AN EXPLORATORY STUDY OF REFORM INITIATIVES IN RELATIVELY SMALL MISSOURI SCHOOL DISTRICTS

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By

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AN EXPLORATORY STUDY OF REFORM INITIATIVES IN

RELATIVELY SMALL MISSOURI SCHOOL DISTRICTS

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"The power of our mentors is not necessarily in the models of good teaching they gave us… but in their capacity to awaken a truth within us, a truth we can reclaim years later by recalling their impact on our lives."

Parker J. Palmer

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AN EXPLORATORY STUDY OF REFORM INITIATIVES IN RELATIVELY SMALL MISSOURI SCHOOL DISTRICTS

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ABSTRACT

The purpose of this study was to identify commonly implemented school reform initiatives in relatively small Missouri school districts and determine the degree of relationship, if any, between those commonly implemented efforts and student academic success. The population for this study consisted of superintendents from 81 school districts in the state of Missouri with student populations of 500-2000 students. Quantitative and perceptual data were collected from a single data table and analyzed to determine, collectively and by grade level (a) commonly implemented reform initiatives in the school's represented in this study; (b) the amounts of fiscal and human resources invested in the implementation of those initiatives; (c) the stages of implementation of the initiatives; (d) the perceived levels of impact of the initiatives on academic success of the students in those schools; (e) if any significant relationships existed between full years of implementation, personnel hours, dollars spent, average daily attendance, persistence to graduation, superintendent's perceived impact, percent of students passing communications arts as measured by the MAP assessment and percent of students passing mathematics as measured by the MAP assessment; (f) if those relationships were noticeably different across the major grade levels of elementary, middle and high schools.

The study identified 297 initiatives implemented in 81 participating schools districts. The ratio of fiscal investment and personnel hours committed to the implementation and support of elementary grade related reform raises questions of why reform resources, across a rather robust sample of schools, would be so disproportionate toward elementary grades. Significant correlations were found between years of full implementation and superintendent perceived impact, personnel hours and dollars spent and percent passing communication arts and percent passing mathematics. No significant correlations were found between any of the variables of years of full implementation, superintendent's perceived impact, dollars spent, personnel hours invested, average daily attendance, persistence to graduation and the percent of students passing communication arts or mathematics.

Chapter 1

Introduction

As we consider how altered school structures, increased access to technology, national standards, or other reform initiatives might improve educational outcomes, it may be helpful to bear in mind the history of educational reform as we attempt to define the purpose of education and its role in local, state and national affairs. The development of intellectually safe and respectful places, the distribution of authority and responsibility, the maintenance of high expectations and the means to attain them may serve as preparation for civic life (Rose, 2010) but it is important to remember that education is funded and regulated through numerous levels of government, directed from multiple centers of authority and subject to the unique preferences, pressures and timelines created by multiple policy decisions and applications (Cohen, 1982). No Child Left Behind may be the most publically familiar legislative effort connecting federal authority with the quality of education in the United States, but an historical review indicates that federal and state governments are not strangers to the question of educational purpose or efforts to influence its end result.

The original Department of Education was created in 1867 to collect information on schools and teaching that would help the States establish effective school systems. In 1890 the passage of the Second Morill Act gave the then-named Office of Education responsibility for administering support for the original system of land-grant colleges and universities. Vocational education came of age under the Smith-Hughes Act of 1917 which increased federal aid to schools while the 1946 George-Barden Act emphasized agricultural, industrial and home economics training for high school students. In 1944 the “GI Bill” authorized postsecondary

education assistance that would ultimately send nearly eight million World War II veterans to college.

Comprehensive federal education legislation took a significant step forward in what has been described as the beginning of federal involvement in K-12 education with the passage of the National Defense Education Act of 1958 (Zhao, 2009). The purpose of this legislation was to ensure that highly trained individuals would be available to help America compete with the Soviet Union in the scientific and technical fields following the launch of the Soviet satellite *Sputnik*.

The 1960s and 1970s witnessed the emergence of the Department's equal access mission. The passage of Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972 and Section 504 of the Rehabilitation Act of 1973 prohibited discrimination based on race, sex and disability and made civil rights enforcement a fundamental and long-lasting focus of the Department of Education. In 1965, the Elementary and Secondary Education Act (ESEA) launched a comprehensive set of programs, including Title I to support disadvantaged students in urban and rural areas. In the same year, the Higher Education Act authorized assistance for postsecondary education, including financial aid programs for needy college students.

In 1980, Congress established the Department of Education (DOE) as a Cabinet level agency. Today, the DOE operates programs that touch every area and level of education. Its official mission: to promote student achievement and preparation for global competitiveness by fostering educational excellence and ensuring equal access *(ED.gov The Federal Role in Education)*

1983 found educators, business leaders and politicians pouring over the apocalyptic statements of *A Nation at Risk* ushering in a renewed focus on educational aims and purposes as,

America's prosperity, security and civility stand threatened by a rising tide of mediocrity that threatens our very future as a Nation and a people (A Nation at Risk, 1983)

In what can arguably be termed the most comprehensive piece of federal legislation to address public education, No Child Left Behind has changed the nature of public schooling across the nation by making standardized test scores the primary measure of school quality (Ravitch, 2010). Emphasizing stronger accountability for results, greater flexibility for states, school districts, and schools in the use of federal funds; more choices for parents of children from disadvantaged backgrounds; and an emphasis on teaching methods that have been demonstrated to work, President George W. Bush (2001) stated, "These reforms express my deep belief in our public schools and their mission to build the mind and character of every child, from every background, in every part of America".

Governmental oversight of education is not the sole preserve of federal authorities. Citing the state constitution of 1875, the current Missouri Constitution stipulates that the state, in acknowledgement of the, general diffusion of knowledge and intelligence being essential to the preservation of the rights and liberties of the people, the general assembly shall establish and maintain free public schools for the gratuitous instruction of all persons in this state within ages not in excess of twenty-one years as prescribed by law. The Missouri Constitution further mandates the general assembly adequately maintain the state university and such other educational institutions as it may deem necessary and further directs the organization of a state board of education to supervise instruction.

The Missouri Department of Elementary and Secondary Education (DESE) as organized in 1974, serves as the administrative arm of the State Board of Education charged with serving educators, legislators, governmental agencies, community leaders and citizens to maintain a

strong public education system. Through its statewide school-improvement activities and regulatory functions, the Department strives to assure that all citizens have access to high-quality public education.

Large scale legislative efforts to enhance Missouri's educational effectiveness can be seen in The Excellence in Education Act of 1985 and the Outstanding Schools Act of 1993. The Excellence in Education Act of 1985 embraced all levels of education in its provisions for pupil testing, development of school district discipline codes, incentive grants to encourage school districts to initiate or adopt innovative programs and scholarships to attract top high school graduates to education. The program also included annual tuition reimbursements to educators statewide, a minimum salary for Missouri teachers, a beginning teacher assistance program and strengthened teacher preparation standards (Ruhl and Graham, 1991).

Touting the passage of the Outstanding Schools Act of 1993, Missouri Governor Mel Carnahan (1993), described the legislation as an initiative of sweeping reforms which will help our children learn more successfully and will increase the accountability of our schools to the people of Missouri. The new law focused on strengthening basic education, adopting challenging performance standards to ensure national and international competitiveness, developing curriculum frameworks, implement a new statewide assessment that will measure the degree to which students meet the performance standards, demand full accountability for results and increase school funding equity (*A Primer on the Outstanding Schools Act, 1993)*.

Even as this dissertation is being written, the national movement toward uniform standards and assessment is gaining significant support among the states and their respective departments of education. Support for national standards is not limited to educational circles. In announcing the launch of common state education standards in 2010, the National Governors

Association, in conjunction with state chiefs of education, hailed the development of Common Core State Standards as the start of the adoption and implementation by the states. Signatories supporting this development included Craig Barrett, former CEO and Chairman of the Board for Intel Corporation, Edward B. Rust Jr., Chairman and CEO, State Farm Insurance Companies, Bill Gates, Co-chair of the Bill and Melinda Gates Foundation and Vartan Gregorian, President of the Carnegie Corporation of New York.

A review of many of the reforms initiated by federal and state authorities reveals many similarities. Taken in the aggregate, the rationale for the passage of legislation slated to improve education speaks to common threads; regaining scientific and technological preeminence, promoting equal access to basic education, broadening access to higher education, raising academic performance standards and accountability, closing achievement gaps and enhancing global competitiveness.

Statement of the Problem

Education reform can be seen as a process of asking what can be accomplished and then finding the tools and talent to do get the job done (Hess, 2010). America's school system has expanded dramatically since World War II and now serves the needs of an increasingly diverse set of students. This shifting landscape has created many opportunities, but also many dilemmas spawning intense debate over how to distribute resources and design curricula to meet the needs of students from diverse backgrounds, with many different skills and varied interests. These challenges must be addressed if the United States is to design a school system that truly supports high standards and equal opportunity for all students (Berliner & Biddle, 1995). Given the composite nature of the relationship between teaching, learning and the needs of society, simple solutions are elusive. Change may be the imperative, but where to start?

Despite decades of state and federal concern and legislative action, seemingly endless rhetoric about performance, standards, accountability and competitiveness, the investment of billions of dollars in financial resources and countless hours of training, instruction and assessment dedicated to resolving an apparent crisis in American education, a critical question remains. Has any of this made a difference? More specifically, what is making a difference? A quick review of any education association catalog will reveal there is no shortage of available initiatives, programs or services that claim to raise student achievement. In holding with the basic position that schools can have a tremendous impact on student achievement if they follow the direction provided by the research (Marzano, 2003), perhaps it would be wise to take a look at a series of reforms and initiatives, currently in place, in an effort to determine if their application is impacting student academic success.

Purpose of the Study

The purpose of this study was to identify commonly implemented school reform initiatives in relatively small Missouri school districts and determine the degree of relationship between those commonly implemented efforts and student academic success. The primary method of analysis was quantitative, with survey data being used to determine, collectively and by grade level (a) commonly implemented reform initiatives in the school's represented in this study; (b) the amounts of fiscal and human resources invested in the implementation of those initiatives; (c) the stages of implementation of the initiatives; (d) the perceived levels of impact of the initiatives on academic success of the students in those schools; (e) if any significant relationships existed between full years of implementation, personnel hours, dollars spent, average daily attendance, superintendent perceived impact, percent of students passing communication arts, percent of

students passing mathematics and persistence to graduation; (f) if those relationships were noticeably different across the major grade levels of elementary, middle, and high schools?

Research Questions

Two research questions were examined during the completion of this study. The first research question was analyzed from descriptive data about the reform initiatives reported by the responding school districts. The second was analyzed using correlational relationships for those same reported initiatives.

1. Collectively and by grade levels, what were the commonly implemented reform initiatives in the school's represented in this study, what were the amounts of fiscal and human resources invested in the implementation of those initiatives, what were the stages of implementation of the initiatives, and what were the perceived levels of impact of the initiatives on academic success of the students in those schools?
2. Were there significant correlational relationships between full years of implementation, personnel hours, dollars spent, average daily attendance, superintendent perceived impact, percent of students passing communication arts, percent of students passing mathematics and persistence to graduation and were those relationships noticeably different across the major grade levels of elementary, middle, and high schools?

Null Hypotheses

The following hypotheses were tested in this study:

H_{01} (ES): There are no correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively

impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives in the elementary school setting.

H_{02} (MS) : There are no correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives in the middle school setting.

H_{03} (HS): There are no correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives implemented in the high school setting.

H_{04} (ALL): There are no correlational relationships between the study variables of years of full implementation, personnel hours, dollars spent, stage of implementation and the Superintendent's perceived level of impact of the initiatives when all of the initiatives were analyzed.

Limitations

The following are limitations of the study:

1. The findings of this study are limited to the validity and reliability of the instruments used.
2. The study took place in Missouri school districts with enrollments between 500 and 2000 students.
3. This study is subject to the restrictions normally associated with studies using survey methods, such as obtaining an adequate sample size as well as the respondents' accurate interpretation of the instrument questions (Heppner &Heppner, 2004)

Definitions

Adequate Yearly Progress: State defined expectations for growth in student achievement that is continuous and substantial, such that all students are proficient in reading and math no later than 2013-2014 (NCLB, 2002)

Annual Performance Report: Serves as the report card to the public on how well public and charter schools are meeting state standards for academic performance. The APR measures school achievement of fourteen performance standards including MAP and ACT scores, attendance, and graduation rates, advanced course and career education course enrollments and college and career placement indicators (DESE, 2011).

Missouri Assessment Program (MAP): Mandated by the Outstanding Schools Act of 1993, the MAP consists of annual standardized tests administered as content area grade level assessments in grades three through eight and as end-of-course assessments in specified content areas at the high school level. MAP scores are used to determine the degree to which Missouri students have achieved the knowledge, skills and competencies set forth by the Missouri Department of Elementary and Secondary Education and in determining adequate yearly progress under No Child Left Behind.

Reform: Those activities that alter existing practices, procedures, policies and requirements to enable schools to adapt the way they function to new circumstances, requirements and expectations (Conley, 1993; Hess, 2010).

Student Academic Success: The attainment of specified content area proficiencies as measured by standardized state assessments and appropriate levels of participation as indicated by attendance and persistence to graduation metrics.

Outline of the Study

Chapter 1 contains background information and includes a rationale for the study. Research questions, hypotheses, limitations and definitions appropriate to the study are also included in the chapter. Chapter 2 is a review of the literature relevant to educational reforms and initiatives implemented from 1950 to the present, reforms and initiatives commonly in place today and research linking educational reform to student achievement. The methods for data collection and the analysis of the data are presented in Chapter 3. Chapter 4 includes the presentation and quantitative analysis of the data. Chapter 5 includes a summary of the findings, conclusions, implications for practice and recommendations for future research.

Chapter 2

Review of Related Literature

Introduction

Ten years after the passage of No Child Left Behind, the educational performance of America's youth continues to be cause for considerable concern (Morrell and Noguera, 2010). Multitudes of articles, research findings, position papers and books lament the state of K-12 education in the United States as student performance in basic subjects like math and reading remains low even though many perceive that instruction and supervision of our students is conducted with relative effectiveness (Leana, 2011; Schmoker, 2006). International assessment results highlight worrisome rankings of American students among their international peers (Morrell and Noguera, 2010; Tucker, 2011; U.S. Department of Education, 2006). Roughly three in ten public school students fail to complete high school and graduation rates of some minorities are at or near 50 percent (The Editorial Projects in Education Research Center, 2010). After billions of dollars in expenditures and years of effort to reform instruction, structure, governance, assessment and teacher development, why do the problems of improving education appear so intractable (Hill, 2007; Loveless, 2010)?

Charles M. Payne (2008) notes that while individuals may come to be identified with an idea, truly important ideas generally come about as the result of a social process. Elmore (2004) inquires why policymakers insist on thinking about educational reform in simplistic, mechanical ways when addressing an environment characterized by multiple organizational, political and human relations dimensions. Frederick Hess (2010) notes that while the debate on what students should know, which students should learn it and how such content should be taught has raged since the time of Plato, much of Western history has considered basic literacy and numeracy

sufficient. Continuing, Hess posits that even as literacy has become nearly universal, the notion of what it entails has become increasingly ambitious noting that prior to the mid-twentieth century, the concept that schools could, or were obligated, to educate all students to high levels was actually dismissed by most educational leaders. While Sarason (1990) comments that what we accept as reform is based on acceptance of an educational system as it has been and is, Hess (2010) notes that today's students are expected to master content material to an unprecedented degree as reform efforts attempt to retool an educational system built to provide universal access as new demands on the system call for universal excellence. The result has been a process fraught with false starts, misfires and enough frustration to call into question whether any of these efforts truly make a difference.

Although many consider *A Nation at Risk*, with its alarming conclusions and blunt language, as the starting gun for modern education reform (Hess, 2010; Ravitch, 2010; Zhao, 2009; Finn, 2008; Berliner and Biddle, 1995), Hutchison and Schagen (2007) surmise that up to and immediately after World War II, Western society was hierarchical, rigid and unchanging. Career opportunities were limited. With the accelerating expansion of knowledge and the corresponding increase in opportunities after the war, the nature of employment changed dramatically. In response, the focus of education shifted from basic literacy and numeracy to ensuring that students acquired the requisite skills necessary to compete in a world dominated by globalization, outsourcing and computerization. More specifically, Tucker (2011) asserts that in developed countries, it has become more important to analyze a situation and specify solutions rather than carry out the action and that exponential growth now stipulates that only countries with the highest skill levels and creativity will maintain the highest wages forcing those nations

to abandon the idea that only a small group of citizens need to have high skills and creative capacities.

Educational reforms of the last half century, and the resultant efforts to raise student performance and narrow domestic and international achievement gaps, in the hopes of improving international economic competitiveness, highlight the steadily increasing role and complexity of federal and state policy (Zhao, 2009; New York State Education Department, 2009). While *A Nation at Risk* (1983) and *No Child Left Behind* (2002) appear to be the seminal hallmarks of modern educational reform, they may be described more accurately as culminations of an ongoing process unique to their respective moments in time.

This review of literature will identify the aims, purposes and language of key federal and state policy and reform efforts spanning the time frame from 1950 through 2010. In addition, educational reform literature will be reviewed as Missouri state level reforms implemented since 1980 are examined. Selected reforms, currently in place in Missouri schools, with K-12 populations of between 500 and 2000 students, will be reviewed relative to origins and intents.

Federal and State Policy and Reform

Prior to the 1980's, public schools were among the most respected institutions of U.S society. In the decades following, significant changes in the economy, demographic trends and ideological shifts created an environment where value laden decisions influenced the development of educational policy (Fowler, 2004). During the Reagan and Bush administrations, the assumption that schools were getting better with each generation gave way to the common assertion that public education was in decline (ANAR, 1983; Tyack and Cuban 1995; Berliner and Biddle, 1995; Ravitch, 2010) even as the general focus of education reform policies and the

shift from equality concerns to issues of excellence, accountability and choice (Boyd and Kerchner, 1988; Ornstein, 1988; Chubb and Moe, 2001).

In issuing the opinion of the Supreme Court in Brown vs. The Board of Education (1954), Chief Justice Earl Warren defined education as the most important function of state and local government. Fifty-six years later, President Barack Obama, in the preface to *A Blueprint for Reform: The Reauthorization of the Elementary and Secondary Education Act* (2010) notes that a world-class education is a prerequisite for individual and national success. Lamenting that America was once the best educated nation in the world, Obama warns that countries that out-educate the United States today will out-compete the nation tomorrow, holding that a re-envisioned federal role in education will result in a strengthened American public education system. The evolution from equal access, civic training and cultural awareness to college and career preparation, international competitiveness and world-class achievement is traced through this review of federal and state legislation and reform policy.

National Defense and Education Act (NDEA), 1958

Federal legislation through the early 1950's focused on the concept of *impact aid.* Federal resources were committed to construction of school facilities, studying the adequacy of state and local resources for school facilities (P.L.81-815), rapidly growing average daily attendance and the need to provide financial assistance to local educational agencies affected by Federal activities (P.L. 81 – 874). The successful launch of Sputnik I on October 4, 1957 birthed the "Space Age" and spawned a state of collective turmoil and soul searching as America struggled understand the meaning of the events of the day (Launius, 2007).

Among the many responses to this perceived threat to national security was the signing of the National Defense and Education Act of 1958. Congress, in stating that the security of the

Nation required the fullest development of the mental resources and technical skills of it young men and women, committed to providing substantial assistance in various forms to individuals, and to the States and their subdivisions, to insure trained manpower of sufficient quality and quantity to meet the national defense needs of the United States. Section 102 of the Act stated that nothing contained in the Act was to be construed to authorize any department, agency, officer or employee of the United States to exercise any direction, supervision, or control over the curriculum, program of instruction, administration, or personnel of any educational institution or school system. In signing the Bill into law, President Dwight D. Eisenhower stated that the purpose of the legislation was to provide emergency assistance to bring American education to levels consistent with the needs of society (1958).

The provisions of the various titles of the NDEA were as follows:

- Title II. Loans to Student in Institutions of Higher Education
- Title III. Financial Assistance for Strengthening Science, Mathematics and Modern Foreign Language Instruction
- Title IV. National Defense Fellowships
- Title V. Guidance, Counseling and Testing; Identification and Encouragement of Able Students *(P.L. 85-864, 1958, IDA Document D-3006, 2006)*

Reiterating the importance of this policy development, Eisenhower further noted in his State of the Union Address of 1959,

> *Federal action can do only a part of the job. In both education and research, redoubled exertions will be necessary on the part of all Americans if we are to rise to the demands of our times.*

It is within the context of this legislative action, that the combined themes of national defense and international preeminence emerge as durable reasons to expand the federal role in education. Targeting improvement of the nation's research and educational facilities, fostering technical development and trying to improve student achievement processes that had been moving forward prior to the Sputnik launch now enjoyed a bolstered level of political support (New York State Education Department, 2006). Kaestle (2007) notes that the NDEA was not cooked up overnight. Prior to Sputnik, Elliot Richardson, an assistant secretary for legislation in the U.S. Department of Health, Education and Welfare had been quietly directing a Whitehouse task force on higher education. When passed, the NDEA not only pushed federal strategy toward categorical funding of education and away from general aid, it became the first in a series of postwar categorical aid bills that expanded the federal role in education during the 1960s and 1970s.

Reforms under the NDEA enhanced content and instruction of courses in math, science and foreign language based on the notion that student should be classified by measured ability and curricula should be adjusted to meet individual student needs (Gamson, 2007).

Civil Rights Act, 1964

Citing the disparity between the nation's founding principles and the reality of segregation in the United States, President Lyndon Johnson acknowledged the bipartisan support and thoughtful concurrence of tens of thousands of civic and religious leaders across the country in crafting and passing the Civil Rights Act of 1964 (Johnson,1964). Titles IV and VI had significant impacts on the formulation of Federal school racial policy and provided legislative authority for actions of the Executive Branch's implementation of that policy. Key components of Titles IV and VI of the Act were summarized by the Department of Health, Education and

Welfare (HEW) stipulating that the regulation prohibits discriminatory action on the grounds of race, color, or national origin by recipients of Federal financial assistance. Discriminatory action under HEW definition came to include denial of services, provision of services in a different manner, segregation in the provision of services or otherwise offering services in a manner which has the effect of defeating the purpose to the program.

Section 407 of Title IV also outlines the means by which claims of discrimination would be adjudicated and expressly forbid the application of the law to empower any official or court of the United States to issue any order seeking to achieve a racial balance in any school by requiring the transportation of pupils or students from one school to another in order to achieve racial balance or enlarge the power of the court to insure compliance with constitutional standards.

As the federal aid lobby utilized national security as the vehicle to expand federal influence in education, the civil unrest of the mid-1960s strained the nation's social fabric as the larger issues of race, violence, assassination and war pushed educational excellence aside and concern for the disadvantaged took center stage (Ravitch, 2001).

Elementary and Secondary Education Act (ESEA), 1965

President Johnson (1965) hailed the Elementary and Secondary Education Act of 1965 as the bridge between helplessness and hope for 5 million educationally deprived children. While technically amending P.L. 81-874 to increase the focus on the needs of the nation's poorest students, Title I of the ESEA aimed to improve educational opportunity and educational outcomes for disadvantaged children (NYSED, 2006).

Title I directed financial assistance to local educational agencies (LEA) in support of the requirements of meeting the special educational needs of low-income families. Title I not only

acknowledged the need for financial assistance, it further recognized the impact that concentrations of low-income families have on the ability of local educational agencies to support adequate educational programs. Funding under Title I supported the expansion and improvement of educational programs serving the needs of educationally deprived students. Distribution of these funds was calculated on the basis of average pupil expenditures, low income factors and statewide aggregate per pupil expenditures. Programs and projects developed under Title I were required to meet the needs of educationally deprived children and were expected to be of sufficient size, scope and quality to provide a reasonable promise of substantial progress. Expectations of meeting this intent were further emphasized by the establishment of the National Advisory Council on the Education of Disadvantaged Children, established April 11, 1965, the Council reviewed the administration and operation of the ESEA including its effectiveness in improving the educational achievement of educationally deprived students through compensatory education programs (Nixon Presidential Library, 2011).

Title II under the ESEA sought to improve the availability of library resources, textbooks and other instructional resources. Funding under Title II was distributed as each state's proportion of students relative to national enrollment figures. Financial resources were made available to public and private schools. Under Title II, each state receiving federal funds was required to establish a plan which designated the agency responsible for administration of the State plan, set forth a program to govern the allocation of grant funding received by the State, established the criteria used to select library and other instructional materials, develop a proportional distribution of grant proceeds and set forth policies and procedures intended to assure that funds distributed under the ESEA were properly distributed and were used to supplement rather than supplant state and local financial resources.

Title III focused on supplemental educational centers and services. Under this section of the law, grants were provided to stimulate and assist in the provision of vitally needed educational services not available in sufficient quantity or quality and to support the development of exemplary programs and services to serve as models for regular school programs.

Title IV authorized the Commissioner of Education to make available grants to colleges and universities and other public or private agencies, institutions and organizations and to individuals, for research, surveys and demonstrations in the field of education, and for the dissemination of information derived from educational research. In addition, the construction of regional facilities for research and related purposes was authorized.

Title V authorized appropriations to stimulate and assist States in strengthening the leadership resources of their State educational agencies and to assist those agencies in the establishment and improvement of programs to identify and meet the educational needs of the States. This was to be accomplished through a wide variety of means intended to facilitate the collection, analysis and dissemination of research data for the purpose of enhancing teacher training, promoting competency of individuals serving at the State and local levels and providing various agencies with the consultative and technical assistance and services relating to academic subjects and specific aspects of education from education of the handicapped to administration.

Title VI is reserved for the definition of terms in Titles II through V and made no stipulations relative to funding, assurances, programs or services. The final section (604) affirms that the Act does not authorize any federal direction, supervision, or control over curriculum, instruction, administration or personnel of any educational institution or school system or over the selection of instructional resources or materials.

