independent variables can be considered to be unrelated to one another.

Conclusions

The summary of research for the 65% solution does not demonstration a relationship between spending additional dollars to the classroom and an increase in academic achievement. In November, 2006 School Matters reviewed the student performance of the school districts that had enacted the 65% solution or were moving toward that decision. They concluded that student performance does not noticeably or consistently increase at 65%. The summary of the data from Taylor (2004) found no evidence that inducing schools to spend a greater share of their budget on instruction will lead to increased efficiency. According to Bracey (2006), Utah has the smallest amount spent in the classroom and New York the highest expenditure per state but there was no pattern to the amount spend in the directly into the classroom and academic success.

Toutkoushian and Michael (2007) did find a relationship between the wealth of a community as demonstrated by a variety of poverty factors which influences the success

on the ISTEP+ scores for the state of Indiana. Their study went further into details to list school districts that achieved below and above where their predicted score should have been based on factors of poverty. The Toutkoushian and Michael study stated that as free and reduced percentages increases, the success on the ISTEP+ decreases. The study in this dissertation concluded the same results as demonstrated in figures 8 and 9; as the free and reduced percentage increased, academic success decreased.

Based on the findings of the data that was studied by the research, the following conclusions were drawn. Free and reduced lunch percent does make a significant difference in ISTEP+ language arts and math scores on the 10^{th} grade assessment. With this information in mind, it is important that the Indiana School Business Officials and State Superintendent's Association lobby state and local representatives to place an increased level of financial resources in the school funding formula for school district with a high rate of free and reduced lunch students. There is a mechanism in place with the Indiana funding formula to provide resources to schools with a high level of poverty, but more is needed if schools are going to overcome the distinct disadvantages those districts like Gary, East Chicago, Indianapolis, and others throughout the state who have a high level of students from poverty. School superintendents need to continually communicate with the Department of Education to create an ally to place more dollars in the classroom for at risk students. State grants need to be made available for schools in the area of technology, innovation, and staff development to better train teachers to work with students from disadvantaged backgrounds. Funding should be available to create a longer school day and an extended calendar utilizing new state dollars to allow students from poverty more time to learn.

State School Superintendent Dr. Tony Bennett and Governor Daniels need to work at the federal level to bring more Title One dollars to the state of Indiana. Title One resources are based on the number of free and reduced students in each school district. Additional Title One teachers or teaching assistants can lower class size in language arts and math to provide more individualized instructions.

More Title One dollars for technology and other media can be an asset and allow teachers to create podcasts for individualized education plans for each student. The integration of technology can allow the students to take these resources home and involved the parents in one-on-one instruction with their child. By utilizing more technology resources in the classroom, one can increase the time on task in a fiscally conservative manner.

Increasing total expenditures to the 65% level, however, does not insure increases in academic performance for students in the state of Indiana. Providing additional dollars to the classroom for schools with a high rate of poverty and the appropriate education plan can provide the opportunity for students to raise their academic achievement. I would encourage Governor Daniels and the General Assembly to place more dollars in categorical grants for at risk students and not a blanket increase toward 65% of total expenditures.

Teacher salary also made a significant difference in ISTEP+ math scores on the 10^{th} grade assessment. Since this study found that there is a level of significance in teacher salary and success of math students, then additional resources for math teachers and math instructional staff development might provide academic dividends for students. One recommendation to consider is to bring engineers and other professionals from

outside of education into the classroom. Providing additional funding for math educators would attract top notch professionals to work with students. These experts, who utilize math at a high level in their careers, can bring an experiential based approach to learning directly to the classroom.

The second recommendation in the area of math is to provide a different or tiered salary scale to math and even science teachers who can demonstrate a high level of proficiency in their subject area. Compensating a math or science teacher more than a physical education teacher is a topic of discussion that has taken place for many years but school districts and teacher associations have not made an attempt to move in this direction. These research findings could lay a foundation to consider this type of salary structure for math and science teachers who are in high demand for school systems.

Instructional expenses to the classroom did not demonstrate a significant difference in ISTEP+ language arts and math scores on the 10^{th} grade assessment. Per pupil expenses did not demonstrate a significant difference in ISTEP+ language arts and math scores on the 10^{th} grade assessment. Teacher salary did not demonstrate a significant difference in ISTEP+ language arts.

The purpose of this study was to examine the school financial factors that affect and influence academic success as measured on the Indiana Statewide Test of Educational Progress (ISTEP+) for 10^{th} graders in Indiana. The researcher wanted to know if there was a relationship between the amount of allocation toward instruction and student achievement as measured by the 10^{th} grade ISTEP+. Based on the statistical data from this study, there is no significant data to suggest that providing more money to the classroom will increase academic achievement.

Recommendations for Further Study

To extend the findings of this study, the researcher would recommend the following:

1. A follow-up study should be conducted comparing financial input factors from school districts and ISTEP scores for students in all grades not just 10th grade students.
2. A follow-up study should be conducted comparing financial input factors from school districts and data for Core 40 exams for 10th grade language arts and math scores that begin in the spring of 2010.
3. A follow-up study should be conducted comparing financial input factors from school districts for a three-year period of time and make a comparison to ISTEP scores for 2008-2009.
4. A follow-up study should be conducted comparing financial input factors from school districts from urban, suburban, and rural areas and make a comparison to ISTEP scores.
5. A follow-up study should be conducted utilizing ISTEP scores comparing school districts and the financial experience of superintendents.
6. A follow-up study should be conducted utilizing ISTEP+ comparing school districts and the curriculum experience of superintendents.
7. A follow-up study should be conducted utilizing ISTEP+ comparing school districts and the number of assistant superintendents or directors that work with the superintendent.

8. A follow-up study should be conducted utilizing ISTEP+ and the overall wealth of the district as measured by the assessed valuation and the mean income of the residence of the community.

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