In the ESEA, federal emphasis on the broad social purpose of educational progress and the idea of an omnibus education bill and concurrent federal financial support came to full flower and has remained a central feature of federal education policy ever since (Hanna, 2005; Kaestle, 2007; Ravitch, 2001). In the years following the passage of ESEA, local accountability would be measured in terms of student achievement as the federal role in setting national education policy became firmly cemented through the infusion of sustained categorical federal aid in support of national policy and priorities (Murphy, 1971; Sunderman, 2008; NYSED, 2006).

P.L. 94-142, 1975

The 1970's witnessed a steadily growing federal role in education. In passing a series of amendments to the ESEA, overall federal authorizations for education increased 23percent from $2.8 billion in 1974 to $3.5 billion in 1975. In all, ESEA amendments in 1974 allocated more than $12 billion over four years to categorical programs in public schools (NYSED, 2006). By 1974, federal education spending had grown from $816 million in 1962 to $5.7 billion (GPO, 2006).

Noting that funding levels proposed by the Education for All Handicapped Children Act of 1975 were not possible if Federal expenditures were to be brought under control, President Gerald Ford signed P.L. 94 – 142 ushering in an era of, in his own words, good intentions, falsely raised expectations and unrealistic funding authorizations (Woolley and Peters, 2010).

The new law dramatically increased the federal commitment to categorical aid to special education. (NYSED, 2006). In recognizing that half of the Nation's handicapped children were not receiving appropriate educational services and acknowledging that one million handicapped students were excluded from receiving educational services, the Act moved forward on the

premise that given appropriate funding, state and local education agencies could and would provide effective special education related services.

Citing the national interest in justifying Federal assistance to state and local education agencies in order to guarantee equal protection of the law, the purpose of the legislation was to assure that all handicapped students received a *free and appropriate public education* (FAPE) through the appropriate application of effective programs and services. *Special education* encompassed specially designed instruction to meet the unique needs of a handicapped child. *Related services* stipulated transportation, developmental, corrective and other supportive services as may be required to assist a handicapped child to benefit from special education. The term *individualized education program* defines the written statement for each handicapped child developed in any meeting by a representative of the local educational agency. Such a plan is to include: the present level of performance, annual goals, a statement of specific educational services to be provided, projected date for initiation and anticipated duration of services, and the objective criteria and evaluation procedures and schedules for determining whether instructional objectives are being achieved. The *excess cost*, defined as those costs in excess of the average annual per student expenditure in a local educational agency during the preceding school year were to be covered by federal revenues.

In addition, parents were guaranteed *procedural safeguards* with respect to the provision of FAPE. The procedures included: the opportunity to review all relevant records with respect to the identification, evaluation and educational placement of the child, the right to an independent educational evaluation of the child, written prior notice sent to parents or guardians in the event that the LEA initiated or refused to initiate a change in the identification, evaluation or placement

of the child. Whenever feasible, parents or guardians were to be informed in their native language.

The law also assured an available course of action to present complaints with respect to any matter relating to the identification, evaluation or educational placement of the child, or the provision of FAPE to such child and further conferred the right to an impartial due process hearing, independent review, representation by an attorney or individual with special knowledge or training with respect to the problems of the handicapped child. In the event that the hearing failed to provide an acceptable result, the right to pursue civil action was preserved. The law further stipulated that during the course of any such proceedings, unless otherwise agreed upon by the educational agency and parents or guardians, the child would remain in the current educational placement.

Ultimately, the Act defined "children with specific learning disabilities" as those children who have a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. Such terms did not include children who had learning problems which were primarily the result of visual, hearing, or motor handicaps, of mental retardation, of emotional disturbance, or environmental, cultural, or economic disadvantage.

State allocations under P.L. 94 -142 were calculated on the basis of the number of handicapped children aged three to twenty-one inclusive multiplied by five per cent for the fiscal year ending September 30, 1978. Fiscal year 1979 would be calculated at 10 percent while successive years, through 1982 would realize annual increases of 10 percent until meeting and then maintaining the 40 percent threshold. Such dramatic increases in federal funding prompted

President Ford to state that while no one will disagree with the objective of the bill, educating all handicapped children, the key question was whether the bill will actually accomplish that objective (1975).

The previously noted legislative reforms provide a look at the incremental, yet steady growth of federal involvement in education. As of 1975, large scale state efforts are not yet a significant influence on the educational experience of children in public schools. Moving away from impact aid legislation in the early 1950's to a broad national scope focused on maintaining the Nation's technical and military superiority the NDEA (1958) represents the quickening of a reform drumbeat soon to be followed by wider and larger social and political concerns. In ruling that "separate but equal" had little bearing on equal and was unconstitutional to boot, Brown v. Board of Education paved the way for the broader legislative action of the Civil Rights Act of 1965. Equal access, national progress and the elimination of racial discrimination went hand in hand with the distribution of federal monetary resources. The ESEA of 1965 moved beyond simple access and sought to address the needs of educationally deprived children through improved opportunity and an emphasis on positive educational outcomes. By 1975, this concern was extended to the plight of handicapped students. P.L. 94 – 142 established the structural requirements and proposed a financial mechanism meant to guarantee equal protection under the law.

A Nation at Risk

In 1983, what nearly slipped into obscurity as simply another commission report became a significant source of political capital (Holton, 2003; Zhao, 2009). In August of 1981, Secretary of Education, T.H. Bell created the National Commission on Excellence in Education and

directed it to examine the quality of education in the United States and to make a report to the Nation and to him within eighteen months of its first meeting.

On April 26, 1983 David Pierpoint Gardner, Chairman of the National Commission on Excellence in Education presented the Commission's final report to Secretary of Education T. H. Bell. In his letter of transmittal (National Commission on Excellence in Education, 1983), Gardner stated that the Commission deeply believed the problems that had been discerned could be understood and corrected if the country and those having a public responsibility in the matter cared enough and had the courage to do what was required.

A Nation at Risk: The Imperative for Educational Reform, began by stating:

> All, regardless of race or class or economic status, are entitled to a fair chance and to the tools for developing their individual powers of mind and spirit to the utmost.

Claiming America was losing its industrial and technical preeminence, by squandering the gains in student achievement made in the wake of the Sputnik challenge, through the acceptance of a rising tide of mediocrity, the Commission posited the notion that the Nation had committed an act of unthinking, unilateral educational disarmament. The Commission went further, accusing society and its educational institutions of having lost sight of the basic purposes of school and of the high expectations and disciplined effort needed to attain them.

Ample documentation was presented as a measure of the risk caused by the deteriorating quality of education in the United States.

- International comparisons that demonstrated American students were losing ground by not finishing first or second in nineteen academic tests. When compared to other industrialized nations, they were last seven times.
- Some 23 million Americans were functionally illiterate.

- SAT scores demonstrated a virtually unbroken decline from 1963 to 1980.
- Steady declines in the science achievement scores of U.S. students were evident on national assessments of science in 1969, 1973 and 1977.
- Remedial math enrollments in public four year colleges increased by 72 percent between 1975 and 1980.
- The Department of the Navy reported to the Commission that one-quarter of its recent recruits could not read at the minimal level required to understand written safety instructions.

Claiming that the commitment to life-long learning was paramount to the Nation's ability to thrive and prosper, the Commission sought to clarify its comments by defining "excellence in education", the importance of a "learning society" and identified the tools available for such a transformation.

In defining "excellence" in education, the Commission noted that achieving excellence required a three tiered focus and explained what excellence meant at each identified level. For the individual learner, excellence meant performing on the boundary of individual ability in ways that tested and pushed back personal limits. An excellent school or college set high expectations and goals for all learners, then tries, in every way possible, to help students reach them. Excellence as a society, under the report's definition, came to characterize those constituencies that adopt the tenets of individual and school excellence in preparation through the education and skill of its people to respond to the challenges of a rapidly changing world.

Noting that in a world of ever-accelerating competition and changing workplace conditions, danger and opportunity required educational reform focused on creating a learning society, the Commission advanced the concept that the foundation of such a society was the

commitment to a set of values and a system of education that affords individuals the opportunity to stretch their minds to full capacity while emphasizing the dual aspects of educational application that made career advancement possible and added value to the general quality of life.

Convinced that the raw materials for such reform were readily at hand and awaiting effective leadership to mobilize their capacity to bring about meaningful progress, the Commission expressed its opinion that through the personal desires and commitment of students, parents and teachers, community cooperation and the proper combination of research, policy making and fiscal resources, declines in educational performance and disturbing inadequacies in the conduct of the educational process, could be reversed. In seeking to identify an appropriate course of action, four aspects were characterized as the keys to success. The four aspects were content, expectations, time and teaching.

Relative to content, the report concluded that secondary school curriculum had been homogenized, diluted and diffused to the point that they no longer had a central purpose (1983). It was noted that while advanced math, foreign language and geography were widely available, significant portions of the student population declined to select such academic challenges and that 25 percent of credits earned by general track high school students were in remedial of non-academic classes.

Expectations were identified as being expressed to students through grades, graduation requirements, the presence of absence of rigorous examinations, college admissions requirements and the difficulty of subject matter. Deficiencies in each of those areas were confirmed by international comparisons in student academic requirements, graduation requirements at the high school and college level, acceptance of minimum competencies, declining college admission

standards, lack of educator involvement in textbook development, and declining expenditures in the acquisition of textbooks and instructional materials.

Evidence presented to the Commission highlighted several trends in the use of time in American schools. The Commission's analysis concluded that American students, in comparison to other nations, spent less time on school work, that time spent in the classroom and on homework was often used ineffectively and that schools were not doing enough to help students develop study skills required to use their time wisely or develop the willingness to spend more time on their work.

Finally, in regard to teaching, the conclusion of the Commission's report stated that not only was there a shortage of teachers, particularly in math and science, but academically able students were not being attracted to teaching. For those entering the profession, many teacher preparation programs were found to be heavy on methods and short on subject matter knowledge development. Compounding the issue further was the nature of teacher's professional life as compensation and the opportunity to participate in critical educational decisions were not sufficient to warrant professional satisfaction.

In prefacing its recommendations, the Commission stated its belief that everyone can learn, that everyone is born with an urge to learn which can be nurtured, that a solid high school education is within the reach of virtually all and that life-long learning will equip people with the skills required for new careers and citizenship. The recommendations were stated as follows:

- Content: We recommend that State and local high school graduation requirements be strengthened and that, at a minimum, all students seeking a diploma be required to lay the foundations in the Five New Basics by taking the following curriculum during their 4 years of high school: (a) 4 years of English; (b) 3 years of mathematics; (c) 3 years of

science; (d) 3 years of social studies; and (e) one-half year of computer science. For those that are college-bound, 2 years of foreign language in high school are strongly recommended in addition to those taken earlier.

- Standards and Expectations: We recommend that schools, colleges, and universities adopt more rigorous and measurable standards, and higher expectations, for academic performance and student conduct, and that 4-year colleges and universities raise their requirements for admission, This will help student do their best educationally with challenging materials in an environment that supports learning and authentic accomplishment.
- Time: We recommend that significantly more time be devoted to learning the New Basics. This will require more effective use of the existing school day, a longer school day, or a lengthened school year.
- Teaching: This recommendation consists of seven parts. Each is intended to improve the preparation of teachers or to make teaching a more rewarding and respected profession. Each of the seven stands on its own and should not be considered solely as an implementing recommendation. The seven areas in which the recommendations were to be implemented included: 1. Improved teacher preparation programs. 2. Salary improvements. 3. Extended teacher contracts (11 months). 4. Career ladders to distinguish between beginning, experienced and master teachers. 5. Application of non-school personnel resources to remediate teacher shortages in the areas of science and math. 6. Incentives to attract outstanding students to the teaching profession. 7. Master teacher involvement in designing teacher preparation programs

- Leadership and Fiscal Support; We recommend that citizens across the Nation hold educators and elected officials responsible for providing the leadership necessary to achieve these reforms, and that citizens provide the fiscal support and stability to bring about the reforms we propose. In making this recommendation it is notable that the Commission charged the Federal Government with the primary responsibility to identify the national interest in education and that it should fund and support efforts to protect and promote that interest.

ANAR is seen by some as the most important educational document of the 20th century by laying the foundation for the reform of American education for decades to come and pushing American education further down the path of governmental control (Zhao, 2009). It was not the sole commentary on the state of education in America. The 1980's ushered in an explosion of independently generated books and commission reports *all* critical of education (Berliner and Biddle, 1995). Many of these works expressed legitimate concerns. ANAR provided a necessary and comprehensive framework for the reassessment of the role of the federal government in education (Wong and Nicotera, 2004). ANAR and its cohort of analyses also reflected the growing ideological influence as educational shortcomings became linked to the previous decade's economic stagnation, growing import pressures and the perceived deindustrialization of America (Berliner and Biddle, 1995, Harris, Handel, and Mishel, 2004).

Prior to the publication of ANAR, state educational action appears to be limited. A longitudinal review of the education related topics, discussed at the winter and annual meetings of the National Governors Association reflects the changing nature of educational reform.

- 1950 – Facility construction, rising enrollments and limited classroom space

- 1960 – Soviet educational superiority, desegregation of public schools and civil rights
- 1970 – Federal funding of education, property taxes as educational funding mechanism, affirmative action and college admissions quotas
- 1980 – Education for economic growth, redesigning the education system, removing barriers to educational achievement, school choice, accountability and the national education summit
- 1990 – National educational goals, state strategies for achieving national goals, school to work, educational standards, expansion of NAEP, clarifying state and federal roles in education,
- 2000 – Turning around low performing schools, accountability, providing employers with an ample supply of skilled workers, coordination and alignment of early childhood and school readiness, redesigning the American high school and improved alignment of federal and state education laws (Source: NGA Meeting Summaries)

Excellence in Education Act (Missouri) 1985

In the wake of ANAR, the Missouri legislature took action to improve student achievement, enhance the teaching profession and to encourage innovation by local schools (Bartman, 1988). Citing its efforts as the means to encourage and promote quality in schools, the Missouri legislature enacted the Excellence in Education Act of 1985. In doing so, the legislature noted that there have been few times in the history of the state or the country when a greater critical interest in the public schools was evident (Excellence in Education Act, 1985). Ironically, the push for educational reform, while fomented by ANAR, came at a time when federal support

for schools, as a percentage of the budget, declined to modern day lows (Bliss, 1986). Slated for implementation by 1987, the Excellence in Education Act (EEA) addressed multiple areas of reform (Ruhl and Graham, 1991).

The Act required the Department of Elementary and Secondary Education (DESE) to undertake a program of pupil testing as a means of informing the General Assembly, the Department, local school districts and the public how well students had mastered specific skills and knowledge. To that end, core competencies and key skills in seven subject areas were developed for grades 2-10. Key skills were distributed to all school districts in the state in early September 1986. Additional steps were taken to develop criterion referenced tests to measure student mastery of key skills for grades 2 -10. In April and May of 1986 the Missouri Mastery and Achievement Tests (MMAT) were field tested in grades 3, 6, 8, and 10. MMAT's for grades 2, 4, 5, 7, and 9 were field tested in 1987. Development of criterion referenced tests for preschool, kindergarten and first grade proceeded during the 1988-89 school year. By 1990, a complete battery of tests spanning preschool to tenth grade was available.

Discipline policy reforms were also mandated by the Act. Each local school board was directed to develop a disciplinary policy. It was stipulated that the policy include the consequences for failure to obey the standards of conduct and an explanation of the importance of the standards to the maintenance of a school atmosphere conducive to learning. According to the September 1988 status report on implementation of the Act's provisions (Bartmann, 1988), all 536 school district were compliant in meeting this requirement by June 30, 1986.

Section 6 of the Act, provided competitive grants intended to encourage exemplary and innovative programs designed to improve instruction from pre-K through grade twelve. All programs approved were to hold good promise for improvement of instruction and could be used

to develop, adapt, adopt or expand innovative programs. Grants were available to individual teachers, groups of teachers, schools or districts and could be extended for a period not to exceed three years.

Section 9 of the Act provided scholarships to qualified students pursuing a teaching degree. Known as Teacher Education Scholarships, the intent was to attract into the teaching profession individuals possessing the personal and professional skills, abilities, and interests necessary for successful teaching. The program provided non-renewable scholarships to top ranking high school seniors and college students interested in pursuing a teaching career. Recipients of the scholarship were required to teach in Missouri for five years. Failure to do so resulted in the scholarship converting to a student loan requiring repayment.

Minimum salary provisions of Section 7 were designed to raise beginning teacher salaries over a four year period. Beginning with fiscal year 1987, minimum beginning teacher salaries were established at $15,000 and increased in $1,000 increments in each of the proceeding years until reaching a minimum level of $18,000.

In establishing RSMo Sections 168.400 and 168.410, efforts under this legislation looked to enhance the professional development of the state's teachers and administrators by establishing requirements under pre-service teacher programs, beginning and practicing teacher assistance, administrator assessment, Leadership Academy activities, tuition reimbursement and performance based evaluation of district superintendents.

Pre-service teacher programs established standards for an entry level test that included an examination of basic oral and written communication skills and mathematic skills. Prospective teachers, graduating in from college in 1990, were required to meet exit assessment requirements prior to certification. The requirements included written testing, interviews, grade point average

reviews and other evaluative techniques. A Teacher Testing Committee, composed of DESE staff and members of the Educational Conference, recommended and the State Board of Education approved, the criterion referenced College Base Academic Subjects Examination (C-BASE), developed at the University of Missouri-Columbia, as the entry level examination. Potential conflicts with legislation requiring prospective secondary teachers to pass a nationally available subject matter assessment as stipulated in House Bill 985, Section 168.033 delayed implementation of exit level examinations. Beginning and practicing teacher assistance programs, under EEA, required each school district to provide a plan of professional development for the first two years of teaching, establish a professional development committee and to have programs of professional development and improvement of experienced teachers.

Administrator assessment centers were established to assure that competent people were certificateded for leadership in Missouri schools by assessing prospective administrators at all levels prior to granting administrative certification. Following the National Association of Secondary School Principals (NASSP) model of assessment, four assessment centers were established for this purpose. To further support leadership development, the state's Leadership Academy was established to improve instruction in Missouri schools by providing opportunities for principals, superintendents and other school leaders to pursue professional growth and to provide networking opportunities and collegial support in anticipation of the evolving nature of school leadership.

Tuition reimbursements provided under the Act encouraged educators to take courses in their respective subject areas. The program reimbursed teachers for a maximum of three credit hours in the areas of their current certification provided they were employed as a teacher in that discipline. All courses were to be taken from in-state institutions.

Superintendent performance based evaluation extended the process of performance based evaluation of school personnel to school administrators as a means of emphasizing the skills identified with teaching or administration. An advisory committee presented and obtained State Board of Education approval of principal and superintendent evaluation guidelines in November of 1985 and July 1986 respectively. Four performance areas were identified for principals. These included instructional leadership, school management, interpersonal relationships and professional responsibilities. Superintendent performance areas encompassed educational leadership, district management, professional relationships and professional responsibilities.

In creating what has been called the most controversial and expensive feature of the 1985 legislative effort (Bartmann, 1988; Ruhl, Johnson, & Steele, 1990), the Missouri Career Development and Teacher Excellence Plan, also known as Career Ladder, launched a program designed to recognize teaching excellence, promote teacher satisfaction and enhance student performance. As part of this plan, teachers moved through a three tiered progression with each stage requiring a greater degree of teaching competence and student involvement while increasing professional growth and collegial responsibilities.

Noting the lack of state educational reform action prior to 1983, one University of Missouri professor commented that everybody woke up in 1983 when the government took seriously the notion of having to step into education in a big way. In describing the Excellence in Education Act as an interesting and comprehensive piece of legislation, Valentine has suggested that the act was written as a wish list assuming that maybe half of it would actually be funded. When it passed the legislature, largely intact, DESE had to try and figure out how to staff and implement such a massive set of changes (J.W. Valentine personal communication. July 25, 2010).

Missouri Outstanding Schools Act, 1993

Embracing several of the tasks identified at the National Governors Association August 1985 meeting, a second initiative to create first-rate schools emerged from the Missouri legislature in 1993. The Outstanding Schools Act of 1993 (OSA), initiated sweeping school reforms that promised to help students learn more successfully, increase school accountability and increase financial equity through a new funding formula (Carnahan, 1993).

On the issue of financial equity, Judge Byron Kinder (1993) ruled that Missouri's educational funding system failed to, "…provide an equal opportunity for each Missouri child as guaranteed by the Missouri Constitution" (p.2). Consequently, the OSA included a funding formula designed to improve school finance equity by setting a minimum operation tax rate to support poorer school districts and by using a guaranteed tax base to calculate a district's entitlement (Ko, 2007). As noted in *A Primer to the Outstanding Schools Act* (1993), while the new law increased investment in Missouri public education by over $360 million, the impact of the additional funding also changed the manner in which the state carried out its responsibilities for education by developing new approaches intended to be more in tune with the social, economic and technological challenges of the 21st century.

In supporting the belief that of all the factors which contribute to the success or failure of a state, none is more critical than the availability of a well educated workforce (Carnahan, 1993), the OSA established a multi-faceted reform agenda. Recognizing the ambitious nature and variety of the Act's reform initiatives, the Missouri Department of Elementary and Secondary Education (DESE) submitted a report in September of 1994 noting that some of the programs would take years to implement while others would be "on-line" for the 1994-95 school year.

In January of 1996, the State Board of Education approved seventy-three standards intended to define the knowledge, skills and competencies that all Missouri high school graduates were expected to attain. The Show-Me Standards (1996) were built around knowledge standards in six content areas, communication arts, math, science, social studies, fine arts and health/physical education. These standards were established to facilitate the accomplishment of four goals in which students in Missouri public schools would acquire the knowledge and skills to gather, analyze and apply ideas, recognize and solve problems, communicate effectively within and beyond the classroom and make decisions and act as responsible citizens of society.

Curriculum frameworks were developed to guide school district efforts in writing curriculum aligned with the Show-Me Standards, however, it was stipulated that such frameworks were to serve as guides and were not mandates. Finally, as a means of measuring student achievement, relative to the new standards the Missouri Assessment Project (MAP), the State Board of Education approved a five tiered scale of achievement levels used to classify student performance on the annually administered MAP assessment.

Professional development for new and veteran teachers received increased financial support as districts across the state were required to spend, a minimum of one percent of their state formula payments under the newly approved state funding formula. In the year following passage of the OSA, programs for at-risk students received funding totaling approximately $73 million as schools were allowed great flexibility in expanding dropout prevention and develop services to prevent and address academic problems and special student needs.

Programs intended to provide a direct student benefit were part of the OSA. Early childhood education received additional funding, directed through Parents as Teachers (PAT). This action enabled school districts to provide expanded screening for pre-school age children in

an effort to identify potential developmental delays. At the other end of the student age spectrum, A+ School Grants created financial support for districts in their efforts to successfully complete a three year improvement project aimed at reducing dropout rates, revamping curriculum and providing career pathways for all students. Graduates of A+ designated schools qualified for state paid assistance to attend any community college or technical school in the state.

Efforts to enhance the availability of technology to Missouri's students were bolstered by the awarding of technology grants to every eligible school district. The grants supported the construction of school based technology networks and provided the hardware, software, connectivity and training necessary to make technology an integral part of each student's learning experience.

Other areas to receive increased funding under the OSA included class size reduction efforts, 50/50 matching grants were awarded to upgrade vocational/technical education programs and equipment, the New Schools Pilot Project funded innovative and locally designed school improvement projects, full day kindergarten received full funding, while the new foundation formula included incentives for expanded summer school programs that placed more emphasis on enhanced learning opportunities as opposed to remediation (OSA, 1993; DESE, 1993; DESE, 1997).

Goals 2000: Educate America Act

Building on the nascent America 2000 proposal developed during the Bush administration and several programs related to programs and ideas articulated by the National Education Goals Panel (NYSED, 2009), President Bill Clinton signed the Goals 2000: Educate America Act on March 31, 1994. In doing so, Congress and the White House codified Clinton's comments as Governor of Arkansas, and co-chair of the Education Summit of 1989 that federal

and state efforts to develop a set of national standards would guarantee an American system of education second to none (Vinovskis, 1999).

The authorization of Goals 2000 was based on five fundamental principles: 1) all students can learn; 2) lasting improvements depend on school-based leadership; 3) simultaneous top-down and bottom-up reform is necessary; 4) strategies must be locally developed, comprehensive and coordinated and 5) the community must be involved in developing strategies for system-wide improvement (United States Department of Education, 1998). These five principles coalesced into eight national education goals addressing school readiness, school completion, student academic achievement, leadership in math and science, adult literacy, safe and drug free schools, teacher professional development and parental participation (Paris, 1994; Hoff 2001)

Perspectives on the purpose of the legislation varied. Paris (1994) notes that Goals 2000 established a framework in which to identify world-class academic standards, to measure student progress and to provide support for students in meeting those standards. In encouraging Congress to pass the legislation, President Bill Clinton posited that the Goals 2000 proposal would empower individual school districts to experiment with ideas like privately operated charter schools or increased school choice. Stating that districts could do whatever they wished as long as students learned what they needed to know to compete and win in the global economy (Wooley and Peters, 2010). A report by the Planning and Evaluation Service (PES) notes that the enactment of Goals 2000 brought important changes in the federal role in elementary and secondary education as categorical programs were redesigned to provide more flexible support for educational improvement in a framework of challenging state standards, assessment aligned

with those standards and capacity building through sustained professional development in core academic subjects (2000).

The focus of the Act was apparent in the enumeration of eight national education goals. As stated in Section 102: By the year 2000 -

1. All children in America will start school ready to learn.
2. The high school graduation rate will increase to at least 90 percent.
3. All students will leave grades 4, 8, and 12 having demonstrated competency over challenging subject matter including English, mathematics, science, foreign languages, civics and government, economics, the arts and history and geography, and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning and productive employment in our nation's modern economy.
4. United States students will be first in the world in mathematics and science achievement.
5. Every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.
6. Every school in the United States will be free of drugs, violence and the unauthorized presence of firearms and alcohol and will offer a disciplined environment conducive to learning.
7. The nation's teaching force will have access to programs for the continued improvement of their professional skills and the opportunity to acquire the

knowledge and skills needed to instruct and prepare all American students for the next century.

8. Every school will promote partnerships that will increase parental involvement and participation in promoting the social, emotional, and academic growth of children.

Recognizing the difference in state reform needs and efforts, Goals 2000 was seen as a catalyst for change whose stabilizing effect would sustain educational reform by supplementing efforts currently in place (U.S. Department of Education, 1998). While events leading up to the passage of Goals 2000 confirmed that education had clearly become a national issue, it was still evident that education remained a state and local responsibility (Schwartz and Robinson, 2000). Goals 2000 envisioned a larger federal role in shaping reform policy (Kirst, 2000). Despite a thirty year effort to develop a national education strategy, perhaps with the exception of education of the handicapped and racial discrimination, no overall strategy had been adopted. Although Goals 2000 was meant to change that, the power of systemic change appeared to once again give way to incremental reform (Kirp, 2000) as the process of assimilation to previous forms of schooling once again exerted its influence as narrow bureaucratic interests and elite policy maker's perspectives were adapted to local circumstance (Tyack and Cuban, 1995).

No Child Left Behind, 2002

In the first decade of the twenty-first century, America's leading reform ideas of accountability and choice became the central tenets of President George W. Bush's No Child Left Behind Program (NCLB) as standardized test scores became the primary measure of school quality (Ravitch, 2010). Signed into law in January 2002, NCLB represented the most sweeping

reform of the ESEA since its enactment in 1965 and redefined the federal role in K-12 education (U.S. Department of Education, 2010).

Hailed as a landmark education reform designed to improve student achievement and change the culture of America's schools, NCLB embodied four key principles: stronger accountability for results; greater flexibility in the application of federal funds; more choices for parents of children from disadvantaged backgrounds and an emphasis on teaching methods of demonstrated effectiveness. In addition, improved reading for young children, enhanced teacher quality, and ensuring that all children in America's school learn English were accented (NCLB: A Desktop Reference, 2002).

NCLB strengthened accountability by requiring the States to implement statewide accountability systems covering all public schools and students. These systems were to be based on challenging State standards in reading and mathematics, annual testing for all students in grades 3-8 and annual statewide progress objectives (Executive Summary, 2002). Under these expectations, school success would be defined by three elements: 1) By the year 2014, all students would perform at "proficient" levels in reading and mathematics; 2) in each school, each year, student *adequate yearly progress* (AYP) was directed by annual proficiency targets; 3) the annual rate of progress would apply not only to the aggregate student enrollment of a school, district or state, but also to disaggregated groups of students according to income, race, gender, English language ability and special education status (NYSED, 2002). Failure to meet AYP in the aggregate and in all sub-group designations would result in districts and schools becoming subject to improvement, corrective action or restructuring measures intended to get them back on course. Schools that met or exceeded AYP objectives would be eligible for academic achievement awards (Executive Summary, 2002).

To cut down on federal red tape and bureaucracy and enhance local control, NCLB reduced the overall number of ESEA programs at the U.S. Department of Education from fifty-five to forty-five. Flexibility in the application of federal funds, in exchange for greater accountability for results, made it possible for most districts to transfer up to 50 percent of federal formula grants to Title I or any grant program under the Act's umbrella focusing on teacher quality, educational technology, innovative programs or safe and drug free efforts (NCLB Desktop Reference, 2002). Up to 150 school districts, interested in obtaining the flexibility to consolidate all federal funding programs, as part of a local flexibility demonstration project, would be allowed to do so in exchange for entering into a performance agreements holding them accountable for higher academic achievement (Executive Summary, 2002).

Parents of children attending low performing schools, as identified under the requirements of NCLB, were given a new range of options regarding school choice (NCLB Desktop Reference, 2002). Students in low performing schools would now be allowed to transfer schools or receive additional educational services if their school failed to demonstrate AYP or proved to be persistently dangerous (Practical Parenting Partnerships, 2003). Public school choice, supplemental services, including tutoring, after school programs and summer school, were coupled with enhanced federal support of charter schools as parents, educators and communities were given greater opportunities to create new charter schools (Fact Sheet, 2010). These options were closely linked to the act's accountability provisions to enhance student achievement and serve as an incentive for low performing schools to improve or lose students and run the risk of restructuring if low student performance persisted (NCLB Desktop Reference, 2002; Executive Summary, 2002)

Under NCLB, special emphasis was placed on determining what educational programs and practices were effective through rigorous scientific research. Reading First, received significant federal funding as scientifically based instructional programs were targeted for support (NCLB Desktop Reference, 2002). Underscoring the new emphasis on *scientifically based research*, the Office of Educational Research and Improvement was transformed into the Institute for Educational Sciences (IES) and was charged with identifying a menu of educational improvement programs for public school and districts (NYSED, 2002). An outgrowth of this effort was the development of the What Works Clearinghouse as a central and trusted source of scientific evidence for what works in education (U.S. Department of Education, 2010).

The passage of NCLB made testing and accountability a national educational strategy (Ravitch, 2010). Its measures, principles, bipartisan support and enthusiastic public reception inserted the federal government as a regulator into American public education and represented the culmination of five decades of federal initiatives in elementary and secondary education (Zhao, 2009, NYSED, 2002). NCLB enjoyed overwhelming support of the nation's governors while others worried that the unprecedented level of federal involvement in education shifted the locus of educational decision making from local and state officials to federal authorities. (Fusarelli, 2005).

In summary, NCLB espoused simple and unambiguous goals. It embodied efforts to end the "soft racism of low expectations" by closing racial achievement gaps and bringing all students to proficiency. Unprecedented measurement of academic progress in two subject areas resulted in mandatory yearly testing in elementary and middle school and required that all children from all racial and ethnic groups attain 100% proficiency. Under NCLB, schools are required, under threat of strict sanctions, to raise achievement each year in math and reading. The

bipartisan bargain that led to the enactment of the law was predicated on the hope of dramatic education progress supported by the infusion of federal aid tied to strict accountability (Lee, 2006).

Ongoing Federal Reform Efforts

Re-authorization of NCLB-ESEA, although slated for completion in 2007, has yet to be accomplished. Under the Obama administration a *Blueprint for Reform* (2010) emphasizes five priorities. 1) College and career ready standards as all states are called upon to develop and adopt standards in English and mathematics that build toward college and career preparedness upon graduation from high school. 2) Elevating effective teachers and leaders by recognizing, encouraging and rewarding excellence. 3) Assuring equity and opportunity for all students by closing achievement gaps and improving educational outcomes. 4) Incenting state and local efforts to pursue ambitious reforms and comprehensive plans that promote improved student outcomes, supporting the expansion of charter and other autonomous public schools and provide access to challenging high school curriculums that help students succeed. 5) Promoting innovation and continuous improvement through investment in the next generation of innovative solutions, creating competitive funding streams and supporting strategies that better engage families and community members. In 2009, Secretary of Education, Arne Duncan called upon educational leaders to "join with us to build a transformative education law that guarantees every child the education they want and need – a law that recognizes and reinforces the proper role of the federal government to support and drive reform at the state and local level" (Reauthorization Can't Wait)

The American Reinvestment and Recovery Act (2009) provided $4.35 billion for the *Race to the Top Fund* (Rt3). States applying for funds agree to pursue education reforms in the

areas of internationally-benchmarked standards and assessments, recruitment and retention of effective teachers and principals, adoption of data systems to track student achievement and improvement of low performing schools. In addition, schools qualifying for Rt3 grant funding, are required to remove statutory barriers to using data about student achievement to assess teacher and administrator performance and ensure successful conditions for high-performing charter schools and other innovative schools (NYSED, 2009; Race to the Top Executive Summary, 2009)

The approval of Common Core State Standards and the Smarter Balanced Assessment Consortium (SBAC) serve as concrete examples of the collaboration of states in developing large scale programs. Currently, forty-eight states, two territories and the District of Columbia have declared support of the Common Core State Standards Initiative under the leadership of the National Governors Association Center for Best Practices and the Council of Chief State School Officers (CCSSO) in an effort to sustain economic recovery and to guarantee that American students will be internationally competitive by learning from top performing states and nations (DESE, 2010).

The SBAC represents a collection of thirty-one states, working collaboratively since December 2009 to develop a student assessment system aligned to a common core of academic standards to apply for a $160 million Rt3 grant. Under USDOE requirements, the assessments must be valid, support and inform instruction, provide accurate information about what student know and can do and measure student achievement against standards designed to ensure that all students gain the knowledge and skills needed to succeed in college and the workplace.

Developments in the areas of reauthorization of NCLB, Rt3 competitive grants and common core standards and assessment have not yet been fully implemented. At this time,

measuring their impact on student achievement is not feasible. Nevertheless, they serve to highlight trends in education policy and the changing purposes of federal aid to education. With growing emphasis on standardized and measureable outcomes, coalitions of states, rather than individual state or local interests, now advocate for changes in federal education policy (NYSED, 2009).

Education Reform 1950 - 2010

Echoing the statements of Chief Justice Earl Warren, educational historian Diane Ravitch (2010) notes that our nation's commitment to universal, free public education is a fundamental element of our democratic society. Relative to meaningful reform, change is much easier to effect than real improvement (White and Smith, 2010). Over the last fifty years, federal, state and local government interaction with non-governmental organizations has evolved. The formal relationships between these entities became more complex and at times contradictory. Further, as the importance of educational issues has grown, so too has the diversity of solutions and passions for implementation of remedies to address the perceived failings of the educational system in America (Kaestle, 2007; Hargreaves and Goodson, 2006)

Accordingly, education policy has changed since 1957 due to a number of distinct changes in the education polity brought about by shifts in the nature, number and ideological diversity of interest groups, technological advances that shrank the distance between national and local entities and heightened tensions between state and federal authorities as arguments flared relative to the appropriate roles each should play in education (Kaestle, 2007). This sometimes steady, sometimes tortured march to current educational policy can be traced as policy reform moved from the historical patterns of stable relationships, committee access and administrative coordination to pluralistic networks of competing stakeholders seeking not just access to the

process but desiring impact on the eventual result (DeBray-Pelot, 2007). Local, state and national events, resulting in an expanded federal and state role in education, have coalesced to provide a continuum of educational reform that both assimilated and directed future directions as repeated waves of reform created a complex and resource hungry affair that requires keen analysis of educational challenges (Fullan and Miles, 1992, Tyack and Tobin, 1994, Murphy and Adams, 1998, Sunderman, 2010)

The years following World War II witnessed the emergence of a booming economy and the exponential expansion of public education (Berliner and Biddle, 1995). When passed in 1958, the NDEA became the first in a series of post-war categorical bills that broadened the federal role in education for the next two decades by combining the themes of national defense and international economic security (NYSED, 2006; Kaestle, 2007). Reformers of the day demanded rigor, discipline and high cognitive expectations (Tyack and Cuban, 1995) as the launch of Sputnik became an instant metaphor for the poor quality of American education (Ravitch, 2000).

The years following passage of the NDEA not only saw an unprecedented infusion of federal money into the public schools (NYSED, 2006), they also ushered in challenges to the independence of school boards and superintendents (Sunderman, 2010) expansion of civil rights concerns for multiple constituencies (Tyack and Cuban, 1995) and the planting of the seeds of the "school choice" movement (Finn, 2008). Large scale reform, driven by new ideas and national engagement in the discussion of education related issues left little doubt that something very different was in the air in the 1960's (Fullan, 2007).

In the aftermath of Sputnik, federal efforts to enhance mathematics and science curricula, especially for college students, became an immediate focus. As the decade of the 1960's

unfolded, the focus on academic improvement yielded to finding solutions for solving the "urban crisis" (Ravitch, 2000). The push for civil rights became a major force for educational reform as past inequities were pinpointed and the educational system was thought to be one of the primary vehicles for reducing social inequality. Unprecedented sums of federal aid, and the inevitable strings that come with it, led to controversy between state and federal authorities as they debated which level of government was best suited to implement the ESEA. The result began a four decade entanglement of mounting complexity, regulation, interdependence and frustration as massive societal and educational changes collided with federal, state and local political structures (Fullan, 2007, NYSED, 2006, Finn, 2008, Ravitch, 2000).

In the midst of this fray, the findings of the Coleman Report (1966) advanced the notion that when controlling for socioeconomic factors, it appeared that schooling accounted for only a minimal improvements in student achievement as differences in facilities and curriculum, apparently exerted little influence on student achievement levels. This position appeared to confirm, contrary to the assumptions of the education profession and proponents of various federal social programs, that school resources and services do not reliably translate into positive achievement outcomes (Finn, 2008). As the response of more programs, more money, more schools and more teachers appeared inadequate to the demands of the times, a growing emphasis on student achievement through personal experiences, activities and spontaneity ushered in a host of movements, open, free and alternative schools and de-schooling, gained varying degrees of philosophical prominence and in some cases widespread application (Ravitch, 2001).

The confluence of these events left schools battered and unsure of their authority and influence over student outcomes (Ravitch, 2000). The establishment of the National Institute of Education (NIE) and the National Assessment of Educational Progress (NAEP) sought to review

the links, if any, between federal aid and student performance and longitudinal variations and fluctuations in student achievement nationwide (NYSED, 2006). Fullan (2007) notes that it is not necessary to believe that Sputnik was the literal cause of large scale reform after 1957, or that the 1960's spawned multiple new ideas about education, or that the United States was the only country engaged in national education reform. In the 1970's the pace of reform remained fast and furious as schooling became the arena for instituting new forms of equality, ethnic self-determination and liberation as massive societal changes exerted their influence on numerous institutions (Tyack and Cuban, 1995).

Through the 1970's, eroding public confidence in the nation's educational system mounted as political, social, economic and international issues, coupled with evidence of deteriorating student performance, had some quarters questioning whether public education could fulfill the myriad of expectations expressed in the previous two decades (Finn, 2008, Berliner and Biddle 1995). Adding to this crisis of confidence, the 1970's witnessed the struggle to establish the federal Department of Education as issues with special education, court ordered busing, school finance reform, the effectiveness of federally funded programs and school accountability demanded increasing attention (NYSED, 2006). Further animus developed as the College Board announced that SAT scores had been in steady decline since the mid 1960's thereby thrusting worries about the state of the nation's schools into the political arena (NYSED, 2006, Ravitch, 2000).

Tyack and Cuban (1995) point out that through the 1970's and into the 80's most policy talk and action emerged as a conscious reaction to the period preceding it. The ensuing milieu pushed large scale education reform underground through a growing number of movements focused on innovative programs promoting effective schools (Fullan, 2007). In 1970, educational

policy makers in the Nixon administration called for a period of reflection on the dismal results of previous reform efforts (Ravitch, 2001). They concluded that the failure of federal programs, stemmed from a lack of comprehensive change in which reform encompassed virtually all aspects of school operation including curriculum, staff development, community involvement, administration and organization (Ravitch, 2001; Sterbinsky, Ross and Redfield, 2006).

During this time, "back to basics" proponents gained a foothold in the national education conversation. Described as more of a mood than a movement (Gutek, 1978), "back to basics" efforts emerged as a diverse mix of adherents advocated for the removal of electives and school based social services and returning to methodologies that included drill and recitation, daily homework and frequent testing (Gutek, 1978, Deshler, 1978, Brodinsky, 1977). Minimum competency testing gained significant state support in the mid-1970's as non-educators advanced the notion that minimum levels of achievement should be established for basic skills and all students should be expected to attain a specified level of competency (Pipho, 2002, NYSED, 2006). This movement eventually served as the foundation for what morphed into standards based reform as some held that mastery of high standards, under favorable learning conditions, would elevate student ability and motivation to similar levels as schools took responsibility for developing the abilities of all children (McDermott, 2007; Bloom, 1976).

School vouchers, as proposed by Milton Friedman (1955) received limited attention as the Office of Economic Opportunity launched its voucher demonstration in a limited context from 1972-77 (Finn, 2008). Ultimately the influence of national business leaders began to move reform away from local interests heralding a focus on results oriented school management and standards based reform that elevated calls for accountability to state and federal levels (McDermott, 2007; Finn, 2008; Tyack and Cuban, 1995; Berliner and Biddle, 1995). Almost as

an outgrowth of this subtle shift, each presidential administration, from 1980 forward, has sought to reinvent the federal role in education reform. (Kaestle , 2007).

Cohen and Spillane (1993) note that the 1980's presented a remarkable ferment in education as reformers demanded more thoughtful and intellectually ambitious instruction, business and political leaders became advocates for better operated schools and called for students to become independent thinkers and enterprising problem solvers while educators spoke to intellectually challenging instruction deeply rooted in the academic disciplines. Political leaders advocated decentralized control while promoting education as a national concern, but a state responsibility (Tyack and Cuban, 1995; Zhao, 2009; NYSED, 2006). The resulting crisis of confidence that surrounded education policy as despair over the failure of top-down reforms, early in the decade, coupled with the unfulfilled promises of bottom-up reform efforts of the late 1980's, led to increasingly polarized positions of increasing numbers of ideologically diverse interest groups (Fuhrman, 1993, Kaestle, 2007). The result being a reform process of dramatic fluctuation comprised of reform targets that were rarely met in practice (Firestone, Fuhrman and Kirst, 1990).

Characterized as a decade of national commission reports and state legislative and executive action, 1983 and the publication of *A Nation at Risk*, ushered in an era of critical education analysis that saw no less than fifty reports and over six thousand pages of critical comments and recommendations destined to shape the course of educational reform through the 1990's (Firestone, Fuhrman and Kirst, 1990; Dow, 1991; Marzano, 2002). The conditions that presaged *A Nation at Risk* prompted various prescriptions to remedy the issues facing schools (Ravitch, 2000). Ron Edmonds (1983) advanced the concept of "effective" schools. Citing five school factors, strong administrative leadership, a climate of high expectation, orderly school

atmosphere, pupil acquisition of basic skills take precedence over all other school activities and frequently monitored pupil progress, Edmonds held that "We can, whenever and wherever we choose, successfully teach all children whose schooling is of interest to us." In touting the Coalition of Essential Schools, Sizer (1986) defined the basic design of high schools and the underlying assumptions relative to their function as problematic to student achievement and proposed rebuilding schools through the adoption of a less is more approach with a renewed commitment to personalization and thoughtful pursuit of clear, informed thinking and decent behavior. Cultural literacy, as described by E.D. Hirsch Jr. (1983), attributed the acknowledged drop in verbal SAT scores to curricular deficiencies long present in language instruction and proposed that the path back to a more literate culture was through restoration of common contents to the humanistic side of school curriculum.

As the Reagan administration worked to scale back federal categorical aid programs and return control back to states and local entities (NYSED, 2006), ANAR served to plant the seeds of greater governmental intervention in the educational system (Zhao, 2009) At the same time, states pursued their own response to ANAR through legislative action. Missouri's Excellence in Education Act (1985) sought to remedy the perceived shortcomings of the educational system through the creation of multiple points of emphasis that included but were not limited to the development of core competencies and key skills, large scale criterion referenced tests, discipline policy reform, minimum salary provisions and improved pre-service teacher training and professional development.

By the mid 1980's, the nation's governors and their respective legislatures were active in supporting school reform efforts as legislative incursions into the core operations of schools that had previously been under the jurisdiction of local school boards (Murphy, 1990). The merging

of business and political interests, growing state intervention efforts and heightened economic concerns culminated in the 1989 Charlottesville Summit as newly elected president, George H.W. Bush met with the nation's governors in September. The outgrowth of this summit was the beginning of a restructuring of the educational system built around a defined set of national educational goals Vinovskis, 1999).

Acknowledging the results of the 1989 educational summit in Charlottesville, President Bush's state of the union message, delivered on January 31, 1990, announced "America's" educational goals that were to be attained by the year 2000. As with other announcements of new educational direction or reform, a flurry of efforts emerged to facilitate accomplishment of the goals. Development of large scale comprehensive school reform models proliferated, as did standards based reform, high stakes testing, school choice initiatives and international comparison of student achievement data in response to globalization. (Fullan, 2007). In addition, growing networks of organized interests exerted their influence. Private organizations and think tanks assumed leadership in the dissemination of school reform ideas and began to affect education in a manner that extended beyond the traditional influence of state educational bureaucracies as the federal role in education reform began to play a predominant role (Sunderman, 2010; NYSED, 2006; Usdan, 2005).

Comprehensive school reform and systemic reform models offered an approach to school governance and organization that moved beyond tinkering with individual aspects of education and sought to rethink and revamp the educational system from the classroom to the statehouse (Cicchinelli, 1999). Focusing on how to significantly upgrade the quality of curriculum and delivery of instruction, systemic reform, ideally, attended to curriculum frameworks, alignment of state education policies and restructured governance systems (O'Day and Smith, 1993).

Comprehensive reform programs encompassed virtually all aspects of school operation and included effective research based instructional methods, professional development, clearly articulated vision, measurable achievement goals, meaningful parental involvement, evaluation programs and coordination of available resources (Sterbinsky, Ross and Redfield 2006; Cicchinelli, 1999).

In conjunction with the focus on whole school reform, educational system improvement efforts, during the 1990's, came to be dominated by the trinity of standards, assessment and accountability as federal and state efforts to improve educational outcomes intensified. Globalization, the perceived deindustrialization of America, and lagging performance of American students in international comparisons drove governors, legislators and business leaders to press for higher standards in public schools (Murphy and Adams, 1998, Finn 2008, Berliner and Biddle, 1995, Ravitch 2000). As federal and state legislation, Goals 2000 (1993) and the Missouri Outstanding Schools Act (1993), attempted to incorporate national goals, comprehensive reform, higher standards, improved assessment instruments, and greater accountability into viable solutions to poor student performance, school choice, in the form of vouchers and charter schools, emerged as a remedy to the perceived shortcomings of the educational system. Although barely on the radar in the 1980's school choice cemented the concept of an educational marketplace in the reform discourse as the debate shifted from enhanced choice within the public system to public funding for private schools (Murphy and Adams 1998; Goldhaber, 1999).

As these concerns and proposed remedies took root across the country and the traditional education governance system worked to accommodate growing federal influences, the roles and responsibilities of national, state and local agencies encountered rapid and dramatic changes

(Usdan, 2005). The end result created a system that moved from local autonomy toward an interdependence of political jurisdictions, away from monitoring inputs and focused on performance, developed alternative structures for the delivery of schooling and moved discussions about student learning and performance comparisons, normally the purview of academic circles, into the mainstream political discourse (Elmore, 1998).

In realizing that comprehensive school reform models were not the solution to uniform improvements in student achievement, policy makers gravitated to more direct methods of attempting to improve educational outcomes. Signed into law on January 8, 2002, the latest iteration of the ESEA (1965), known as No Child Left Behind (NCLB) promised a new era of high standards, testing and accountability that would leave no child in America overlooked (Ravitch, 2009). Specifically, the act embodied four key principles: stronger accountability for results; greater flexibility for states, school districts, and schools in the use of federal funds; more choices for parents from disadvantaged backgrounds and an emphasis on teaching methods that have been demonstrated to work (NCLB, 2002).

In practice, NCLB represented a major programmatic expansion of federal authority over education, extended federal influence into nearly every classroom in America and dramatically altered the American educational landscape (Sunderman, 2010; NYSED, 2006; Hess, 2007). With its passage, terms like adequate yearly progress, highly qualified teachers, scientifically based research, subgroup achievement and school improvement came to permeate the educational conversation (Darling-Hammond and Youngs, 2002; Ravitch, 2009; Petrilli and Finn, 2006. As a national policy it stipulated that by the 2013-14 school year, all students in America's public schools would be proficient in math and language arts (NCLB, 2002).

Although slated for reauthorization in 2007, Congress has yet to take up legislation to do so. President Obama's *Blueprint for Reform* (2010) re-envisions the federal role in education by building on the key priorities of college and career readiness, teacher and leader effectiveness, equity and opportunity for all students, higher expectations and rewarded excellence and promotion of innovation and continuous improvement. Arne Duncan, Secretary of Education under President Obama, charged with oversight of $100 billion provided by Congress in 2008, set aside $4.35 billion to support educational reform through the *Race to the Top* (Rt3) program (U.S. Department of Education, 2009; Ravitch, 2010). The fund provides competitive grants to encourage and reward states that are creating the conditions for education innovation and reform in four specific areas: Adopting standards and assessments that prepare students to succeed in college and the workplace and compete in a global economy; building data systems that measure student growth and success and inform teachers and principals about how they can improve instruction; recruiting, developing, rewarding and retaining effective teachers and principals and turning around the lowest achieving schools (Missouri Department of Elementary and Secondary Education, 2009). The programs stated aim was to reward states that have demonstrated success in raising student achievement and have the best plans to accelerate their reform in the future (U.S. Department of Education, 2009). In addition to the stated priorities, states seeking grant awards under Race to the Top requirements must remove any statutory barriers to using student achievement data in assessing teacher and administrator performance and must remove limits to the number of charter schools allowed in their respective jurisdictions (NYSED, 2009).

Despite the lack of formal action by Congress, relative to NCLB, coalitions of state governmental leaders and chief educational officers moved forward with the development of Common Core State Standards. Produced on behalf of forty-eight states, two territories and the

District of Columbia, the National Governors Association Center for Best Practices and the Council of Chief State School Officers (CCSSO) released their final version of the common standards in the areas of English language arts and mathematics on June 2, 2010. Upon recommendation of Commissioner of Education Chris L. Nicastro, the Missouri State Board of Education voted to adopt the standards on June 15, of the same year. Commissioner Nicastro emphasized that the time had come for the country to embrace clear, rigorous and consistent standards in order to sustain the country's economic recovery and guarantee that the nation's children will be internationally competitive (DESE, 2010). In conjunction with adopting the Common Core Standards, Missouri joined a multi-state consortium that eventually would receive a $160 million grant under Rt3 to develop next generation assessments (DESE, 2010). Based on the Common Core Standards, the first of its kind SMARTER Balanced Assessment, will create adaptive on-line exams intended to provide more immediate and useful information to students, teachers, parents and school officials relative to student progress (DESE, 2010; SBAC, 2010)

The past six decades have highlighted several important trends in educational reform. The growing influence of federal policy, changing purposes of federal aid to education, growing emphasis on standardized and measurable outcomes and the increasing coalition of states pursuing common agendas (NYSED, 2009). Along the way, a number of realities have become abundantly clear. While the history of intensive educational change is barely fifty years old, it is apparent that reform is a complex, problem driven and resource hungry affair (Fullan, 2007; Murphy and Adams, 1998).

As public perceptions of education's problems shift and reform strategies change, anxiety about America falling behind the rest of the world has remained the mainspring of our reform efforts (Murphy and Adams, 1998; Finn, 2008). Hargreaves and Goodson (2006) note that

reform efforts must be viewed within the context of their interconnected, cumulative and sometimes contradictory effects (Hargreaves and Goodson, 2006). For while cycle changes for policy makers last little more than five years (Huberman, 1993), Sarason (1990) points out the temporary nature of reform remedies in noting that problems are constant while answers are provisional.

As American schools change, driven by societal demands, quickening international stresses, shifting demographics and wider cultural and technological developments (Finn, 2008) and the layering of new policy solutions onto existing programs (Fullan, 2007) in an attempt to reduce educational quality to a score that allows comparative analysis (Zhao, 2009), it would appear that the benefits of reform are lost on the very people they were intended to help, students.)While we have learned that the process of educational reform is much more complex than had been anticipated, the shadow being cast over future reform lies in the sobering realization that this is going to be a lot harder than anticipated (Fullan 2007). Consequently, the welfare of our students and education as a societal and cultural foundation begs the question, has any of the reform of the last fifty years made a difference in student achievement? The final sections of this review will consider changes in educational assessment, identify state, national and international measures of student achievement and review what the data from those assessments indicate.

Student Achievement

Nichols and Berliner (2007) note that the current emphasis on the use of tests to make critical decisions about the effectiveness of schools can be traced back to the authorization of the ESEA of 1965. The past fifty years have seen the transformation of federally engendered assessments shift in their emphasis from monitoring the use of federal funds to assuring the

academic achievement of all students (Popham, 2008). While the educational reform movement in the United States has focused increasingly on the development of new standards for students (Darling-Hammond 2004), educational policy making has become largely evidence based in an effort to validate and legitimize educational process and products (Wiseman, 2010).

Since the mid-1800's school systems have, intermittently used student test scores to allocate rewards or sanctions to schools or teachers, while at the same time becoming integrally linked with economic, political and social issues (Darling-Hammond, 2004; Wiseman, 2010). According to Lin, Baker and Betebenner (2002), assessment should provide a valid set of inferences related to particular expectations for students and schools in determining whether students learned what they were expected to learn in school (Sahlberg, 2008). In the twenty years since ANAR, educational policy has transitioned from focusing on student inputs to mandating student outcomes (Lee and Wong, 2004) As testing and accountability has shifted from minimum competency to proficiency, state accountability has given way to strong public support of federal accountability under the requirements of NCLB (Lee, 2008; Hess, 2006). Over the last twenty years, the results of international assessments have influenced policy debates in the United States where each wave of findings receive significant media attention and public interest while the global reform effort has raised calls that schools do more to help the nation's economy to develop and become more competitive (Hampden-Thompson & Johnston, 2006; Sahlberg, 2008).

Through the multiple reauthorizations of the ESEA of 1965, the nature of student assessment and accountability has intensified (Popham, 2008). High stakes testing has become part of the educational landscape and guaranteed that strong efforts and significant resources will be devoted to making sure that students do well on the required assessments (Nichols & Berliner,

2007). The passage of NCLB dramatically magnified assessment requirements by stipulating specific levels of testing and achievement in addition to enumerating sanctions for failing to meet achievement targets (Popham, 2008; Lee and Wong, 2004; Orfield, 2006; O'Day, 2002; Darling-Hammond, 2006)

According to Darling-Hammond (2006), the broad intent of NCLB was to raise the achievement level of all students, provide parents with greater choice and produce better teachers. In the course of executing that aim, Hursh (2007) posits the notion that the public discourse on education has transitioned from schools as deliberative democratic systems to the marketization of education as a commodity. In the process, pressures for higher productivity, better efficiency and system-wide excellence have shifted educational efforts from moral purposes to measurably improved outcomes and greater economic competitiveness (Sahlberg, 2008).

Expansion of the global educational testing industry is based on the optimistic assumption that it is possible to find out, with sufficient precision, what students have learned by testing them (Sahlberg, 2008). Hursh (2007) notes that confirmation of educational quality, through standardized testing, has placed schools in a position where educators and policy officials find themselves making decisions based on the results of standardized tests. The education reform movement has increasingly focused on standards and the success of students in achieving those standards which prompts the question, Will standards and tests improve schools, create educational opportunities where they do not now exist and aid educators in diagnosis and remediation of identified learning issues (Darling-Hammond, 2004; Hauser, 1999)?

Test scores strongly influence public opinion about the quality of schools in America (Grissmer, 2000). Through the public reporting of student achievement and the attachment of

consequences for sub-par performance (O'Day, 2002), the rise of research, evidence and data-driven decision making has strongly influenced policy agendas, teacher training, classroom practice and curriculum (O'Day & Smith, 1993; Cochran-Smith, 2006; Sahlberg, 2008; Popham, 2008). The 1965 authorization of ESEA , in the post-Sputnik era, was the federal government's response to calls for greater attention to the quality of America's schools (Nichols &Berliner, 2007). Reauthorization of ESEA in 1974 shifted governmental education concerns from accounting and monitoring the appropriate use of funds to the impact of governmental policy on student achievement (Popham, 2008). As educators await the reauthorization of NCLB, serious debate has developed as to whether the law's intent has been a help or hindrance (O'Day, 2002; Darling – Hammond, 2004; Lee, 2007; Nichols & Berliner, 2007; Ravitch, 2010). In order to understand the impact of student achievement testing, it may prove instructive to review the array of state, national and international assessments whose results are being used to guide policy and practice.

State, National and International Assessments

Zhao (2009) suggests that education serves two purposes – to select and to educate and that a nation's education system functions on behalf of society to promote those talents, knowledge and skills deemed valuable to society and suppress those seen as undesirable. Within this context, testing becomes an effective way to convey to parents, teachers and students what is important learning and worthy of their efforts and presumably serve to inform, motivate and reorient the behavior of schooling agents toward improved student achievement (Zhao, 2009; Lee, 2008).

The use of test results to inform decision making is not a new construct. As early as AD 605, China's government used a national examination system, known as the *keju*, to select

governmental officials. The *keju* effectively served as the basis for social advancement in China for more than 1,300 years. Although designed as a political instrument, the high stakes nature of results determined what education was about in China for centuries. Virtually all educational efforts were about preparing for the *keju*. As a result, what was being tested became what was taught and learned (Zhao, 2009).

In the United States, standardized tests have been used to assess aptitude and achievement for nearly a century. Over the course of the last fifty years, tests and assessments have served to justify student tracking and selection in the 1950's, monitor program accountability in the 1960's, confirm the achievement of minimum competencies in the 1970's, enforce school and district accountability in the 1980's and prompt adherence to standards based accountability in the 1990's (Linn, 2000; Nichols and Berliner, 2007). The results have played an increasingly prominent role in the development of educational thinking in the United States as each wave of findings fed intense media and public interest in accepting or criticizing the results (Nichols & Berliner, 2007; Hampden-Thompson & Johnston, 2006).

The Missouri Mastery and Achievement (MMAT) Tests Technical Manual (Osterlind, 1986) provides the following information. The MMAT was developed as a result of the Missouri Excellence in Education Act of 1985. The guiding principle in the development of the MMAT battery was to provide reliable and valid measures of student achievement on the Key Skills listed in the *Core Competencies and Key Skills for Missouri Schools*. The intent of the instrument was to encourage and promote quality in Missouri schools by furnishing data for an annual report made to the Missouri General Assembly by DESE in the form of summary data and overall test score trends.

Scores derived from the tests were also to be used at the local level to assist teachers in tailoring personalized instruction that reflected each student's actual achievement in particular areas. Counselors were expected to use the test results to guide students into the most constructive class schedules. Principals and other district officials were to employ the results, calibrated to state and national standards, in making decisions about curriculum and instruction.

State officials and leaders in business, industry and education were involved as an Oversight Committee working in conjunction with the Center for Educational Assessment at the University of Missouri-Columbia in creating the battery which consisted of thirty-four distinct multiple-choice subject tests assessing student performance in grades two through ten in the areas of reading/language arts, mathematics, science and social studies/civics. The level of educator involvement was considered quite remarkable as over 200 teachers and administrators from across the state participated in test item writing.

The MMAT was developed in two phases. The first phase, including tests for grades 3, 6, 8 and 10 was developed from 1985-1987. Phase II for grades 2, 4, 5, 7, and 9 was completed in 1986-1988. Phase I testing was first administered in 1987. Phase II test administration was implemented in 1988. The battery was revised in 1991 and 1992 (MMAT Summary Report, 1997) and utilized across Missouri until 1999.

The Missouri Assessment Program (MAP) is one of several educational reforms mandated by the Outstanding Schools Act of 1993. Under this legislation the Missouri Department of Elementary and Secondary Education identified the knowledge, skills and competencies that Missouri students should possess upon completion of high school (Appendix D, EOC Technical Report, 2009 MAP Technical Report, 2010). Known as the Show-Me Standards, these standards became the basis for the state's performance-based assessment

program which emphasized authentic learning and problem solving through multiple choice, constructed response and performance event test items (CLEAR, 1993; DESE, 2007)

Originally using grade-span assessments in the areas of communication arts, mathematics, social studies and science for grades 3 - 11, Missouri changed its testing program to comply with the requirements of NCLB in 2006 when grade-level tests were administered annually in grades 3-8 in communication arts and mathematics (Appendix D, DESE, 2010). Grade-span tests were administered in science in 2008 while MAP testing at the high school level was replaced with End of Course (EOC) Assessments in 2008 eventually assessing high school student performance in English I and II, Algebra I and II, Geometry, Government, American History and Biology (DESE, 2009).

SAT and ACT Testing

Standardized testing for college admissions has seen extraordinary growth over the course of several decades and appears poised for continued growth as computer based assessments with instant scoring, adaptive testing and non-cognitive assessment see increased application (Atkinson & Geiser, 2009).

As far back as the late 1800's leading American universities were concerned about the lack of a universal method of determining if students were prepared for college level coursework. Consequently, the College Entrance Examination Board, or College Board as it is known today, working in conjunction with the universities, developed the first standardized college entrance exam (College Board, 2011). Introduced in 1926, the Scholastic Aptitude Test, or SAT, purportedly measured a student's aptitude or capacity for learning and the likelihood of success in college (Geiser, 2009; Sinha, 2001 Lemann, 1999).

Taken by 8000 young men in its inaugural administration, the SAT is now taken by more than 2.1 million college bound men and women annually (College Board, 2011). Reconfigured several times over the past decades, each design intended to make the test more useful to students, teachers, counselors and college admissions staff (College Board, 2011). According to the College Board (2002) the SAT is a demanding test that focuses on the fundamental math and reading skills necessary to succeed in college and adult life. Although the terminology of the intended measurements of the SAT have evolved from "aptitude" to "general reasoning" and today's emphasis on "critical thinking", the Educational Testing Service maintains the SAT's primary aim is to gauge students' general analytic ability rather than identifying mastery of specific subject matter (Geiser, 2009). Today's SAT assesses student performance in the areas of critical reading, mathematical reasoning and writing skills. SAT Subject Tests are taken by students wishing to demonstrate their mastery of specific subjects through twenty tests in the areas of English, history, mathematics, science and foreign languages (College Board, 2011)

According to ACT.org (2011), the ACT is the most widely used college entrance examination in America. In 2010 nearly 1.6 million students took the norm referenced examination which covers four content areas and contains an optional writing test (ACT.org, Atkinson & Geiser, 2009).

The ACT was introduced in 1959 as a competitor to the SAT (Atkinson & Geiser, 2009) and is the primary college entrance examination administered in the Midwest, southern and southwestern United States (Messina, 2008; JBHE, 2006). Taken, for the most part, by college bound students (Clark, Rothstein & Schanzenbach, 2009), the ACT is used by colleges and universities to compare students to one another in determining admission status (Atkinson &

Geiser, 2009; Messina, 2008) while researchers often use ACT results as measures of student achievement (Clark, Rothstein & Schanzenbach, 2009).

The ACT measures student achievement through assessments in English, mathematics, reading, science and an optional writing test. In addition, the ACT provides College Readiness Benchmark Scores which represent median test scores that are predictive of student success in relevant college courses (ACT, 2011).

While registration for the ACT and SAT has surged in recent years (Thomas, 2004), the National Association for College Admissions Counseling (NACAC) has called for colleges and universities to drop the use of the ACT or SAT as an admissions requirement citing the possibility that the significance of such test scores may be a reflection of household income and concerns that mandatory testing may skew the overall purpose of the exam, which is to measure how much a student has learned in high school rather than how well a student has been coached (Nealy, 2008; Thomas, 2004). The NACAC is encouraging colleges and universities to rely more heavily on admissions testing that is tied more closely to high school curricula (Nealy, 2008). Criterion referenced or standards based assessment, although widely established in the nation's K-12 schools, has yet to replace the norm referenced assessments now prevalent in college admissions (Atkinson & Geiser, 2009).

The purposes, uses and consequences of large scale assessments have changed fundamentally in the past few decades (U.S. Department of Education, 2009). In the 1960s, education scholar Ralph Tyler and U.S. Commissioner of Education Francis Keppel worked together on the concept of a meaningful national assessment. Tyler was interested in tracking student learning in various subject areas at specific ages while Keppel was interested in extracting data that was consistent with legislation that had created the United States Office of

Education (Diket and Brewer, 2011). Congress showed limited interest in national testing in 1963, but it was not until 1966 that the renewal of ESEA, and a corresponding increase in educational funding, that evaluation was included as a key component of new federal programs (Diket and Brewer, 2011)

The first administration of the National Assessment of Educational Progress (NAEP) took place in 1969 (U.S. Department of Education, 2009). Over the course of forty years, what began as a relatively straightforward, low visibility, item-by item analysis of national, regional and demographic results has been transformed to a multilayered measure applicable used, in conjunction with state assessment results, to confirm adequate yearly progress (AYP) as defined under NCLB and in comparing the performance of students in the United States and international results on the Trends in International Mathematics and Science Study (TIMSS) and the Program for International Student Assessment (PISA) (Lane, et.al. 2009; Stoneberg, 2007; Popham, 2008).

Although not included as an official accountability tool under NCLB, some policy makers believe it should be used as part of future policy considerations (U.S. DOE, 2009). Also known as "The Nation's Report Card," the NAEP is a nationally representative measure of student achievement in multiple content areas (US DOE, 2009). Initially designed to assess what students know and can do, NAEP is considered by some to be the "gold standard" of assessment due to the substantial psychometric sophistication implemented in its development (Pellegrino, 2007; Popham, 2008). NAEP is the only assessment using nationally representative samples of students that can track long-term national trends (Grissmer, Flanagan, Kawata and Williamson, 2000)

National Assessment of Educational Progress (NAEP)

Congressionally mandated and administered by the National Center for Educational Statistics (NCES) under the authority of the United States Department of Education and supervised by the National Assessment Governing Board (NGAB), NAEP has tested samples of elementary, middle and high school students across the United State to determine their skills and knowledge in multiple content areas since 1969 (Rampey, Dion and Donahue, 2009). NAEP administers two types of assessments. The "main" NAEP is administered to fourth, eighth and twelfth grade students across the country in a variety of content areas. The long term trend NAEP is administered to nine, thirteen and seventeen year olds every four years. Results are released in a variety of subjects for different demographic groups including gender, socioeconomic status, and race or ethnicity (Rampey, Dion and Donahue, 2009). Typically, no results have been released for individual students, classrooms or schools with the exception of a trial NAEP created for several large urban school districts in 2002 (Lane, et al. 2009)

The United States Department of Education (2009) traces some the history of NAEP as follows: The 1980s found NAEP at the center of many discussions about the quality of education in America. By 1984, NAEP reporting had shifted from emphasizing item results to focusing on scale scores in response to stakeholder difficulties in understanding the reports. By 1987, the Alexander-James Panel was recommending that NAEP start a state-level assessment program. In its reauthorization of NAEP in 1988, Congress authorized state-level assessments and called for standards-based reporting resulting in the establishment of achievement level designations. Since then, the terms *Basic, Proficient and Advanced* have become inextricably linked to subsequent education reform efforts and expanded NAEP's purpose from description and evaluation to standards based performance measurement and accountability (Stoneberg, 2007; Ravitch, 2010).

As a cross sectional survey, NAEP serves as an effective and cost efficient method of achieving is original purposes, however, users of NAEP results increasingly rely on them for state by state comparisons, state testing program benchmarks and as curriculum measures in the subject matter domains assessed (Lane, et.al. 2009). Recognizing the changing landscape of large scale assessment, Loveless (2011) questions whether the Common Core Assessments will push NAEP aside, serve as an augmentation to the information provided by NAEP or redefine its role in monitoring student learning?

International Assessment

Kamens and McNeely (2009) offer the consideration that education has been characterized as a necessity for national economic development and political democratization in the today's world. In this context, international benchmarking of academic progress provides one basis for improvement as countries strive to understand the relative strengths and weaknesses of their respective educational systems and seek to identify best practices in search of the most effective paths forward (Baldi et. al., 2007). While the last forty years have seen the number of countries participating in international testing in the areas of mathematics and science and reading increase, the last two decades have witnessed substantial growth in the use of international surveys of educational achievement (Kamens and McNeely, 2009; Rutkowski, Gonzalez, Nocas and von Davier, 2010).

Stating that natural resources no longer serve as the primary key to economic success, Thurow (1996) claims that brain power, in the guise of a workforce that can invent and innovate, will provide the economic edge competing countries desire. In the milieu of globalization, countries find themselves answering the call to compare and compete as policy makers and educators search to improve their educational systems (Kamens and McNeely, 2009). Koretz

(2009) notes that as ANAR highlighted the perceived shortcomings of American students on the international stage, international comparisons have become a staple of educational debate as national and international testing became linked to educational reform. This, in turn, has lead to cycles of reform that shape educational systems and stimulate intense worldwide interest in assessment (Baker and LeTendre, 2005; Kamens and McNeely, 2009).

Established on the tenet that effective evaluation requires not only consideration of educational inputs and the conditions under which schooling is conducted, but must also include examination of educational outcomes such as knowledge, attitude and participation, the International Association for the Evaluation of Educational Achievement (IEA), established in 1967, follows changes in education outcomes and conditions through periodic studies that provide longitudinal data relative to student performance (Mullis, et. al. 2009). The flagship studies of this association, under the direction of the International Study Center at Boston College (Mullis, et.al., 2009), include the Trends in International Mathematics and Science Survey (TIMSS) and the Progress in Reading Literacy Study (PIRLS).

The first TIMSS assessment was conducted in 1995 and has been repeated every four years since with the most recent survey being conducted in 2011. TIMSS assesses achievement in mathematics and science at the fourth and eighth grade levels. PIRLS, an international comparative study of reading literacy among students in their fourth year of school (PIRLS Assessment Frameworks, 2010), was first conducted in 2001 and is completed every five years. Both assessments provide achievement data and extensive background for information about the availability of school resources and the quality of curriculum and instruction are provide participating countries with longitudinal measures of progress in educational achievement and empirical information about contexts related to schooling (TIMSS Assessment Frameworks,

2011;). According to the TIMSS & PIRLS International Study Center at Boston College, the purposes of the TIMSS and PIRLS are to determine educational standing in subjects essential for further learning, profile relative strengths and weaknesses in reading, mathematics and science in an international context, create trend lines to measure progress over time, inform national and local policy about school curricula and instruction, collect in-depth information about school environments, resources and instruction and examine concerns about equity in learning opportunities.

As explained by Rutkowski, Gonzalez, Noncas and von Davier (2010), TIMSS and PIRLS both apply complex two-stage clustered sampling designs. In Stage 1, schools are selected based on probability proportional to the school's size. Stage 2 consists of randomly choosing intact classes at the appropriate grade level, relative to the assessment in question. This process results in sample sizes, depending on the survey administered, of approximately 4000-6000 students per country (Mickelwright and Schnepf, 2007). While TIMSS focuses on content as expressed by numbers, geometric shapes and measures and data displays in addition to behaviors such as knowing, applying and reasoning, PIRLS content domains assess two types of reading, literary and informational and two behaviors, retrieving and interpreting (Shula and Wilson, 2009). In an effort to link national and international assessments, to provide states the means to measure their performance against international benchmarks, the NAEP-TIMSS Linking Study will be conducted in 2011. It is anticipated that the relationships found between the two assessments will permit states conducting the NAEP to project how they would have performed on the TIMSS and allow for comparisons with the results of other countries (IES, 2010).

While TIMSS and PIRLS seek to identify the extent to which students have mastered mathematics, science and reading as they appear in school curricula, the Programme for International Student Assessment (PISA) aims to capture student's ability to use knowledge and skills to meet real-life challenges. Hutchison and Schagen (2007) summarize these aims as TIMSS and PIRLS are inside the school trying to find out what makes them tick while PIRLS is on the street waiting to see what comes out.

Funded by the Organisation for Economic Cooperation and Development (OECD) in response to participating members demands for regular and reliable data relative to the knowledge of students and educational system performance, the PISA assessment measures the extent to which students have acquired the level of learning in reading, mathematics and science necessary for success in adult life (Hutchison and Schagen, 2007; Milford, Ross and Anderson, 2010; OECD, 2011). Testing between 4,500 and 10,000 students in each participating country, PISA is an internationally standardized assessment which is administered to 15 year-olds (OECD, 2011)

Each three year cycle assesses the three academic domains of science, reading and mathematics, but emphasizes assessment of an individual domain in each testing cycle (OECD, 2011; Hutchison and Schagen, 2007). Milford, Ross and Anderson (2010) note that while the "league tables" generated by PISA results have led to many nations making fundamental changes in their respective educational systems, NCLB's focus on student growth in curriculum or standards-based growth and its accompanying allocation of federal funding has limited its role as a reform tool in the United States. Student outcomes are divided into six achievement levels with Level 2 serving as a baseline proficiency level and Levels 5 and 6 serving as indicators of high performance. Additional performance distinctions are made relative to "highest performing" and

"lowest performing" students through the identification of students achieving in the ninetieth and tenth percentiles respectively (OECD, 2011). As with TIMSS and PIRLS, PISA utilizes a complex two-stage clustered sampling design although the second stage of PISA applies an approach that results in the random selection of a set number of students in a particular class (Rutkowski, Gonzalez, Noncas and von Davier, 2010).

Kamens and McNeely (2009) note that the spread of international testing has produced a unique system shaping dynamic as educators and political interests search for ways to improve their educational systems. While warning that simple comparisons of national performance provide the shallowest application of assessment data, McGraw (2008) notes that national expectations can be provoked by evidence that more is being done elsewhere. As the impact of international testing data on educational reform and system development continues to grow, Ramirez et.al. (2006) suggests that in an era of evidence-based policy formation, achievement indicators may not necessarily capture the full range of human capitol. Further stating that any developments based upon such measures should be carefully weighed. Failure to do so may end up creating a canvas upon which the committed can project whatever they want to see (Smithers, 2004)

Student Achievement Trends

In discussing the legislative reform efforts of state and federal authorities, considerations of various reforms and the availability of state, national and international assessments of academic performance, a glaring question remains. Has any of this made a difference in the level of achievement for students in the United States?

Linda Darling-Hammond (2010) comments that international data indicates that the United States is standing still while more focused nations move ahead. In 2006, as measured by

PISA, the United States ranked twenty-first out of 30 countries in science and twenty-fifth out of thirty in mathematics among countries in the OECD. This represents a drop in ranking and raw scores when compared to PISA results three years earlier. When countries from Eastern Europe and Asia, who are not members of OECD, are added to the list, the U.S. drops to twenty-nine of forty countries in science and placed thirty-fifth out of forty nations in mathematics (OECD, 2009).

International Comparisons

Broader generalizations, in regard to the performance of students from the U.S. in 2009, are noted by Fleischman et.al. (2010). The average U.S. scores in Reading Literacy and Science Literacy scores were not measurably different from the OECD average. In Mathematics Literacy, an average score of 487 was measurably lower than the OECD average of 496. Thirty percent of U.S. students achieved Level 4 in Reading Literacy while there was no measurable difference in the percentages of student reaching levels 5 and 6 relative to other OECD countries. At the opposite end of the Reading Literacy spectrum, 18 percent of U.S. students scored below Level 2. In Mathematics Literacy, 27 percent of U.S. students achieved Level 4, lower than the OECD average of 32 percent while 23 percent scored in Level 2 revealing no measurable difference from other OECD nations. Science Literacy outcomes indicate that U.S. student performance was not measurably different from the OECD average. Twenty-nine percent of U.S. students and their OECD peers scored at or below Level 4 and comparable percentages of U.S. and OECD averages placed 18 percent below Level 2 competencies.

In terms of international comparisons, OECD (Fleischman et.al., 2010) notes that U.S. fifteen year-olds, in 2009, performed around the international average in reading literacy (rank 14 of 34 participating nations) and science literacy (rank 17) and below average in mathematic

literacy (rank 25). Based on these outcomes, U.S. performance demonstrated significant gains in science through improvement at the bottom of the performance distribution while performance at the upper levels remained unchanged. Performance, since 2000, shows no significant improvement in the areas of mathematics and reading literacy. In direct comparisons, U.S. one percent of U.S. students reached Level 6 in science literacy, corresponding with the OECD average while Singapore, Shanghai-China, New Zealand, Finland and Australia averaged 3.68 percent. Nine percent of U.S. students achieve Level 5 in science again matching the average of OECD participants and well behind the 12 to 24 percent levels reached by ten other OECD nations. In mathematics, 10 percent of U.S. students attain Level 5. The OECD average is 13 percent. U.S. performance lags behind nine other OECD nations ranging from Shanghai-China at 50 percent and Belgium at 20 percent.

While the "league tables" or "horse race" nature of reviewing the ranking of international results capture the lion's share of media attention (Tucker, 2011), the U.S. Department of Education warns that findings from the various iterations of the TIMSS cannot be utilized as indicators relative to the success or failure of reform efforts. Due in part to the fact that reform efforts had started in the U.S. long before the implementation of international testing, the Department recognizes the difficulty in determining the effectiveness of policy, professional development, curriculum revision or instructional practices based on international assessment results. Noting instead the value of using international assessment results as a tool to be applied as the U.S. reflects on its own performance and works to improve educational opportunities for all students.

A review of TIMSS data from 2007 indicates that in fourth grade mathematics average scores of eight of thirty-six participating nations were significantly higher than those of U.S.

students, four nations results were not significantly different and twenty-three countries average scores were significantly lower than students from the U.S. Science results at the fourth grade level found the average scores in four participating countries significantly higher than the U.S., six nations were of no significant difference and twenty-five nations posted average scores significantly lower than the U.S. Eighth grade results were as follows, in mathematics five participating countries demonstrated average scores higher than the U.S, five national results were not measurably different and thirty-seven nation's average scores were significantly lower. In science, average U.S. scores were significantly lower than eight nations, indicated no significant difference from four nations and were significantly higher than the average scores of thirty-five other countries. (Gonzales, et.al. 2008).

Further analysis by Gonzales (2008) indicates that in 2007, U.S. fourth and eighth grade performance in science demonstrated no detectable change from average scores in 1995. A lower percentage of U.S. fourth-graders achieved at the advanced international benchmark than recorded twelve years earlier. Eighth grade results in science indicated that a lower percentage of students achieved the advanced international benchmark in 1999, but no such drop was observed when comparing achievement from 1995 to 2007. Mathematics results for both fourth and eighth-graders improved from 1995 to 2007 with fourth-graders scoring eleven points higher on the average and eighth-grade students raising the average score sixteen points from 1995. No measureable change in the number of fourth or eighth-grade students was noted in the percentage of students performing at or above the advanced international benchmark.

In 2006, the second PIRLS assessment was conducted as the second literacy study in the IEA's series of literacy assessments. The 2006 PIRLS report (Baer, et.al. 2007, Mullis, et.al. 2007) compares the performance of U.S. students to their international peers and examines how

fourth grade reading literacy has changed since the first administration of the PIRLS in 2001. Relative to the combined reading literacy scale, which represents a joint assessment of reading comprehension within two major reading purposes, literary and informational, average scores for U.S. students were significantly higher than the scores of students in twenty-two of forty-five jurisdictions taking the test, lower than ten jurisdictions and showed no significant difference the remaining participants in the study (Baer, 2007).

With an average scale score of 540, 542 in 2001, performance of students from the U.S. was significantly higher than the PIRLS scale average of 500, the two point drop in scores from 2001 to 2006 are not considered statistically significant (Mullis, et.al. 2007). Relative to the areas of reading comprehension in literary and informational aspects of PIRLS, U.S. average scale scores dropped significantly in reading for literary purposes, from 550 in 2001 to 541 in 2006. In the area of reading for informational purposes, U.S. scores rose to 537 from 533, in the five years between assessments. 2006 scores, as compared to 2001, were well within the standard deviation (Mullis, et.al. 2007).

Review of U.S. achievement, relative to the 2006 PIRLS international benchmarks, indicates that U.S. students exceeded the international medians in the advanced, high, intermediate and low benchmarks with 12 percent of U.S. students achieving the advanced level, 47 percent achieving high or better, 82 percent achieving the intermediate benchmark or higher and 96 percent at or above the low international category. By comparison, the international median percentages were seven, forty-one, seventy-six and ninety-four respectively (Mullis, et.al. 2007). Overall, between 2001 and 2006, no measureable differences in the combined reading literacy scale or on the literary or informational subscales were noted (Baer, et.al. 2007).

NAEP Results

According to the U.S. Department of Education, the latest NAEP mathematics scores were released in the fall of 2009 while reading scores were released early in 2010. The next administration of the main NAEP reading and mathematics assessments will be initiated in October of 2011 and will conclude in March of 2012 (Rampey, Dion and Donahue 2009; Loveless, 2010).

Rampey, Dion and Donahue (2009) note that since 2004 average reading scores generally increased for the nine, thirteen and seventeen year-olds taking the NAEP. Average scores were twelve points higher for nine year-olds when compared to 1971 and four points higher for thirteen year-olds. Average reading scores for seventeen year-old students were not significantly different than scores from 1971. In mathematics, average scores for the lower two age groups increased over 2004 results while seventeen year-olds demonstrated no significant change. Since 1973, nine year-old student scores increased twenty-four points and scores from the thirteen year-old age bracket rose fifteen points over the same period. Average scores for seventeen year-olds in 2008 did not prove to be significantly different than those from 1973. While Secretary of Education, Arne Duncan claimed the 2009 results demonstrated the need for education reforms that would accelerate achievement, David Driscoll of the NAGB argued that the results indicated teachers need better training. Finally, noting that most gains were achieved prior to the implementation of NCLB, Mark Driscoll, of the American Institutes of Research and educational historian Diane Ravitch each claim that the 2003 to 2009 results were bad news for supporters of NCLB driven reforms (Loveless, 2009)

Viewing mathematics and reading score trends, for all three age groups, since 1971, Rampley, Dion and Donahue (2009) note that seventeen year old's average scale scores in reading trend from 285 in 1971, moved to significantly higher levels from 1984 to 1999 until

settling back to 286 in 2008. Scale scores in mathematics for the same age group start at 304 in 1973, dip to 298 in 1982, before reaching a high of 308 in 1999 and then dropping to 306 in 2008 For thirteen year old students, reading results demonstrate a general increase from 255 to 260 over the period from 1971 to 2008. Mathematics scale scores for the same age group indicate a similar trend as average scale scores rose from 266 in 1973 to 281 by 2008. Finally, nine year-old student's average scale scores in reading indicate a steady rate of improvement from 208 to 220 over the course of thirty-seven years of data and similar results in mathematics as average scale scores rose from 219 in 1973 to 243 in 2008.

Another way of looking at long term trend NAEP data is put forth in a study by the Brown Center on Educational Policy (Loveless, 2009) wherein changes in the gap between students in the top tenth percentile and the bottom tenth percentile are reviewed. This study notes that from 2004 to 2008, the 90-10 gap contracted for all four age-subject combinations. 90-10 gap contractions of similar size were noted in the earliest testing intervals between 1971 and 1982. Minor, offsetting changes occurred during the 1990s as the biggest expansions in the gap occurred from 1988 to 1990 and from 1980 to 1984. Reading was the only subject tested during those intervals. In general, the 1980s indicate a contraction of the mathematics gap but growing 90-10 gaps, especially for nine year-olds, in reading.

SAT and ACT Performance

Noting, again, that the SAT and ACT tests are primarily used to gauge analytical ability rather than subject mastery or for student to student comparisons and predictive measures of potential college success, although researchers often apply their results as relative measures of

student achievement (Geiser, 2009; Atkinson and Geiser, 2009; Clark, Rothstein and Schanzenbach, 2009 and Messina, 2008).

Further review of student performance, relative to the SAT, indicates significant changes in ethnic and language diversity as well as gender differences wherein females continue to be the majority of test takers (College Board, 2010). Utilizing a 200-800 point scoring scale in each subject test, 1966-67, mean scores in reading reached 543 and 516 in mathematics. Reading scores remained at or near the 543 mark until 1971-72 when scores dropped to 509 in 1977 and have fluctuated from 499 to 507 through 2010. Mean scores in mathematics start at 516 in 1966, reached a high of 517 in 1969, dropped below 500 in 1980 and maintained mean averages between 492 and 508 through 1996. In 1997 mathematics mean scores advanced beyond 511, rose to a high of 520 in 2005 before stabilizing at 515-516 from 2007 through 2010 (College Board, 2010; Snyder and Dillow, 2011).

SAT score distributions, comparing 1996 and 2010 scores, as presented by the College Board (2010, 1996) indicate Verbal scores in 1996 with approximately 21percent of all students scoring 600 or higher, 63 percent of all students scoring 400-600 and 15 percent of all students scoring less than 400. Math scores from 1996 range from 23 percent of test participants scoring higher than 600, 61 percent from 400-600 and 16 percent less than 400. 2010 scores breakdown as follows for Critical Reading and Mathematics. 20 percent of all participants scored higher than 600 in Critical Reading, 62 percent between 400 and 590 and 17 percent scoring less than 400. In mathematics, distributions similar to 1996 are in evidence with 25 percent of all participants scoring higher than 600, 60 percent scoring 400-590 and 15 percent scoring below 400.

Percentile breaks for Verbal and Critical Reading scores, for 1996 are as follows, 75th 580, 50th 510 and 25th 430. In mathematics percentile breaks were 580,500 and 430 respectively. In 2010, scores in Critical Reading, for 75th to 50th and 25th percentiles are as follows, 580, 500 and 420. 2010 mathematics cut scores for the same percentiles were 600,510 and 410.

ACT mean score trends from 1967 through 1989 show a composite score for all test participants of 19.9 in 1967, dropping to 18.5 in 1970 and maintaining mean scores between 18.3 to 18.7 through 1989. Scores after 1989 are not comparable to later scores due the introduction of a new version of the ACT (Snyder and Hoffman, 1995). Mean composite scores from 1990 to 2010 start at 20.6, rise to 20.8 in 1994 and then fluctuate from 20.8 to 21.1 through 2010. (Snyder and Hoffman, 1995; Snyder and Dillow, 2011).

Again referring to the work of Snyder and Hoffman (1995) and Snyder and Dillow (2011), from 1967 through 1989 13 to 14 percent of all students achieved a composite score of 26 or higher while on the average 32 percent of all students achieved a composite score of less than 15. After 1989 through 2010, the percent of students with composite scores of 28 or higher ranged from 10 to 13 percent as the percent of composite scores of 17 or below bounced between 25 and 28 percent.

College Benchmark Readiness Scores, as defined by ACT.org (2010) relate to minimum scores on an ACT subtest that indicate a 50 percent chance of obtaining a B or higher or about a 75 percent chance of obtaining a C or higher in the corresponding credit-bearing college courses. Comparison between 2005 results and 2010 outcomes show slight variations (ACT.org, 2010). In 2005, 68 percent of all test takers met the college readiness benchmark in English, 51 percent in reading, 41 percent in mathematics and 26 percent in science. Twenty-one percent of all test participants reached the College Readiness Benchmarks in all four content areas. In 2010,

benchmarks results demonstrated 66 percent of students reaching the benchmark in English, 52 percent in reading, 43 percent in mathematics and 29 percent science. Twenty-four percent of all students demonstrated benchmark success in all four ACT subtests.

Missouri Achievement Results

A review of statewide mastery of key skills, in math and reading, as defined by the Missouri Mastery Achievement Test (MMAT) from 1988 through 1999, demonstrate the following. Second grade math scores indicate percentages of key skill mastery of 87.5 percent in 1988 and 1991, 83.3 percent in 1994 and 1997 and 91.6 percent in 1999. Reading scores for second grade, in the same years, indicate the following levels of mastery achievement 78.9 percent in 1988 and 1991, 76.4 in 1994, 1997 and 1999.

Sixth grade math scores, over the same time period, reveal levels of key skill mastery at 65.3 percent in 1988, 69.2 percent in 1991, 62.5 percent in 1994, 68.5 percent in 1997 and 75 percent in 1999. In reading, mastery levels show students at 72 percent in 1988, 76 percent in 1991, 70 percent in 1994 and 75 percent in 1997 and 1999. Sixth grade mastery levels in reading demonstrate trends similar to math with 72 percent mastery in 1988, 76 percent in 1991, 70 percent in 1994 and 75 percent in 1997 and 1999.

Tenth grade math mastery in 1988 shows dramatic differences from sixth grade achievement levels of the same year as 47.8 percent achieve key skill mastery results. 1991 results show 40 percent mastery achievement with 1994 and 1997 results indicating 46.6 percent of tenth graders reaching mastery levels. 1999 results demonstrate mastery achievement of 59 percent. Reading scores indicate better mastery results overall but slight declines over time as 68.9 percent of Missouri tenth graders achieved mastery levels in 1988, 59 percent in 1991, 63.3 percent in 1994, 63.6 percent in 1997 and 59 percent in 1999.

Moving from mastery designations to identified levels of proficiency presents an interesting challenge in reviewing historical MAP results as the data are divided into two periods. “Grade span” data is used from 1997-2005 while “grade level” applications have been utilized from 2006 to the present. During the grade span period, the test was administered in three grades per content area with proficiency identifiers in five levels. Grade level achievement tests are administered to grades three through eight utilizing four achievement levels. OSEDA, DESE and CTB McGraw-Hill all concur that achievement levels from the two periods are not comparable (K. Jamtgaard. Personal communication. August 23, 2011)

In looking at MAP scores in mathematics and communication arts from 1997 to 2011, Fourth grade math scores reveal 34.1 percent of students in this grade scored proficient or advanced in 1997. Incremental increases move the percentage of proficient/advanced achievement to 43.0 in 2005. Changing from five designated levels of achievement in 2005 to four levels in 2006 led some to claim that Missouri had lowered its standards in order to maintain adequate yearly progress as defined under NCLB. Even so, fourth grade math proficient and advanced percentages, which were 44.0 percent in 2006, rose to 51.7 percent in 2011.

Eighth grade and tenth grade percentages of proficient or better performance show significant drops in performance levels when compared with fourth grade achievement as eighth and tenth grade students achieving proficient or advanced performance in 1997 were at 13.4 and 11.4 percent respectively. Repeating the trend observed in fourth grade mathematics, both eighth grade and tenth grade percentages of proficient and advanced performance demonstrate limited improvement as 2005 eighth grade levels of proficient/advanced performance reached 15.5 and tenth grade performance rose to 16.6. Upon implementation of the four levels of achievement in 2006, claims of lowering standards are repeated as 44.7 percent of Missouri’s eighth graders

scored proficient or better and tenth grade math achievement jumped to 42.5 percent proficient or advanced. By 2011, eighth grade mathematics levels of proficient/advanced performance were noted at 51.7 percent. No tenth grade statistics are noted beyond 2010 as Missouri implemented End of Course (EOC) examinations for high school students in that same year.

Communication arts scores indicate trends similar to those seen in mathematics as 1997 proficient and advanced percentages for third, seventh and eleventh grade are established at 28.6, 30.2 and 20.6 respectively. Improvements in all three grades by 2005 appear limited as proficient and advanced achievement percentages reached 35.2 percent for third grade, 32.6 percent for seventh grade and 22.9 percent for eleventh grade. As seen in the mathematics scores, implementation of four levels of achievement in 2006 moved proficient and advanced percentages to 43.4 percent for third graders, 43.9 percent for seventh grade students and 42.7 percent for eleventh graders. Four years later, 2011 the percentage of third graders achieving proficient or advanced status stood at 45.0 percent and seventh graders rose to 54.7 percent. Again, with the advent of EOC examinations in 2006, no eleventh grade proficiency levels are noted.

In the absence of nationally defined proficiency levels, adequate yearly progress (AYP) requirements, as noted under NCLB, stipulate that all public school students reach proficiency in mathematics and communications arts by 2014. In the absence of any nationally standardized definitions of proficiency, achievement of designated proficiency levels is determined by individual state achievement assessments. In Missouri, the MAP assessment serves as the measuring stick for achieving AYP.

Beginning in 2002, NCLB defined gradually increasing annual proficiency targets with the 2014 proficiency target reaching 100 percent. In 2002 the annual proficiency target for

communication arts was set at 18.4 percent with annual increases reaching 26.6 percent by 2005, 51.0 percent in 2008 and 75.5 percent in 2011. Missouri student proficiency levels, for all student groups were at 30.7 percent in 2002, 26.6 percent in 2005, 45.7 percent in 2008 and54.6 percent in 2011. It is important to note that statewide proficiency levels rose from 30.4 percent in 2005 to 43.7 percent in 2006 as MAP achievement levels were adjusted from five levels to four in 2006. The 13.3 percent increase from 2005 to 2006 represents the largest annual increase in proficiency levels since 2002.

Similar trends are noted in mathematics AYP data as annual proficiency targets rose from 8.3 percent in 2002 to 17.5 percent in 2005, 45.6 percent in 2008 and 72.5 percent in 2011. Actual proficiency level achievement for the same years tallied 21.1, 24.7, 46.7 and 54.2 percent. Again, it is notable that proficiency levels in 2006 rose 18.6 percent in comparison to 2005 as five achievement levels on the 2005 MAP assessment were consolidated to four in 2006 producing the largest annual increase in proficiency levels since 2002.

Summary

Recent history notes that calls for school reform have resonated since the 1980's (Valentine et al. 2004; Zhao, 2009) bringing forth national commitments to various reform efforts and statewide accountability systems culminating in 2002 with the passage of No Child Left Behind (Payne, 2008). A closer look reveals, however, that reform and restructuring efforts have long been part of the development of the educational system in the United States and show no signs of slowing down. Yet, despite literally decades of changes in policy and structure, billions of dollars spent on facilities, instructional programs, and human capital, achievement data from state, national and international measures cannot point to significant, scalable and sustained system-wide improvements in student achievement (Ravitch, 2010; Loveless, 2010;

Finn, 2008; Hill, 2007; Elmore, 2004). Still, there are schools and districts that demonstrate slow, but sustained progress in improving student academic performance (Payne, 2008). In a context where problems are constants and answers are provisional (Sarason, 1990), perhaps it would be instructive, even beneficial, to identify what is working in Missouri schools as educators prepare today's students for a world dramatically different from that which their parents entered a generation ago.

Chapter 3

Method

Rationale

While policy making is characterized by considerable change, the study of public policy is as ancient as human civilization itself (Birkland, 2005; McCool, 1995). In the case of educational policy and the reforms created by numerous policy decisions, real questions exist as to whether the nation's educational system can provide the type and quality of education needed to sustain a productive and prosperous future.

In considering the demands placed on the American education system, Hess (2010) notes the abundance of complaints claiming that our schools fall short when it comes to basic skills, science and advanced math, combating childhood obesity, closing racial achievement gaps, promoting community service, teaching the arts and a multitude of other aspects. Claiming that after nearly a century of successfully universalizing education, schools are now asked to take on additional responsibilities for increasing numbers of students without asking why schools, after being asked to be everything for everybody, find it so difficult to be exceptionally good at anything. Clearly, determining the quality and effectiveness of education is complex, difficult to demonstrate and even harder to fully understand (Zhao, 2009). Understanding what is at stake, how we might meet looming challenges and ultimately develop systems capable of responding to diverse demands may require what Sarason (1990) refers to as multiple levels of understanding prompted by asking ourselves how education came to be a problem, currently and in the recent past, inquiring if this problem has occurred previously, identifying what was done about it and determining to what effect in addition to deriving a conclusion as to whether the problem is cyclical or constant. All of this within a social context characterized by good intentions, varying

visions of purpose, challenges that defy singular solutions and processes that rarely stimulate immediate results in what Tyack and Cuban (1995) describe as a system in which reform is more likely to add to the complexity rather than replace what is already established.

Fullan (2007) provides a brief history of educational reform describing the late 1950's through the 1960's as an adoption era where innovations flooded the system in the hopes that external ideas would bring about improvement. During the 1960's education was viewed as the appropriate vehicle to ameliorate numerous social inequalities. Not much progress was made during the 1970's, but renewed interest in school reform during the 1980's, under the banner of accountability, increased the pressure for change, but not necessarily the reality. Large-scale efforts at reform intensified through the 1990's progressing to a point where although we may be less naïve than in the past, society and the challenges of reform have become more complex.

In an effort to meet increasing educational demands, the result of this "intensification" has created an environment of accelerated policy creation, program implementation and progress monitoring, coupled with increasing accountability, responsibility and liability for institutions and the individuals working on behalf of America's students. Consequently, it is reasonable to question whether, as Elmore (2004) points out, our capacity to implement and sustain reform has exceeded our capacity to solve the problems that undermine the effects of reform. After over half a century of mounting demands and escalating application of possible solutions, perhaps it is past time to stop, sort through the haze and determine what, programs, practices or policies are actually making a difference in our schools.

Statement of the Problem

Schools are asked to address a broad scope of student development. Physical, emotional and social issues walk hand in hand down the hallways with reading, math, science and history.

America's school system has expanded enormously since World War II and now serves the needs of an immense range of students. This increased diversity has created many opportunities, but also many dilemmas and debates over how to distribute resources and design curricula to meet the needs of students from diverse backgrounds, skills and interests. Research has determined that even successful reform efforts are fundamentally flawed as we have come to understand that the process of educational reform is much more complex than anticipated (Fullan, 2007). Given the composite nature of the relationship between teaching, learning and the needs of society, simple solutions are elusive. Change may be the imperative, but where to start?

Despite decades of state and federal concern and legislative action, volumes of rhetoric about performance, standards, accountability and competitiveness, the investment of billions of dollars in financial resources and countless hours of training, instruction and assessment dedicated to resolving an apparent crisis in American education, critical questions remain. Have reform efforts made a difference? More specifically, what reforms are making a difference? Thumb through any education association catalog and one will note there is no shortage of available initiatives, programs or services that claim improved student performance. If we agree with the basic notion that schools can have a tremendous impact on student achievement, if they follow the direction provided by the research (Marzano, 2003), perhaps it would be wise to take a look at a series of reforms and initiatives, currently in place, in an effort to determine if their application is achieving the intended outcome.

Purpose of the Study

The purpose of this study was to identify commonly implemented school reform initiatives in relatively small Missouri school districts and determine the degree of relationship between those commonly implemented efforts and student academic success. The primary method of analysis

was quantitative, with survey data being used to determine, collectively and by grade level (a) commonly implemented reform initiatives in the school's represented in this study; (b) the amounts of fiscal and human resources invested in the implementation of those initiatives; (c) the stages of implementation of the initiatives; (d) the perceived levels of impact of the initiatives on academic success of the students in those schools; (e) if any significant relationships existed between full years of implementation, personnel hours, dollars spent, average daily attendance, superintendent perceived impact, percent of students passing communication arts, percent of students passing mathematics and persistence to graduation; (f) if those relationships were noticeably different across the major grade levels of elementary, middle, and high schools?

Research Questions

Two research questions were examined during the completion of this study. The first research question was analyzed from descriptive data about the reform initiatives reported by the responding school districts. The second was analyzed using correlational relationships for those same reported initiatives.

1. Collectively and by grade levels, what were the commonly implemented reform initiatives in the school's represented in this study, what were the amounts of fiscal and human resources invested in the implementation of those initiatives, what were the stages of implementation of the initiatives, and what were the perceived levels of impact of the initiatives on academic success of the students in those schools?
2. Were there significant correlational relationships between full years of implementation, personnel hours, dollars spent, average daily attendance, superintendent perceived impact, percent of students passing communication arts, percent of students passing

mathematics and persistence to graduation and were those relationships noticeably different across the major grade levels of elementary, middle, and high schools?

Null Hypotheses

The following hypotheses were tested in this study:

H_{01} (ES): There are no correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives in the elementary school setting.

H_{02} (MS) : There are no correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives in the middle school setting.

H_{03} (HS): There are no correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively impacted student success, and student achievement as measured by the percent of

students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives implemented in the high school setting.

H_{04} (ALL): There are no correlational relationships between the study variables of years of full implementation, personnel hours, dollars spent, stage of implementation and the Superintendent's perceived level of impact of the initiatives when all of the initiatives were analyzed.

Population and Sample

This study examined the relationships between the presence, time, financial investment and perceived effectiveness of selected reform efforts and student achievement. Missouri school districts, with K-12 student populations between 500 and 2000 students were selected. These schools were identified through the Missouri Department of Elementary and Secondary Education Directory (DESE, 2011). Superintendents from eighty-one school districts responded to the survey. The survey data were collected in the winter of 2011 aggregated and analyzed as a group. The student achievement data, 2011 Communication Arts MAP and Mathematics MAP tests, attendance data, graduation rates and annual performance reports were gathered in the winter of 2011 as reported by the Missouri Department of Elementary and Secondary Education (DESE, 2011).

Procedure

To accomplish the purpose of this study, the following general procedures were followed. For all statistical tests, the level of significance was set at a probability level of .05.

1. Descriptive data about reform initiatives were analyzed to determine the amount of fiscal and human resources invested in the implementation of identified initiatives, the stages of implementation and the perceived level of impact on student academic success.

2. Correlational relationships between the factors of reform and student academic success were analyzed.

Instrumentation

The independent data for this study were derived from the following sources. Student performance data were gathered from each participating district's 2011 Annual Performance Report as reported by the Missouri Department of Elementary and Secondary Education. Content area achievement statistics, attendance rates and graduation rates were also obtained from the Annual Performance Report.

Survey data were collected through an instrument developed for this study wherein superintendents were asked to identify quantitative measures of school or district commitment to fully implemented reforms or initiatives and one qualitative measure of the superintendent's perception of the identified reform or initiative's impact on student academic success. The data survey requested the following information.

1. Reforms or initiatives fully implemented in individual schools or for the district.
2. Time committed to the reform or initiative including how long the reform or initiative had been fully implemented within the building or district and the amount of time allotted annually to faculty and staff in support of the identified reform or initiative.
3. Fiscal investment of the district in materials, substitute teachers, training or professional development and travel expenditures.

Time and fiscal resource data were reported by each participating superintendent as specific figures. Perceptual data about the impact of each reform or initiative were recorded using an ordinal scale delineating four levels of impact on student academic success.

Data Collection

School reform data were collected in the winter of 2011. One hundred and eighty-seven Missouri school districts, with student populations of 500-2000 students were selected and asked to participate. Superintendents from eighty-one school district responded to the survey for a response rate of 43.32 percent. Student achievement data, based on 2011 student performance, were collected in the winter of 2011.

Each superintendent was provided with (a) an explanation of the study, (b) an explanation of the potential respondent's rights as approved by the University Institutional Review Board for Human Subject Research and (c) a postal-mailed paper copy of the survey. Appendix A includes a copy of the recruitment letter. Appendix B includes a copy of the school reform and relevant factors survey. The mailing addresses of each district superintendent was obtained from the public data-base of Missouri schools reported on the web site of the Missouri Department of Elementary and Secondary Education.

Data from the superintendents who participated in the state-wide study of school reform and student achievement were compiled into a data set. For the purposes of this study, the school reforms and relevant factors associated with them were matched by school with the student achievement data for each school. The achievement data used for this study were obtained from the website of the Missouri Department of Elementary and Secondary Education. The achievement data used for this study were from the state assessment administered in the spring of 2011 and each participating school district's 2011 Annual Performance Report.

Data Analyses

All data for this study were collected from either the district superintendents or the open records of the Missouri Department of Elementary and Secondary Education. The data were

organized in Excel spreadsheets and then analyzed according to the hypotheses previously listed. The findings of these analyses are presented in Chapter 4.

Chapter 4

PRESENTATION AND ANALYSIS OF DATA

Introduction

In considering how national standards, increased access to technology, multiple reform initiatives, political influences and rapidly changing expectations impact the outcomes of schooling, it may be helpful to bear in mind the history of educational reform and its role in local, state and national efforts to improve student academic success. The development of intellectually safe and respectful places, the distribution of authority and responsibility, the maintenance of high expectations and the means to attain them may serve as preparation for civic life (Rose, 2010), but within this framework education functions as a social endeavor funded and regulated through numerous levels of government, directed from multiple centers of authority and subject to the unique preferences, pressures and timelines created by multiple policy decisions and applications (Cohen, 1982).

Comprehensive federal education legislation took a significant step forward in what has been described as the beginning of federal involvement in K-12 education with the passage of the National Defense Education Act of 1958 (Zhao, 2009). The purpose of this legislation was to ensure that highly trained individuals would be available to help America compete with the Soviet Union in the scientific and technical fields following the launch of the Soviet satellite *Sputnik*. Today, under the stipulations of No Child Left Behind, the nature of schooling has been changed as standardized test scores have become the primary measure of school quality (Ravitch, 2010). Increasing accountability for schools has numerous states seeking relief through waiver application processes even as multiple reform efforts are applied to improve educational outcomes.

Ten years after the passage of No Child Left Behind, the educational performance of America's youth continues to be cause for considerable concern (Morrell and Noguera, 2010). Numerous articles, research findings, position papers and books note that student performance, in the United States, in math and reading remains low even though many perceive that instruction and supervision of our students is conducted with relative effectiveness (Leana, 2011; Schmoker, 2006). International assessment results highlight worrisome rankings of American students among their international peers (Morrell and Noguera, 2010; Tucker, 2011; U.S. Department of Education, 2006). Roughly three in ten public school students fail to complete high school and graduation rates of some minorities are at or near 50 percent (The Editorial Projects in Education Research Center, 2010). A review of educational reform reveals repeated themes as local, state and federal energies and resources are expended in trying to regain scientific and technological preeminence, promote equal access, broaden access to higher education, raise academic performance standards and accountability, close achievement gaps and enhance global competitiveness.

After billions of dollars in expenditures and years of effort to reform instruction, structure, governance, assessment and teacher development, why do the problems of improving education appear so intractable (Hill, 2007; Loveless, 2010)? In contemplating the appropriate response to that question, perhaps it would be wise, as Hess (2010) notes, to consider that while today's reformers believe most students have the ability to succeed at high levels and that education possesses the capacity to trump social and family realities, today's educational ambitions represent a profound break with historic norms. Given that such aspirations are barely a few decades old, it is important to ask whether aged public bureaucracies are equipped to discharge a modern agenda.

Purpose of the Study

The purpose of this study was to identify commonly implemented school reform initiatives in relatively small Missouri school districts and determine the degree of relationship between those commonly implemented efforts and student academic success. The primary method of analysis was quantitative, with survey data being used to determine, collectively and by grade level (a) commonly implemented reform initiatives in the school's represented in this study; (b) the amounts of fiscal and human resources invested in the implementation of those initiatives; (c) the stages of implementation of the initiatives; (d) the perceived levels of impact of the initiatives on academic success of the students in those schools; (e) if any significant relationships existed between full years of implementation, personnel hours, dollars spent, average daily attendance, superintendent perceived impact, percent of students passing communication arts, percent of students passing mathematics and persistence to graduation; (f) if those relationships were noticeably different across the major grade levels of elementary, middle, and high schools?

Research Questions

Two research questions were examined during the completion of this study. The first research question was analyzed from descriptive data about the reform initiatives reported by the responding school districts. The second was analyzed using correlational relationships for those same reported initiatives.

1. Collectively and by grade levels, what were the commonly implemented reform initiatives in the school's represented in this study, what were the amounts of fiscal and human resources invested in the implementation of those initiatives, what were the stages of implementation of the initiatives, and what were the perceived levels of impact of the initiatives on academic success of the students in those schools?

2. Were there significant correlational relationships between full years of implementation, personnel hours, dollars spent, average daily attendance, superintendent perceived impact, percent of students passing communication arts, percent of students passing mathematics and persistence to graduation and were those relationships noticeably different across the major grade levels of elementary, middle, and high schools?

Null Hypotheses

The following hypotheses were tested in this study:

H_{01} (ES): There are no correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives in the elementary school setting.

H_{02} (MS) : There are no correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives in the middle school setting.

H_{03} (HS): There are no correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the

reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives implemented in the high school setting.

H_{04} (ALL): There are no correlational relationships between the study variables of years of full implementation, personnel hours, dollars spent, stage of implementation and the Superintendent's perceived level of impact of the initiatives when all of the initiatives were analyzed.

Descriptive Findings

Missouri school districts, with student populations of 500 – 2000 were invited to participate in this study. Using 2010-2011 enrollment data from the Missouri Department of Elementary and Secondary Education, 187 potential responding districts were identified. A letter explaining the study, related data table and instructions for completion of the data table were provided to the superintendents of the sample group. Examples of these documents are available in Appendices A and B. Initial contact was made through direct mailing with follow-up telephone calls made two weeks after the initial mailing. Eighty-one superintendents returned completed data tables for a response rate of 43.32%. Each district was allowed to note up to five individual initiatives aimed at improving student academic success. The number of initiatives in place, in the responding districts, totaled 297. The average number of initiatives per district was 3.67. These figures are presented in Table 1.

Table 1

Response Rate and Initiatives Identified

Whole Sample	
Number of districts with populations of 500 – 2000 students	187
Number of districts submitting completed data table	81
Percent of districts submitting a completed data table	43.42
Total number of initiatives reported	297
Average number of initiatives implemented per school district	3.67

In addition to identifying up to five initiatives that were part of the district's efforts during the 2010-2011 school year, each superintendent was asked to identify the grade level at which the initiative was implemented, estimate the total district fiscal investment in each initiative and the total number of personnel hours invested in support of the initiative. In addition, responding superintendents were asked to identify the degree of implementation of each initiative as either studying, in progress or fully implemented. Data relative to the superintendent's perception of the impact of the initiative was noted as either no impact, slight impact or strong impact.

For all initiatives in the sample, expenditures totaled $7,326,323. Average expenditure per district was calculated to be $90,448.43. Average expenditure per initiative reached $24,667.65. The estimated number of hours invested in support of the various initiatives reached 377, 970. Average hours invested per district were calculated at 4,666.30 with an average of 1,276.93 hours invested in each identified initiative. These figures are presented in Table 2.

Table 2

Financial and Personnel Hours Invested - Whole Sample

	Total (N=297)	Average/District (N=81)	Average/Initiative
Fiscal Investment	7,326,323	90,448.43	24,667.75
Personnel Hours	377,970	4,666.30	1,276.93

Of the 297 initiatives identified, 18 initiatives, representing 6.06 percent of the total were categorized as being in the "studying" stage, 133 initiatives, 44.78 percent of the total, were identified as being in-progress while 146 initiatives, representing 49.16 percent were fully implemented. Responding superintendents reported their perceptions of impact as 15 initiatives having no impact on student academic success, 104 having slight impact and 178 having strong impact. The totals and percents for the categories of implementation and perceived impact are provided in Table 3.

Table 3

Stage of Implementation and Perceived Impact (All Reported Initiatives)

	Number (N-297)	Percent
Implementation		
Studying	18	6.06
In-progress	133	44.78
Fully Implemented	146	49.16
Perception of Impact		
No Impact	15	5.05
Slight Impact	104	35.02
Strong Impact	178	59.93

A rank order of the initiatives most commonly implemented provides insights into the type of initiatives present throughout the study schools. Professional Learning Community initiatives occurred most frequently with 56 initiatives implemented at various stages, followed by Response to Intervention with 35 initiatives, 27 Positive Behavior Support initiatives, 19 Targeted Intervention efforts, 9 High Schools That Work programs, 7 eMINTS initiatives, 7 reported Literacy Teams, 5 Reading First programs, 5 district or building Data Teams and 4 Credit Recovery initiatives. In all, the top ten initiatives represent 174 of the 297 initiatives reported. The top ten implemented initiatives represent 58.59 percent of the total number of reported reform efforts. In comparison to the total number of initiatives reported, the percentages of the top ten most frequently reported initiatives implemented ranged from Professional Learning Community reforms with 18.86 percent to Credit Recovery garnering 1.35 percent of the 297 initiatives reported. The data, reported in Table 4, provide initiative counts and percentages of those initiatives when compared to the top 10 and the total initiatives.

For the top ten initiatives reported, total fiscal investment reached $4,171,677. This figure represents 56.94 percent of all initiatives reported. Average expenditure, per initiative, is calculated at $23,975.16. Personnel hours invested in the ten most reported initiatives totaled 252,835. Relative to the total number of personnel hours invested in all identified initiatives, the ten most reported reform efforts account for 66.89 percent. On the average, each district invested an estimated 1453.07 hours per initiative as compared to 1276.93 hours for all initiatives reported. These figures are reported in Table 5.

Table 4

Top 10 Reported Initiatives (Ranked)

Initiative	Number	Percent of Top 10 (N=174)	Percent of Total (N=297)
PLC	56	32.18	18.86
Response to Intervention	35	20.11	11.78
Positive Behavior Support	27	15.52	9.09
Targeted Intervention	19	10.92	6.40
High Schools That Work	9	5.17	3.03
eMINTS	7	4.02	2.36
Literacy Teams	7	4.02	2.36
Reading First	5	2.87	1.68
Data Teams	5	2.87	1.68
Credit Recovery	4	2.30	1.35

Table 5

Financial and Personnel Hours Invested – Top 10 Reported Initiatives

	Total (N=174)	Average/Initiative	Percent of Total (N=297)
Fiscal Investment	4,171,677	23,975.16	56.94
Personnel Hours	252,835	1453.07	66.89

In reviewing the degree of implementation and perception of impact data for the ten most reported initiatives, 8 of the 174 reported reforms were implemented at the "studying stage," representing 4.60 percent of the initiatives in this category. Eight-three initiatives were considered to be "in progress" while the remaining 83 initiatives were described as "fully

implemented." Each of the remaining implementation designations accounted for 47.70 percent of the 174 initiatives reported. The total sample data indicated that out of 297 reported initiatives 18, (6.0 percent), were being studied, 133 (44.7 percent) were in progress and 146 identified reforms (49.1percent) were fully implemented. Superintendent perceptions of impact noted that 4 of 174 initiatives, (2.30 percent) were seen as having no impact, 65 (37.36 percent) perceived as having a slight impact on student academic success and 105 reform efforts were believed to have a strong impact on student academic success. For the total sample 15 of 297 initiatives, accounting for 5.05 percent of the total, were reported as having no impact, 104, (35.02 percent) reforms were seen as having a slight impact, and the remaining 178 (59.93 percent) were believed to have a strong impact on student academic success. Table 6 includes the "levels of implementation" and "perceived impact findings" of the top ten most reported initiatives compared to the total sample.

Table 6

Stage of Implementation and Perceived Impact (Top 10 and All Reported Initiatives)

	Top 10 Number (N=174)	Percent	All Number (N=297)	Percent
Implementation				
Studying	8	4.60	18	6.06
In-progress	83	47.70	133	44.78
Fully Implemented	83	47.70	146	49.16
Perception of Impact				
No Impact	4	2.30	15	5.05
Slight Impact	65	37.36	104	35.02
Strong Impact	105	60.34	178	59.93

As previously noted, superintendents were asked to identify the building levels or combination of building levels in which each initiative was implemented. The categories included elementary school (ES), middle school (MS), high school (HS), elementary school and middle school (ES/MS), middle school and high school (MS/HS), elementary school and high school (ES/HS) and finally all grade levels (ALL). The findings as they apply to the number of districts reporting initiatives at each building level are presented in Table 7. Eighty-one elementary initiatives were reported by 57 school districts, middle school initiatives, reported by 25 separate districts totaled 31, 33 high school initiatives were found in 27 reporting districts, elementary and middle school reform efforts totaled 31 in 27 reporting districts while middle school and high school combinations found 8 initiatives present in 8 districts, elementary and high school combinations totaled 2 programs in 2 district. Initiatives implemented across all grade levels totaled 111 and were spread across 67 reporting districts.

Table 7

Initiatives Reported by Building Level

Descriptor	ES	MS	HS	ES/MS	MS/HS	ES/HS	ALL
Number of Districts (N=81)	57	25	27	27	8	2	67
Percent of Districts Reporting	70.37	30.86	33.33	33.33	9.88	2.47	82.71
Number of Initiatives (N=297)	81	31	33	31	8	2	111
Percent of Initiatives Reported	27.27	10.44	11.11	10.44	2.69	0.06	37.37
Average Initiatives/District	1.42	1.24	1.22	1.15	1.0	1.0	1.66

Fiscal investment findings in the 297 reform initiatives for this study across all reporting districts totaled $7,326,323 spent during the 2010-11 school year. Initiatives implemented in

elementary schools accounted for $1,699,080, or 23.19 percent of all expenditures, middle school expenditures totaled $869,545, or 11.87 percent of all expenditures. High school initiatives totaled $401,140 representing 5.47 percent of all reform spending. Elementary and middle school level initiatives accounted for $900,900 in total spending and 12.30 percent of gross expenditures. Middle school and high school combinations invested $60,250 in 2010-11 accounting for 0.82 percent of total cash outlays. Elementary and high school combinations totaled $11,700 in expenditures as 0.16 percent of all initiative spending.

In reviewing expenditures relative to district and initiative averages, elementary building-level expenditures averaged $29,808.42 while the mean expenditure per initiative was $20,605.42. Middle schools expended $34,781.80 and averaged $28,984.83 for each initiative. Average high school expenditures totaled $14,857.04 as the mean spent on individual initiatives was calculated at $12,155.76. Total average cash outlays for ES/MS and MS/HS reforms were $33,366.67 and $7531.25 respectively. The mean for each ES/MS combination per initiative was $29,061.29. MS/HS average expenditure per initiative was $7531.25. For ES/HS initiatives, total spending per combination totaled $5850.00 as the mean expenditure per initiative equaled that amount. Initiative spending across all grade levels averaged $44,144.90 as mean spending per initiative was determined to be $16,409.09. These findings for the elementary, middle school and high school building levels are reported in Table 8. The same categories for the building level combinations included in the study are in Table 9.

The total number of personnel hours invested in all initiatives in the study was 377,970. Total number of personnel hours spent in support of reform were as follows: ES – 103,700, MS – 33,976, HS – 26,725, ES/MS – 58,750, MS/HS – 1525, ES/HS – 1300 and ALL – 151,994.

Table 8

District and Initiative Expenditure Data (Individual Building Levels)

Descriptor	ES	MS	HS
Total Fiscal Investment/District	1,699,080	869,545	401,140
Percent of Total Spending ($7,326,323)	23.19	11.87	5.47
Number of Districts	57	25	27
Average Expenditure/District	29,808.42	34,781.80	14,857.04
Number of Initiatives (N=297)	81	31	33
Average Expenditure/Initiative	20,605.90	8,984.83	12,155.76

Table 9

District and Initiative Expenditure Data (Grouped Building Levels)

Descriptor	ES/MS	MS/HS	ES/HS	ALL
Total Fiscal Investment/District	900,900	60,250	11,700	2,957,708
Percent of Total Spending ($7,326,323)	12.30	0.82	0.16	40.37
Number of Districts	27	8	2	67
Average Expenditure/District	33,366.67	7,531.25	5,850.00	44,144.90
Number of Initiatives	31	8	2	111
Average Expenditure/Initiative**	29,061.29	7,531.25	5,850.00	16,409.09

For buildings in the ES category, personnel hours per district averaged 1819.30 and personnel hours per initiative averaged 1280.25. MS invested an average of 1359.04 hours per district and 1096.00 hours per initiative, HS personnel hours averaged 989.81in each district and

835.16 hours in each initiative. In the grouped building level designations, ES/MS initiative personnel hours invested averaged 2175.93 per district and 1895.16 hours per initiative. MS/HS initiatives averaged 19.62 hours invested in each district and 19.62 hours per initiative. ES/HS initiatives were limited to an average of 650 hours in each district also averaging 650 hours invested on each initiative. For initiatives that spanned ALL grade levels, personnel committed a district average of 2268.57 hours while allocating an average of 388.18 hours in support of each initiative.

As a percentage calculation of the time commitment of each district to reform in each of the respective individual building level or grouped building level initiatives, ES represented 27.44 percent of the 377,970 hours reported in support of student academic success. MS followed with 8.99 percent, HS tallied 7.07 percent, followed by ES/MS with 15.54 percent of the gross number of hours invested. MS/HS initiatives accounted for 0.40. ES/MS personnel hours represented 0.34 percent with initiatives implemented across ALL building levels comprised 40.21 percent of all hours committed to all reform initiatives. The figures for individual building levels are presented in Table 10. Calculations for the grouped building level categories are presented in Table 11.

Implementation data were categorized as studying, in progress or fully implemented. For the entire sample, 18 of 297 (6.06 percent) initiatives were noted as being in the studying stage. In progress initiatives accounted for 133 (44.78 percent) and 146 (49.16 percent) were detailed as fully implemented. By comparison, of the 81 identified ES initiatives, 7.41 percent (6) were reported as being in the studying stage, 34.57 percent (28) were stated to be in progress and 58.02 percent (47) were included in the fully implemented stage. MS data show that of 31 reported initiatives,

Table 10

District and Initiative Personnel Hour Investment (Individual Building Levels)

Descriptor	ES	MS	HS
Total Personnel Hours Invested/District	103,700	33,976	26,725
Percent of Total Hours Invested (377,970)	27.44	8.99	7.07
Number of Districts	57	25	27
Average Personnel Hours/District	1819.30	1359.04	989.81
Number of Initiatives	81	31	33
Average Personnel Hours/Initiative	1280.25	1096.00	835.16

Table 11

District and Initiative Personnel Hour Investment (Individual Building Levels)

Descriptor	ES/MS	MS/HS	ES/HS	ALL
Total Personnel Hours Invested/District	58,750	1525	1300	151,944
Percent of Total Hours Invested (377,970)	15.54	0.40	0.34	40.20
Number of Districts	27	8	2	67
Average Personnel Hours/District	2175.93	19.62	650	2268.57
Number of Initiatives	31	8	2	111
Average Personnel Hours/Initiative	1895.16	19.62	650	388.18

One (3.23 percent) was described as being in the studying stage, 14 (45.16 percent) were in progress and 16 (51.61 percent) were fully implemented. HS data indicate that 4 of 33 (12.12 percent) initiatives are being studied, 13 (39.39 percent) are in progress and 16 (48.48 percent)

are fully implemented. The combined building level data notes, 31 ES/MS initiatives are 3.23 percent (1) studying, 32.25 percent (10) are in progress and 64.52 percent (20) are fully implemented. MS/HS data note that of the 8 initiatives included in this category, there were zero initiatives in the studying stage, 3 (37.5 percent) in progress and 5 (62.5 percent) fully implemented. No ES/HS initiatives were found to have be in the studying stage, 1 (50 percent) were in progress and 1 (50 percent) were fully implemented. For the 111initiatives spanning ALL grade levels, 6 (5.40 percent) were being studied, 63 (56.67 percent) were in progress while fully implemented initiatives accounted for 42 (37.64 percent). These findings are presented in Table 12.

Responding superintendents were asked to indicate their perception of the impact of identified initiatives on the basis of no impact, slight impact or strong impact. For all 297 initiatives, 15 (5.05 percent) were perceived to have no impact on student academic success, 104 (35.02 percent) were believed to have had a slight impact on student academic success and 178 (59.93 percent) were thought to have had a strong impact on student academic success.

Of the 81 ES initiatives, 4 (4.94 percent) were perceived as having no impact, 19 (23.46 percent) were thought to have had a slight impact and 58 (71.60 percent) were believed to have had a strong impact on student academic success. In the MS setting, 31 initiatives were identified with 3 (9.68 percent) believed to have had no impact, 14 (45.16 percent) having a slight impact and 14 (45.16 percent) perceived to have had a strong impact on student academic success. Superintendent perceptions of the effectiveness of 33 HS initiatives were described as 1 (3.03 percent) having no impact, 20 (60.60 percent) having slight impact and 12 (36.36 percent) as perceived as strongly impacting student academic success.

Table 12

Stage of Initiative Implementation

Descriptor	ES	MS	HS	ES/MS	MS/HS	ES/MS	ALL
Total Initiatives	81	31	33	31	8	2	111
Number Studying	6	1	4	1	0	0	6
Percent Studying	7.41	3.23	12.12	3.23	0	0	5.40
Number In Progress	28	14	13	10	3	1	63
Percent In Progress	34.57	45.16	39.39	32.25	37.5	50	56.76
Number Fully Implemented	47	16	16	20	5	1	42
Percent Fully Implemented	58.02	51.61	48.48	64.52	62.5	50	37.84

In the initiatives grouped by building levels, ES/MS reported 1 of 31 initiatives (3.23 percent) as having no impact, with 8 initiatives (25.81 percent) at slight impact and 22 initiatives (70.96 percent) having a strong impact. MS/HS initiatives totaled 8. Of those, no initiatives were identified as having no impact, 5 (62.50 percent) were perceived to have a slight impact and 3 (37.50 percent) left superintendents with the perception of a strong impact on student academic success. With only two initiatives identified at the ES/HS level, 1 (50 percent) were believed to have a slight impact on student academic success and 1 (50 percent) were perceived as having a strong impact. For the 111 initiatives that spanned all grade levels, 6 (5.41 percent) were noted in the no impact category, 37 (33.33 percent) were believed to have had a slight impact and 68 (61.26 percent) were perceived as strongly impacting student academic success. These findings are presented in Table 13.

Table 13

Superintendent Perception of Initiative Impact on Student Academic Success

Descriptor	ES	MS	HS	ES/MS	MS/HS	ES/HS	ALL
Total Initiatives (N=297)	81	31	33	31	8	2	111
Number No Impact	4	3	1	1	0	0	6
Percent No Impact	4.94	9.68	3.03	3.23	0	0	5.41
Number Slight Impact	19	14	20	8	5	1	37
Percent Slight Impact	23.46	45.16	60.60	25.81	62.50	50	33.33
Number Strong Impact	58	14	12	22	3	1	68
Percent Strong Impact	71.60	45.16	36.36	70.96	37.50	50	61.26

A primary focus of this study was to determine the degree impact of reform efforts on student academic success. Academic achievement data, as measured by the MAP assessment administered in the spring of 2011, were reviewed. Combined percentages of students achieving proficient and advanced performance, in communication arts and mathematics, were recorded for each building level and combined building levels and designated in this study as percent of students passing the state's MAP assessment. Communication arts and mathematics achievement levels were categorized according to the degree of implementation and the superintendent's perception of impact on student achievement. For all categories, the percentage noted represents the combined percent of students passing the 2011 MAP assessment.

Descriptive findings about the relationships between the degree of implementation of the reform initiatives, the superintendent-perceived impact of the initiatives, and the degree of student achievement as measured by language arts and mathematics assessments are reported in

Tables 14 to 21. The following paragraphs describe those findings, with each paragraph devoted to a discussion of the information for the grade level of the initiative.

In the ES setting, student achievement for initiatives in the studying designation of initiative implementation was 47.73 percent in communication arts and 55.35 percent in mathematics. In those ES buildings where superintendents perceived the implemented initiatives as having no impact, communication arts scores attained 49.10 percent. Mathematics proficient or better achievement included 53.03 percent of the student population. ES student performance, where the implementation of reform efforts was described as in progress, achieved 52.45 percent proficient or better in communication arts and 54.97 percent in mathematics. In ES buildings where superintendents perceived various reforms as having a slight impact on achievement outcomes, students achieved 52.52 percent proficient and advanced in communication arts and 51.07 percent in the same performance levels in mathematics. Achievement scores associated with initiatives at the fully implemented stage reached 53.04 percent in communication arts as performance in mathematics totaled 54.41 percent. In those settings where superintendents perceived the impact of various initiatives as having a strong impact on student performance, the number of students achieving proficiency or higher was 52.46 percent in communication arts and 56.21 percent in mathematics.

MS achievement, in the studying designation of initiative implementation, was determined to be 50.9 percent in communication arts and 44.00 percent in mathematics. In those MS settings where superintendents perceived the implemented initiatives as having no impact, communication arts scores reached 44.83 percent. Mathematics proficient or better achievement included 44.47 percent of the student population. MS student performance where the implementation of reform efforts were described as in progress, achieved 50.91 percent

proficient or better in communication arts and 52.19 percent in mathematics. Where superintendents perceived various reforms as having a slight impact on achievement outcomes, students achieved 51.58 percent proficient and advanced in communication arts and 49.77 percent in the same performance levels in mathematics. Achievement scores associated with initiatives at the fully implemented stage reached 50.82 percent in communication arts as performance in mathematics reached 53.02 percent. In those setting where superintendent's perceived the impact of various initiatives as having a strong impact on student performance, the number of students achieving proficiency or higher was 51.26 percent in communication arts and 56.00 percent in mathematics.

Student performance in the HS context, for those initiatives in the studying designation of implementation, was determined to be 72.60 percent in Language Arts II and 45.82 percent in Algebra I. In HS settings where superintendents perceived the implemented initiatives as having no impact, communication arts scores totaled 67.41 percent. Proficient or better achievement in mathematics included 19.5 percent of the student population. HS student performance where the implementation of reform efforts were described as in progress, achieved 76.68 percent proficient or better in communication arts and 53.32 percent in mathematics. Where superintendents perceived various reforms as having a slight impact on achievement outcomes, students attained 74.99 percent proficient and advanced in communication arts and 58.55 percent in the same performance levels in mathematics. Achievement scores associated with fully implemented initiatives reached 71.65 percent in communication arts as performance in mathematics achieved 57.31 percent. In those settings where superintendents perceived the impact of various initiatives as having a strong impact on student performance, the number of

students achieving proficiency or higher was 71.95 percent in communication arts and 52.24 percent in mathematics.

In the grouped building arrangements, proficient and advanced achievement scores are presented as an average of the combination of grade levels. ES/MS achievement for initiatives in the studying designation of implementation was determined to be 27.70 percent in communication arts and 34.50 percent in mathematics. In those ES/MS settings where superintendents perceived the implemented initiatives as having no impact, communication arts scores reached 23.87 percent. Mathematics proficient or better achievement totaled 24.17 percent of the student population. ES/MS student performance where the implementation of reform efforts were described as in progress, achieved 26.54 percent proficient or better in communication arts and 29.54 percent in mathematics. Where superintendents perceived various reforms as having a slight impact on achievement outcomes, students achieved 24.94 percent proficient and advanced in communication arts and 24.84 percent in the same performance levels in mathematics. Achievement scores associated with initiatives at the fully implemented stage reached 24.23 percent in communication arts as performance in mathematics reached 24.68 percent. In those settings where superintendents perceived the impact of various initiatives as having a strong impact on student performance, the number of students achieving proficiency or higher was 25.20 percent in communication arts and 27.30 percent in mathematics.

At the MS/HS grouped level, no initiatives were identified as being in the studying stage of implementation. MS/HS student performance where the implementation of reform efforts were described as in progress, achieved 32.98 percent proficient or better in communication arts and 25.76 percent in mathematics. Achievement scores associated with initiatives at the fully implemented level reached 30.83 percent in communication arts as performance in mathematics

reached 24.42 percent. No MS/HS initiatives were described as having no impact on student academic success. Where superintendents perceived various reforms as having a slight impact on achievement outcomes, students achieved 32.25 percent proficient and advanced in communication arts and 25.21 percent in the same performance levels in mathematics. In grade level arrangements where superintendents perceived the impact of various initiatives as having a strong impact on student performance, the number of students achieving proficiency or higher was 30.61 percent in communication arts and 24.44 percent in mathematics.

For the ES/HS grouped level, no initiatives were identified as being in the studying stage of implementation. ES/HS student performance where the implementation of reform efforts was described as in progress, 33.22 of the students scored percent proficient or better in communication arts and 24.17 percent in mathematics. Achievement scores associated with initiatives designated as fully implemented reached 29.57 percent in communication arts as performance in mathematics totaled 22.92 percent. No ES/HS initiatives were described as having no impact on student academic success. Where superintendents perceived various reforms as having a slight impact on achievement outcomes in the ES/HS setting, students achieved 33.22 percent proficient and advanced in communication arts and 24.17 percent in mathematics. In ES/HS initiative applications, where the superintendent perceived the impact of various initiatives to be strong, communication arts performance indicated 29.57 percent of the students achieving proficient or higher designations while the percent of students reaching those same designations in mathematics totaled 22.92.

For reform efforts applied to all grade levels, achievement for initiatives in the studying designation of implementation was determined to be 29.57 percent in communication arts and 26.98 percent in mathematics. Student performance in this context, where the implementation of

reform efforts was described as in progress, achieved 36.99 percent proficient or better in communication arts and 26.48 percent in mathematics. Achievement scores associated with initiatives at the fully implemented stage reached 28.99 percent in communication arts as performance in mathematics averaged 25.72 percent. In those ALL arrangements where superintendents perceived the implemented initiatives as having no impact, communication arts scores averaged 23.87 percent. Mathematics proficient or better achievement totaled 24.17 percent of the student population. Where superintendents perceived various reforms as having a slight impact on achievement outcomes, students achieved 24.94 percent proficient and advanced in communication arts and 24.84 percent in the same performance levels in mathematics. In those settings where superintendents perceived the impact of various initiatives as strongly affecting student performance, the number of students achieving proficiency or higher was 25.20 percent in communication arts and 27.30 percent in mathematics. The percent of students achieving proficient and advanced levels in communication arts and mathematics relative to the stage of initiative implementation are presented in Tables 14, 16, 18 and 20. The grouped results in communication arts and mathematics achievement data based on the average percent of students achieving proficient and advanced relative to the stage of implementation are presented in Tables 15, 17, 19 and 21.

Table 14

Communication Arts Student Performance Data (% Proficient and Advanced)

Implementation Stage	ES	MS	HS
Studying	47.73	50.90	72.6
In Progress	52.45	50.91	76.68
Fully Implemented	53.04	50.82	71.65

Table 15

Communication Arts Student Performance Data (Average % Proficient and Advanced)

Implementation Stage	ES/MS	MS/HS	ES/HS	ALL
Studying	27.70	0	0	29.57
In Progress	26.54	32.98	33.22	36.99
Fully Implemented	24.23	30.83	29.57	28.99

Table 16

Mathematics Student Performance Data (% Proficient and Advanced)

Implementation Stage	ES	MS	HS
Studying	55.35	44.00	45.82
In Progress	54.97	52.19	53.32
Fully Implemented	54.41	53.02	57.31

Table 17

Mathematics Student Performance Data (Average % Proficient and Advanced)

Implementation Stage	ES/MS	MS/HS	ES/HS	ALL
Studying	34.50	0	0	26.98
In Progress	29.54	25.76	24.17	26.48
Fully Implemented	24.68	24.42	22.92	25.72

Table 18

Communication Arts Student Performance Data (% Proficient and Advanced)

Perceived Impact	ES	MS	HS
No Impact	49.10	44.83	67.40
Slight Impact	52.52	51.58	74.99
Strong Impact	52.46	51.26	71.95

Table 19

Communication Arts Student Performance Data (Average % Proficient and Advanced)

Perceived Impact	ES/MS	MS/HS	ES/HS	ALL
No Impact	23.87	0	0	28.98
Slight Impact	24.94	32.25	33.22	41.99
Strong Impact	25.20	30.61	29.57	29.30

Table 20

Mathematics Student Performance Data (% Proficient and Advanced)

Perceived Impact	ES	MS	HS
No Impact	53.03	44.47	19.50
Slight Impact	51.07	49.77	58.55
Strong Impact	56.21	56.00	52.24

Table 21

Mathematics Student Performance Data (Average % Proficient and Advanced)

Perceived Impact	ES/MS	MS/HS	ES/HS	ALL
No Impact	24.17	0	0	25.47
Slight Impact	24.84	25.21	24.17	26.48
Strong Impact	27.30	24.44	22.92	26.25

Hypothesis Testing

Four hypotheses were tested in this study. Hypothesis One was tested by conducting correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives in the elementary school setting.

Hypothesis Two was tested by conducting correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives in the middle school setting.

Hypothesis Three was tested by conducting correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives implemented in the high school setting.

Hypothesis Four was tested by conducting correlational relationships between the study variables of years of full implementation, personnel hours, dollars spent, stage of implementation and the Superintendent's perceived level of impact of the initiatives when all of the initiatives were analyzed. Note that the variables of student achievement on the state's high stakes assessments were not included in this hypothesis for "all initiatives" for two reasons. First, the nature of those high stakes assessments is very different in focus, with the elementary and middle school assessments being more comprehensive about language arts and mathematics development during the elementary and middle school years.

The nature of the high school assessments are course specific and typically represent achievement in Algebra I and English II during the students' freshman or sophomore years. A method for equalizing the interpreting the results and placing them on a common ground were beyond the scope of this exploratory study. The second reason for not including the achievement data of "all" initiatives was that many of those initiatives focused across grade levels, thus compounding the likelihood of error in the findings. For example, costs for initiatives serving both elementary and middle schools were reported as costs for the initiative, and not disaggregated by cost for each of those grade levels.

Hypothesis One (ES)

The first hypothesis tested in this study was: There are no correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives in the elementary school setting. Pearson-product moment (zero-order) correlations were calculated for the relationships between selected items from the survey.

Pearson-product moment correlations for years of implementation, personnel hours invested, financial resources invested, average daily attendance, perceived impact and student achievement for the reform initiatives focusing only the elementary schools in this study are presented in Table 22. Significant positive zero-order correlations were evident between "Years of Full Implementation" and "Superintendent's Perceived Impact" (r=.234, p=.036). Personnel Hours correlations were found to be significant with "Dollars Spent" (r=.483, p=.000) and "Superintendent Perceived Impact" (r=.278, p=.012). "Dollars Spent" demonstrated significant positive correlations with "Superintendent Perceived Impact" (r=.219, p=.050). And as would be expected, "Percent Passing Communication Arts" had positive zero-order correlations with "Percent Passing Mathematics" (r=.495, p=.000)

Hypothesis Two (MS)

The second hypothesis tested in this study was: There are no correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform,

the school's average daily attendance, the degree to which the Superintendent perceived the reform positively impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives in the middle school setting. Pearson-product moment (zero-order) correlations were calculated for the relationships between selected items from the survey.

For MS initiatives, significant negative zero order correlations were apparent at the 0.01 level for "Years of Full Implementation" and "Superintendent Perceived Impact" ($r = -.739$, $p = .002$) and "Personnel Hours" and "Superintendent Perceived Impact" ($r = -.465$, $p = .008$). Positive Pearson product-moment correlations, significant at the 0.01 level, included "Personnel Hours" and "Dollars Spent" ($r = .498$, $p = .005$) and "Percent Passing Communication Arts" and "Percent Passing Mathematics" ($r = .725$, $p = .000$). Pearson-product moment correlations for MS initiatives, relative to implementation, personnel hours invested, financial resources invested, average daily attendance, perceived impact and student achievement, are presented in Table 23.

Hypothesis Three (HS)

The third hypothesis tested in this study was: There are no correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives implemented in the high school setting. Pearson-product moment (zero-order) correlations were calculated for the relationships between selected items from the survey.

Pearson-product moment correlations for implementation, personnel hours invested, financial resources invested, average daily attendance, perceived impact, student achievement and persistence to graduation are presented in Tables 24 and 25. Zero-order correlations for HS initiatives produced one significant positive correlation. "Full Years of Implementation" and "Superintendent Perceived Impact" ($r = .369$, $p = .035$). "Average Daily Attendance" and "Superintendent Perceived Impact" produced a significant negative correlation ($r = -.356$, $p = .042$).

Hypothesis Four (ALL)

The fourth hypothesis tested in this study was: There are no correlational relationships between the study variables of years of full implementation, personnel hours, dollars spent, stage of implementation and the Superintendent's perceived level of impact of the initiatives when all of the initiatives were analyzed. Pearson-product moment (zero-order) correlations were calculated for relationships between selected items from the survey.

For initiatives implemented across ALL grade levels, significant positive correlations were found in five areas. "Years of Full Implementation and "Stage of Implementation" ($r = .672$, $p = .000$), "Years of Full Implementation" and "Superintendent Perceived Impact" ($r = .209$, $p = .000$), "Personnel Hours" and "Dollars Spent" ($r = .542$, $p = .000$), "Personnel Hours" and "Superintendent Perceived Impact" ($r = .206$, $p = .000$) and "Stage of Implementation" and "Superintendent Perceived Impact" ($r = .346$, $p = .000$). Pearson product-moment correlations for years of full implementation, personnel hours, dollars spent, stage of implementation and the Superintendent's perceived level of impact of the initiative are presented in Table 24.

Table 22

Correlations: Elementary School Reform Variables

Item	Years of Full Implementation	Personnel Hours	Dollars Spent	Average Daily Attendance	Superintendent Perceived Impact	Percent Passing Communication Arts	Percent Passing Mathematics
Years of Full Implementation	1.00	.090 p = .426	.184 p = .100	.029 p = .799	.234* p = .036	.072 p = .523	.047 p = .674
Personnel Hours	.090 p = .426	1.00	.483** p = .000	.091 p = .420	278* p = .012	-.171 p = .128	-.145 p = .196
Dollars Spent	.184 p = .100	.483** p = .000	1.00	.054 p = .631	.219* p = .050	-.051 p = .651	-.076 p =.502
Average Daily Attendance	.029 p = .799	.091 p = .420	.054 p = .631	1.00	-.074 p =.513	.023 p = .838	.086 p = .443
Superintendent Perceived Impact	.234* p = .036	.278* p = .012	.219* p = .050	-.074 p = .513	1.00	.063 p = .576	.184 p = .100
Percent Passing Communication Arts	.072 p = .523	-.171 p = .128	-.051 p = .651	.023 p = .838	.063 p = .576	1.00	.495** p = .000
Percent Passing Mathematics	.047 p = .674	-.145 p = .196	-.076 p = .502	.086 p = .443	.184 p = .674	.495** p = .000	1.00

*p < .05, **p < .01

Table 23

Correlations: Middle School Reform Variables

Item	Years of Full Implementation	Personnel Hours	Dollars Spent	Average Daily Attendance	Superintendent Perceived Impact	Percent Passing Communication Arts	Percent Passing Mathematics
Years of Full Implementation	1.00	.474 p = .074	.050 p = .859	.170 p = .545	-.739** p = .002	.244 p = .381	.073 p = .797
Personnel Hours	.474 p = .074	1.00	.498** p = .005	.138 p = .460	-.465** .008	-.122 .514	-.196 .292
Dollars Spent	.050 p = .859	.498** p = .005	1.00	.144 p = .447	-.178 p = .347	-.291 p = .119	-.333 p = .072
Average Daily Attendance	.170 p = .545	.138 p = .460	.144 p = .447	1.00	-.052 p = .779	-.014 p = .939	.161 p = .387
Superintendent Perceived Impact	-.739** p = .002	-.465** p = .008	-.178 p = .347	-.052 p = .779	1.00	.073 p = .698	.085 p = .651
Percent Passing Communication Arts	.244 p = .523	-.122 p = .128	-.291 p = .651	.-014 p = .838	-.073 p = .698	1.00	.725** p = .000
Percent Passing Mathematics	-.073 p = .797	-.196 p = .292	-.333 p = .072	.161 p = .387	.085 p = .651	.725** p = .000	1.00

*p < .05, **p < .01

Table 24

Correlations: High School Reform Variables

Item	Years of Full Implementation	Personnel Hours	Dollars Spent	Average Daily Attendance	Superintendent Perceived Impact	Percent Passing LAII EOC	Percent Passing Algebra II EOC	Persistence to Graduation
Years of Full Implementation	1.00	-.135 p = .463	.086 p = .633	.065 p = .719	.369* p = .035	.88 p = .626	.262 p = .141	-.182 p = .310
Personnel Hours	-.135 p = .463	1.00	.308 p = .086	.133 p = 539	-.139 p = .449	.169 p = .356	-.160 p = .382	.127 p = 488
Dollars Spent	.086 p = .633	.308 p = .086	1.00	.035 p = .846	-.070 p = .347	-.069 p = .119	-.270 p = .072	-.205 p = .252
Average Daily Attendance	.065 p = .719	.113 p = .539	.035 p = .846	1.00	-.356* p = .042	.255 p = .153	.131 p = .466	.115 p = 525
Superintendent Perceived Impact	.369* p = .035	-.139 p = .449	-.070 p = .698	-.356* p = .042	1.00	-.055 p = .760	.148 p = .412	-.063 p = 728
Percent Passing Language Arts II EOC	.088 p = .626	.169 p = .356	-.069 p = .702	.255 p = .153	-.055 p = .760	1.00	.340 p = .053	-.124 p = .493
Percent Passing Algebra I EOC	.262 p = .141	-.180 p = .382	-.270 p = .128	.131 p = .466	.148 p = .651	.340 p = .053	1.00	-.230 p = .197
Persistence to Graduation	-.182 p = .310	.127 p = .488	-.205 p = .252	.115 p = .525	-.063 p = .728	-.124 p = .493	-.230 p = .197	1.00

*p < .05, **p < .01

Table 25

Correlations for Initiatives Across All Grade Levels

Item	Years of Full Impl.	Personnel Hours	Dollars Spent	Stage of Impl.	Superintendent Perceived Impact
Years of Full Implementation	1.00	.075 p = .201	.074 p = .205	.672** p = .000	.209** p = .000
Personnel Hours	.075 p = .201	1.00	.542** p = .000	.054 p = .352	.206** p = .000
Dollars Spent	.074 p = .205	.542** p = .000	1.00	.066 p = .259	.088 p = .131
Stage of Implementation	.672** p = .000	.054 p = .352	.066 p = .259	1.00	.346** p = .000
Superintendent Perceived Impact	.209** p = .000	.206** p = .000	.088 p = .131	.346** p = .000	1.00

*p < .05, **p < .01

Summary of Findings

Descriptive Findings

Eighty-one superintendents from 187 school districts responded on behalf of their districts for a response rate of 43.42 percent. In all, 297 initiatives were identified. Implementation of the identified initiatives varied across individual building and multiple grade level arrangements. The ten most implemented initiatives comprised 174 (58.59 percent) of 297 initiatives. The ten most implemented initiatives included Professional Learning Communities

(56), Response to Intervention (35), Positive Behavior Support (27), Targeted Intervention (19), High Schools That Work (9), eMINTS (7), Literacy Teams (7), Reading First (5), Data Teams (5) and Credit Recovery (4). Of this list, one initiative, eMINTS was tied to teaching methodology. Two initiatives, Literacy Teams and Reading were directly related to a specific content area. The remaining initiatives were associated institutional structures and organization, identification of student needs, delivery of services and credit toward graduation.

Considering the amount of dollars spent ($7,326,323), number of initiatives implemented (297) and personnel hours invested (377,970) in support of student academic success, In ES settings, $1,699,080 (23.19 percent) was spent in support of student academic success, $869,545 (11.87 percent) at the MS designation and $401,140 (5.47 percent) in HS configurations. Similar distribution patterns emerged relative to the number of initiatives implemented at each level with 81(27.27 percent) implemented at the ES level, 31 (10.44 percent) at the MS level and 33 (12.22 percent) in HS settings. Relative to total personnel hours invested, ES settings accounted for 103,700 (27.44 percent). MS initiatives totaled 33,976 (8.99 percent) and HS initiatives claimed 26,725 (7.07 percent).

Continuing with a focus on ES related findings, fiscal spending, initiative implementation and personnel hours invested for those grade configurations paired with elementary students show total spending for ES/MS, ES/HS and ALL designations of $3,870,308 (52.83 percent). Total number of initiatives implemented in the same categories was 144 (48.48 percent). Personnel hours invested in the same designations totaled 211,994 (56.09 percent). By comparison, totals for MS, HS and MS/HS reforms, in the categories of spending, initiative implementation, and personnel hours invested resulted in $1,330,935 (18.17 percent) dollars

spent, 60 (20.20 percent) initiatives implemented and 62,226 (16.46 percent) personnel hours invested.

Academic Achievement

The highest levels of academic achievement for students passing either MAP or EOC assessments were found at the HS level as the percent of students passing the Lanuage Arts II EOC reached 76.68 percent for initiatives considered to be "in progress". In mathematics Algebra I EOC achievement for initiatives considered as having a slight impact reached 58.55 percent. By comparison, the highest level of ES mathematics achievement was found for those initiatives considered as having a strong impact on student academic success with 56.21 percent passing the MAP assessment, while the highest level of ES communication arts achievement was found in initiatives in the fully implemented stage with 53.04 percent passing the MAP assessment.

Hypotheses

Only one significant correlation was found to be common to all four hypotheses. "Years of Full Implementation" and "Superintendent's Perceived Impact" had significant positive correlations in elementary schools ($HO_{1),}$ high schools ($HO_{3)}$ and all schools (HO_4), and a significant negative correlation in middle schools (HO_2). Significant positive correlations for "Personnel Hours" and "Dollars Spent" were common to elementary schools ($HO_{1),}$ middle schools (HO_2) and all schools (HO_4). Relative to student academic success, significant positive correlations were found between "Percent Passing Communication Arts" and "Percent Passing Mathematics" for elementary schools (HO_1) and middle schools (HO_2). Across elementary schools (HO_1), middle schools (HO_2) and high schools (HO_3), no significant correlations were found between any of the variables and student achievement in communication arts or

mathematics. In addition, no significant correlations were found between "Persistence to Graduation" and any other variable in HO_3. Testing for HO_4 did not include academic achievement due to the differences in high stakes achievement measures.

In all, 16 correlations were statistically significant out of the 80 correlations tested. Of the 80 tested, 15 analyzed the relationships between study variables and the superintendents' perceptions of impact had by the reform initiatives and 10 of those fifteen were statistically significant. However, no correlations linked the study variables describing factors related to school reform and the dependent variables of student academic achievement as measured by the state's high stakes assessments.

Chapter 5

DISCUSSION OF FINDINGS

Introduction and Study Overview

In the decades following World War II, varying degrees of state and federal support, professional freedom, innovation, and inconsistency marked early efforts to reform education. Market competition and educational standardization staked their claim as potential answers to demands for better student performance, but in the process professional autonomy was lost. In trying to navigate in and through the market and governmental applications, while balancing professional autonomy with accountability, it seems that education has moved from away from how to teach reading and accurately assess student progress to redesigning school management and structure in an effort to concentrate on benefitting from incentives or avoiding sanctions (Hargreaves and Shirley, 2009; Ravitch, 2010). Through it all, schools have struggled to determine the most effective programs and initiatives that will provide the substantive means of improving student performance.

In 1958, the National Defense Education Act sought to ensure that highly trained individuals would be available to compete with the Soviet Union in the scientific and technical disciplines. Through the 1960s and 1970s, civil rights, comprehensive programs for disadvantaged students in urban and rural areas and equal access became the focus of federal education policy. In 1980 the Department of Education was established as a Cabinet level agency. A goal of the Department was to promote student achievement and global competitiveness by fostering educational excellence and ensuring equal access. *A Nation at Risk* (1983) ushered in a renewed focus on educational aims and purposes as fears that America's

prosperity and security would fall victim to the mediocre results of a failing educational system prompted cries for better educational outcomes.

Under the umbrella of a new found emphasis on educational excellence, Missouri passed two large scale legislative mandates. The Excellence in Education Act of 1985 initiated sweeping reforms that embraced pupil testing, development of strict discipline codes, provided incentive grants to foster innovation and entice top students to education through scholarship programs and improve teacher recruitment and retention through the development of minimum salaries, improved beginning teacher assistance programs and strengthened teacher preparation standards. The passage of the Outstanding Schools Act of 1993 focused on strengthening basic education, adopting challenging performance standards, developing comprehensive assessments and increasing educational accountability, enhancing curriculum frameworks and improving school funding equity.

Signed into law in 2002, No Child Left Behind became the most publically familiar legislative effort to exert federal authority over the quality of education in the United States. Despite the assurances of greater accountability and improved student performance through formulated achievement targets backed by sanctions of graduating severity, the pending reauthorization of NCLB has intensified the debate about possible modifications of many of the law's provisions (Koretz, 2008). To date, no such reauthorization appears to be on the horizon as numerous states are now seeking waivers from the stipulations of NCLB through the Department of Education.

Through the course of the pursuit of academic success, multiple movements and prescriptions have created a veritable parade of promise as each initiative offers the hope that the key to academic success is simply a matter of putting together the right combination of

standards, competition, policy, structure, public and private interest, innovation, testing, sanctions, time, money, equity, technology, governance, incentives and effort (Sunderman, 2008; Hargreaves and Shirley, 2009; Ravitch, 2010). The fact that this "right combination" includes so many possible facets serves to highlight the complexity of the challenges faced in trying to educate the nation's children

The purpose of this study was to identify commonly implemented school reform initiatives in relatively small Missouri school districts and determine the degree of relationship between those commonly implemented efforts and student academic success. The primary method of analysis was quantitative, with survey data being used to determine, collectively and by grade level (a) commonly implemented reform initiatives in the school's represented in this study; (b) the amounts of fiscal and human resources invested in the implementation of those initiatives; (c) the stages of implementation of the initiatives; (d) the perceived levels of impact of the initiatives on academic success of the students in those schools; (e) if any significant relationships existed between full years of implementation, personnel hours, dollars spent, average daily attendance, superintendent perceived impact, percent of students passing communication arts, percent of students passing mathematics and persistence to graduation; and, (f) if those relationships were noticeably different across the major grade levels of elementary, middle, and high schools?

This study examined the relationships between the presence, time, financial investment and perceived effectiveness of selected reform efforts and student achievement. Missouri school districts, with K-12 student populations between 500 and 2000 students were selected. The schools were identified through the Missouri Department of Elementary and Secondary Education Directory (DESE, 2011). One hundred eighty-seven schools districts were invited to

participate in the study. Superintendents from eighty-one school districts responded to the survey representing a 43.32 percent response rate. The survey data were collected in the winter of 2011 aggregated and analyzed as a group. The student achievement data, 2011 Communication Arts MAP and Mathematics MAP tests and Algebra I and English II End of Course assessments attendance data, graduation rates and annual performance reports were gathered in the winter of 2011 as reported by the Missouri Department of Elementary and Secondary Education (DESE, 2011). To accomplish the purpose of this study, descriptive data about reform initiatives were analyzed to determine the amount of fiscal and human resources invested in the implementation of identified initiatives, the stages of implementation and the perceived level of impact on student academic success. In addition, correlational relationships between the factors of reform and student academic success were analyzed.

The independent data for this study were derived from each participating district's 2011 Annual Performance Report as reported by the Missouri Department of Elementary and Secondary Education. Survey data were collected through an instrument developed for this study wherein superintendents were asked to identify six quantitative measures of school or district commitment to implemented initiatives and one qualitative measure of the superintendent's perception of the identified reform or initiative's impact on student academic success. Time and fiscal resource data were reported by each participating superintendent as estimated figures. Perceptual data on the impact of each reform or initiative were recorded using an ordinal scale utilizing three levels of perceived impact on student academic success.

For the purposes of this study, the school reforms and relevant factors associated with them were matched by school with the student achievement data for each school. The achievement data used for this study were obtained from the web site of the Missouri

Department of Elementary and Secondary Education and were derived from the state assessment administered in the spring of 2011.

Research Questions

Two research questions were examined during the completion of this study. The first research question was analyzed from descriptive data about the reform initiatives reported by the responding school districts. The second was analyzed using correlational relationships for those same reported initiatives.

1. Collectively and by grade levels, what were the commonly implemented reform initiatives in the school's represented in this study, what were the amounts of fiscal and human resources invested in the implementation of those initiatives, what were the stages of implementation of the initiatives and what were the perceived levels of impact of the initiatives on academic success of the students in those schools?
2. Were there significant correlational relationships between full years of implementation, personnel hours, dollars spent, average daily attendance, superintendent perceived impact, percent of students passing communication arts, percent of students passing mathematics and persistence to graduation and were those relationships noticeably different across the major grade levels of elementary, middle and high schools?

Null Hypotheses

The following hypotheses were tested in this study:

H_{01} (ES): There are no correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively

impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives in the elementary school setting.

H_{02} (MS) : There are no correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives in the middle school setting.

H_{03} (HS): There are no correlational relationships between the number of years the reform initiative was in full implementation, the number of personnel hours invested in the reform, the amount of money invested in the reform, the school's average daily attendance, the degree to which the Superintendent perceived the reform positively impacted student success, and student achievement as measured by the percent of students passing the state high-stakes assessment (MAP) for Communication Arts and Mathematics relative to initiatives implemented in the high school setting.

H_{04} (ALL): There are no correlational relationships between the study variables of years of full implementation, personnel hours, dollars spent, stage of implementation and the Superintendent's perceived level of impact of the initiatives when all of the initiatives were analyzed.

Summary of Findings

Descriptive Results

Eighty-one superintendents from 187 school districts responded on behalf of their districts for a response rate of 43.42 percent. In all, 297 initiatives were identified. Implementation of the identified initiatives varied across individual building and multiple grade level arrangements. The ten most implemented initiatives comprised 174 (58.59 percent) of 297 initiatives. The ten most implemented initiatives included Professional Learning Communities (56), Response to Intervention (35), Positive Behavior Support (27), Targeted Intervention (19), High Schools That Work (9), eMINTS (7), Literacy Teams (7), Reading First (5), Data Teams (5) and Credit Recovery (4). Of this list, one initiative, eMINTS was tied to teaching methodology. Two initiatives, Literacy Teams and Reading First were directly related to a specific content area. The remaining initiatives were associated institutional structures and organization, identification of student needs, delivery of services and credit toward graduation.

Total spending on all 297 reported initiatives was $7,326,323. The number of personnel hours committed to supporting those initiatives totaled 377,970. In ES settings, $1,699,080 (23.19 percent) was spent in support of student academic success, $869,545 (11.87 percent) at the MS designation and $401,140 (5.47 percent) in HS configurations. Similar distribution patterns emerged relative to the number of initiatives implemented at each level with 81(27.27 percent) implemented at the ES level, 31 (10.44 percent) at the MS level and 33 (12.22 percent) in HS settings. Relative to total personnel hours invested, ES settings accounted for 103,700 (27.44 percent). MS initiatives totaled 33,976 (8.99 percent) and HS initiatives claimed 26,725 (7.07 percent).

Continuing with a focus on ES related findings, fiscal spending, initiative implementation and personnel hours invested for those grade configurations paired with elementary students show total spending for ES/MS, ES/HS and ALL designations of $3,870,308 (52.83 percent). Total number of initiatives implemented in the same categories was 144 (48.48 percent). Personnel hours invested in the same designations totaled 211,994 (56.09 percent). By comparison, totals for MS, HS and MS/HS reforms, in the categories of spending, initiative implementation, and personnel hours invested resulted in $1,330,935 (18.17 percent) dollars spent, 60 (20.20 percent) initiatives implemented and 62,226 (16.46 percent) personnel hours invested.

The highest levels of academic achievement for students passing either MAP or EOC assessments were found at the HS level as the percent of students passing the Language Arts II EOC reached 76.68 percent for initiatives considered to be "in progress". In mathematics Algebra I EOC achievement for initiatives considered as having a slight impact reached 58.55 percent. By comparison, the highest level of ES mathematics achievement was found for those initiatives considered as having a strong impact on student academic success with 56.21 percent passing the MAP assessment, while the highest level of ES communication arts achievement was found in initiatives in the fully implemented stage with 53.04 percent passing the MAP assessment.

Hypothesis Testing

Only one significant correlation was found to be common to all four hypotheses. "Years of Full Implementation" with "Superintendent's Perceived Impact" had significant positive correlations in elementary schools ($HO_{1),}$ high schools ($HO_{3)}$ and all schools (HO_4), and a significant negative correlation in middle schools (HO_2). Significant positive correlations for

"Personnel Hours" with "Dollars Spent" were common to elementary schools ($HO_{1)}$, middle schools (HO_2) and all schools (HO_4). Relative to student academic success, significant positive correlations were found between "Percent Passing Communication Arts" and "Percent Passing Mathematics" for elementary schools (HO_1) and middle schools (HO_2). Across elementary schools (HO_1), middle schools (HO_2) and high schools (HO_3), no significant correlations were found between any of the variables and student achievement in communication arts or mathematics. In addition, no significant correlations were found between "Persistence to Graduation" and any other variable in HO_3. Testing for HO_4 did not include academic achievement due to the differences in high stakes achievement measures across the grade levels.

Numerous correlations were found linking superintendents' perceptions to the reform variables. However, no correlations statistically linked reform variables with student pass rates on the high-stakes tests.

Discussion of Findings

In Draft 4 of the Missouri Department of Elementary and Secondary Education Elementary and Secondary Education Act (ESEA)/NCLB Flexibility Request, it was noted that student performance, as measured by NAEP, although showing slight improvement, was essentially flat and that Missouri educators seemed complacent, possessed no sense of urgency to improve learning opportunities for their students, and lacked the motivation to change (DESE, 2012). This study was designed to analyze commonly implemented reform initiatives in relatively small Missouri school districts, the amounts of fiscal and human resources invested in the implementation of those initiatives, the stages of implementation of the initiatives and the perceived level of impact of the initiatives on academic success of the students in those schools. In addition, corrrelational studies were conducted to determine the relationship, if any, between

full years of implementation, personnel hours, dollars spent, average daily attendance, superintendent perceived impact, percent of student passing communication arts, percent passing mathematics and persistence to graduation. A second aspect of the correlational studies was reviewed to determine whether those relationships were noticeably different across the major grade levels of elementary, middle and high school.

Findings from this study were able to identify specific reform efforts implemented in each participating district, the amount of fiscal and human resource investment, stage of implementation and perceived impact of each initiative. Further, findings from this study indicate there are significant correlational relationships between years of full implementation and superintendent's perceived impact, personnel hours and dollars spent and percent of students passing communication arts and percent of student passing mathematics as assessed by the MAP. The discussions in this section are based on those descriptive findings and on the significant correlational relationships that were confirmed.

Descriptive Findings

Reform Initiatives

In this study, reform is defined as those activities that alter existing practices, procedures, policies and requirements to enable schools to adapt the way they function to new circumstances, requirements and expectations (Conley, 1993; Hess, 2010). In discussing the interaction between teachers and students, Tyack and Cuban (1995) asked people to recall their best experiences as students in public school. Invariably, those individuals recalled a teacher who challenged them to reach their potential, made a subject come alive, or simply gave caring advice when it was needed. They observed that this closely paralleled the satisfactions and rewards that teachers identified in their work: seeing their students grow intellectually and mature as persons.

Consequently, their understanding of the purpose of reform is to make such encounters between students and teachers more common and through that process improve learning.

This study confirms that there is no shortage of effort in trying to develop those activities that are intended to enhance student opportunities to achieve academic success. Eighty-one superintendents from 187 (43.42 percent) school district responded identifying 297 initiatives in place during the 2010-11 school year. The ten most implemented initiatives accounted for 174 (58.59 percent) of the total number of initiatives identified. In descending order they include Professional Learning Communities (56), Response to Intervention (35), Positive Behavior Support (27), Targeted Intervention (19), High Schools That Work (9), eMINTS (7), Literacy Teams (7), Reading First (5), Data Teams (5), and Credit Recovery (5). The variety of implemented initiatives is important primarily because reforms that are implemented independently of each other tend to do little to significantly improve student achievement (Lipsitz, 1997). In addition, reforms should be seen as parts of long-term plans for school change and not as technical fixes for isolated challenges (Datnow, 2000). The descriptive picture of the types of initiatives present in this study is one of varied and seemingly disjointed initiatives that lack a direct, cohesive focus on instructional change.

Fiscal Investment

During the course of this study two areas of resource investment were analyzed: dollars spent and personnel hours invested. In the 2010-11 school year, districts in this study allocated $7,326,323 in support of the implemented initiatives. Of this total, $1,699,080 (23.19 percent) of all spending was directed toward elementary schools. Further consideration noted that elementary school related initiatives constituted large portions of the overall amount of spending on reform as those grade levels paired with elementary schools, of which elementary grades

comprised the majority of grade levels, accounted for an additional $3,870,308 (52.83 percent) of total spending. In total, elementary and elementary related spending comprised $5,569,388 (76.02 percent) of all spending on all initiatives.

Accepting the premise that it is difficult to establish a level of spending that can reliably produce a given level of student achievement (Podgursky & Skinner, 2006), the level of spending associated with initiatives targeted at elementary aged children prompts several questions. Is there something about elementary students and their emerging natural capacities and distinctive ways of learning (Crain, 2007) that invites or requires a greater level of support? Perhaps it is due to the distinctive challenges presented by working with students with the widest range of ages and developmental needs (NASSP, 2011). Whatever the reason, are reforms more easily implemented at the elementary level? If so, is this due to perceptions of need or teacher openness to change. Is this weighted investment in student learning the result of deliberate action or coincidence? Prompted by the findings of this study, future research might offer better insights.

Personnel Resources Invested

The aspect of time and its influence on student academic success has been repeatedly discussed as researchers try to determine the impact of this commodity. Research does not indicate a strong relationship, at the cross-national level, between achievement scores and the amount of instructional time students are allotted (Baker, Fabrega, Galindo & Mishook, 2004). Nevertheless, district leaders estimated their personnel dedicated 377,970 hours to the study, implementation and support of the identified initiatives. As with dollars spent, the number of implemented initiatives and hours committed to those initiatives were skewed toward elementary school applications. In all, elementary and elementary related initiative applications made up 225

(75.76 percent) of the total number of implemented reforms. Personnel hours for this same combination of grade levels totaled 315,694 (83.35 percent) of all personnel hours committed to student academic success. Determining the impact of time, as a crucial variable in raising academic achievement, is difficult given the complexity, manner and pace of implementation across multiple districts (Cuban, 2008; Zhang, Shkolnik & Fashola, 2005). Though it was beyond the scope of this study to determine why initiatives were implemented at different grade levels, the approximate 3:1 ratio of personnel hours devoted to change along with a similar ratio of fiscal support at the very least pose questions of why reform resources across a rather robust sample of schools would be so disproportionate toward elementary schools. The critics of secondary schools would be quick to point out the slow evolution of change in secondary schools and the very fact that today's secondary schools are but very slightly different in educational experiences than were the secondary schools of fifty year past. Is the nature of secondary education so entrenched in tradition that it rejects or does not seek the same amount of resources for change as found in the elementary sector? Or has educational research and knowledge short-changed the secondary sector, leaving it with fewer opportunities for change? While not answered in this study, both questions pose food for thought in future research.

Academic Achievement

The percent of students passing the Algebra I high-stakes assessment in the study schools was 58.55 percent. This rate was similar to the pass rate of 53.04 percent for the elementary school mathematics assessment. In communication arts, high school students passing the Language Arts II assessment reached 76.68 percent as the next highest level of communication arts achievement was seen at the elementary school level with 56.21 percent of those students passing the MAP assessment. Determining the meaning of these disparities can be difficult.

Utilizing standardized state assessment to determine academic success can be a flawed mechanism as the literature suggests that proficiency measures are indicators of student performance, but not necessarily school performance (Miller, Kerr, & Ritter, 2008). As long as the alchemy of student achievement includes race, social class, instructional practice, local contexts, the impact of learning environments outside of school and the differences that exist between teachers, schools and students remains, the use of standardized tests, as a measure of school effectiveness, will remain problematic (Miller, Kerr & Ritter, 2008; Downey, von Hippel, & Hughes, 2008; Marzano, 2003), however, for the purposes of this study, they represent the only aggregate measure available for determining student achievement in specific content areas.

Correlational Relationships

In this study, one significant correlation was found to be common to all four hypotheses. "Years of Full Implementation" and "Superintendent's Perceived Impact". The relationship between these two variables was ($r = .234$, $p = .036$) in elementary schools, ($r = .739$, $p = .002$) in middle schools, ($r = .369$, $p = .035$) in high schools and ($r = .209$, $p = .000$) for all grade levels. The connection between the amounts of time an initiative has been fully implemented and the superintendent's perceived impact is bolstered by the literature. Perceptions of success can be the product of intuitive conclusions, documented results at the district level or judgments on the degree to which a particular reform has accomplished what is set out to do (Cuban, 1998). For example, professional learning communities may have the overarching goal of improving student learning opportunities, but the success of that effort depends on the degree to which the tenets of the initiative are successfully implemented. In discussing how schools change, Cuban (1998) notes that the popularity of an initiative and its longevity are two additional standards that serve as plausible measures that may inform the superintendent's perception as the spread of an

innovation and its hold on the attention and support of voters and educators translates into political and practical support for the initiative itself. In addition, the amount of time an initiative has been in place and the perceived level of its impact may be tied to how long it takes for results to manifest themselves in the school community. In his experience with multi-year improvement initiatives, Fullan (2000) states that an elementary school can be improved in two or three years. For a high school, improvement can be evident in five to six years while district wide improvement may take six to eight years. As an additional caveat, Fullan reminds us that in each of these instances, the time frame noted does not provide for the institutionalization of any perceived or documented improvement. Consequently, success is fragile and easily undone by changes in leadership or direction. This study, as an exploratory investigation, did not look at that aspect of reform effectiveness or influence.

Significant positive correlations between "Personnel Hours" and "Dollars Spent" were evident in elementary schools ($r = .483$, $p = .005$), middle schools ($r = .498$, $p = .005$) and across all grade levels ($r = .542$, $p = .000$). This positive relationship stands the test of logical consideration as teachers, in their capacity as professionals, commit more time to the study, implementation and support of reform initiatives; school districts compensate them for their time and effort.

Relative to student academic success, significant positive correlations were found between "Percent Passing Communication Arts" and Percent Passing Mathematics in elementary schools ($r = .495$, $p = .000$) and middle schools ($r = .725$, $p = .000$). No such correlations were found at the high school level or across all grades. One possible explanation may lie in the differences in high school course offerings. Another may stem from the comprehensive nature of

elementary and middle school MAP assessment in these two content areas and the course specific assessment present in the high school.

Finally, as the relationship between student achievement and the variables of the study were examined, no significant correlations were found between student achievement in communication arts and mathematics and any of the variables of implementation, perceived impact, dollars spent, personnel hours invested, average daily attendance or persistence to graduation. This finding may speak to the issue of the complexity of measuring assessment outcomes or the basic nature of the variables selected for the correlational testing.

It is conceivable that the identified reforms may not have a direct measureable impact on student learning. While Collins (2001) speaks of getting the right people on the bus, it may be equally important to make sure schools have the right bus in the first place (Fullan, Bertani & Quinn, 2004). Finding ironclad proof of the effectiveness of a given intervention, or combination of interventions, would require the elimination or control of all other factors that could have caused the improvement (Guskey, 2000). Perhaps there is a tendency to work on the things that can be directly influenced, relationships between adults or formal curriculum for example, rather than operate in spheres of action where results are not immediately apparent (Arum, 2011; Sunderman & Orfield, 2006).

The relationship between school expenditures and student achievement is tenuous at best. Hanushek (1986) posits the notion that there appears to be no strong or systematic relationship between school expenditures and student achievement. Given the general acceptance of Hanushek's position, one might conclude that the question might be settled, however, Wenglinsky (1997) suggest that while some types of spending produce no visible relationship, other types do benefit student achievement. For now the connection may be less than obvious as

the recent economic downturn and resultant expenditure reducing efforts of schools do not appear to be impacting student achievement. This does not imply that financial resources are irrelevant; it may be that schools are reducing spending in areas other than instruction or teachers are exerting extra effort in the face of limited resources (Häkkinen, Kirjavainen and Uusitalo, 2002).

The combination of implementation and time cannot be overestimated as a factor of student academic success. Given that schools change reforms as much as reforms change schools (Cuban, 1998), the aspect of a coordinated combination of the right initiatives, effective allocation of financial resources, consistency in leadership and direction, adequate time to properly implement a particular initiative/s and produce measureable results may prove exceedingly difficult (Fullan, 2000; Fullan 2001 and Lipsitz, 1997). Legislative mandates that rely upon assigned standards of proficiency and prescriptive adequate yearly progress targets, have not settled the debate on accurately measuring school effectiveness as the requirements of NCLB and its non-negotiable expectations do not fit what research has shown to be the necessary preconditions for successful reform (Miller, Kerr & Ritter, 2008; Sunderman & Orfield, 2006). There is a significant gulf between classroom practices that have been changed and the implementation of practices that actually lead to improved academic success for students (Leithwood & Jantzi, 2006). Only time, the room to pursue innovative possibilities, a differentiation between popular policy and effective educational practice and adequate measures of student and school performance will provide the answers that are being so impatiently pursued (Nehring, 2007; Hanushek, 2000; Downey, von Hippel & Hughes, 2008).

Implications

Implications for Practice

The current research literature on school reform represents a growing body of information that would lead educators in a direction quite different than the path being followed by civic leaders and policy makers. This study's purpose was to identify commonly implemented reform initiatives in relatively small Missouri school districts and determine the degree of relationship between those efforts and student academic success. Ultimately, it was determined that there are no significant correlations between student achievement, the amount of fiscal and human resource investment, years of full implementation, average daily attendance and persistence to graduation. Consequently, what is left is the consideration of what the intended outcome of school reform might be. If, as Tyack and Cuban (1995) note, it is to increase the type and number of encounters between students and teachers that lead to improved learning, practitioners may consider following the direction indicated in the literature.

Selection of a specific reform initiative must be considered relative to multiple needs and issues and from the perspective of long-term and coordinated implementation. Acknowledging the complexity of what constitutes student academic success requires not only that sufficient time be allowed to determine if a particular initiative has been successful, it must also be in place long enough to become institutionalized to the degree that changes in personnel or direction do not alter its influence on student outcomes. Conversely, if it is determined that the initiative is not having the desired impact on student performance, educators must be prepared to abandon the pursuit of unproductive efforts. This determination can be heavily dependent on the degree to which a selected initiative accomplishes what it set out to do. Whether it is to structure the efforts of the adults in the school setting, or to create a higher level of engagement for students, clearly

understanding what an initiative can and cannot do and properly applying it to the context at hand is critical to its ultimate success.

While the amount of time and money invested in support of reform do not correlate to measurable improvements in student academic success, they are nevertheless important pieces of the puzzle. Their proper application provides the basis for change in that it is secures teaching professionals to a specific time and place. No significant interactions between students and teachers will take place in the absence of capable professionals and sufficient time for those interactions to take place is necessary given that long term success seldom results from a single encounter.

Clearly defined and understood measures of what constitutes academic success are difficult to come by if ironclad measures of effectiveness are being sought. Accurately measuring student performance will continue to be problematic as long as successful learning is influenced by multiple school and non-school factors. For practitioners, this highlights the importance of constant and evolving evaluation of student performance over time.

Ultimately, the pursuit of a universally applicable standard measure of student academic success will continue to challenge those seeking to monitor student performance. Student academic success is not the result of any single factor, but rather the result of an aggregation of tenuously related efforts, measures and circumstances. Perhaps the best that can be done is to continue to seek those measures which provide the clearest picture of student progress, work to maintain an awareness of those practices, structures and initiatives which offer the best evidence of success, remain open to changes in practice as new data informs and never lose sight of the fact that school is where the hope of rural communities is gathered and educators build the future one lesson, one day and one student at a time.

Implications for Future Research

The implications for additional research stemming from this study are as much a product of what was not discovered as much as what was. Existing research questions the link between spending and student achievement. This study found no correlation between spending and student achievement. If spending does correlate to student achievement, as some researchers suggest, then future research on the allocation of fiscal and human resources in districts or schools deemed to be successful may prove useful.

While this study did not investigate the effect of initiative implementation on student academic success, understanding the impact of how long an initiative has been in place (Fullan, 2000), how initiatives work in concert with each other (Lipsitz, 1997) and how effective core practices (Schmoker, 2011) promote academic success, could provide decision makers with information that would support more effective initiative selection processes. Studying selection and implementation processes and understanding what shapes the development of perceptions of successful initiative application could also prove helpful in the development of informed perspectives.

If, as this study has determined, there is no correlation between personnel hours invested and student academic success, the appropriate application of time and the quality of the student's experience come into question. If, as the literature suggests, what goes on during that instructional time is critical, further research may provide insights into the more effective use of education's most limited resource. From the perspective of the institutionalization of initiatives the connection between time fully implemented and the superintendent's perception of impact suggests that there are relationships to be teased out of this finding. Understanding what shapes perceptions of school leaders and others, relative to successful impact could be useful.

In light of the general nature of the variables identified and basic measures of student academic success applied during this study, the findings serve to highlight the need for specific measures and specific considerations. Perhaps the most important question remains with how to accurately and reliably measure student academic success. Attendance rates, persistence to graduation and standardized test scores appear to be poor measures of what students know and can do. If the aim of such analysis is to get to the heart of what constitutes successful public schooling, then it would appear that distinguishing between student performance and school performance would prove to be a valuable tool for educators and policy makers alike.

This study looked at a set of schools of similar characteristics and settings. Further studies could pursue different sample groups based on population, urban, suburban or rural characteristics. Comparisons could be drawn between and among high performing schools and low performing schools to determine the degree of successful initiative implementation. Individual influences on student achievement or specific aspects of one variable, as opposed to multiple variables, in combination with different methodologies, may produce useful findings. As researchers seek to unravel the influence of teaching practice, resource application, reform implementation and student performance outcomes, the landscape for future research appears to be as variable or specific as one would care to pursue.

Conclusion

School reform and its influence on student achievement is a combination of multiple factors and degrees of influence. To properly study the impact of those variables one must be aware of the complexity and variation with which each of those variables interacts. Presently, many questions are being raised as to the effectiveness of current measures of student academic success, how schools work to improve outcomes and whether the resources currently available

are sufficient and appropriate to the task. Given the constant interaction between the aspects of teaching, learning, external factors and the influence of policy and opinion, it is necessary to broaden our view of what constitutes academic success and acknowledge the result is the product of the interplay of large and small applications brought to bear in a specific and limited time frame.

In this study, the aspects of reform implementation, fiscal and human resource investment, perceptions of success and student academic success were investigated. Educators, policy makers and concerned stakeholders must develop a fuller understanding of the complex interaction between school related experiences, educator practice and external influences in supporting positive academic outcomes for students. In an age of diminishing resources and flagging support, public education must be able to justify its existence from the standpoint of resource consumption and student outcomes. As communities, policy makers and students themselves question the value and effectiveness of public schools, it is important to be able to demonstrate how schools are improving, what they are doing to prepare students for the future and why they are deserving of continued support. Hopefully, this study has provided some small opportunity to peek behind the curtain and gain a better sense of the magnitude of what is trying to be accomplished and how schools might better apply limited resources.

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Appendix A

Letter to District Superintendents

December 3, 2011

Dear District Superintendent,

Under the supervision of my advisor, Dr. Jerry Valentine, I am conducting a study of school reform and its relationship to student achievement. Missouri school districts with K-12 enrollments between 500 and 2000 are being asked to participate in this study. Although No Child Left Behind and subsequent reauthorization efforts tend to steal the national spotlight, state and national reform efforts are nothing new. With so much conversation focused on research based initiatives and what reforms are necessary, critical questions remain unanswered. Is any of this stuff working? Are there some reforms that appear more successful than others? Is there a particular combination that seems to work best?

Answering these and the myriad of questions spawned by educational reform efforts cannot be completed in a single research effort. The purpose of this study is to identify commonly implemented school reform initiatives in small Missouri school districts and determine the degree of relationship between those commonly used interventions and student academic success. The factors of student achievement that will be taken into account will include MAP scores, APR results, AYP measures, persistence to graduation and attendance data.

The purpose of this letter is to request your participation by filling out the enclosed data table (Data Table I). Thousands of hours and millions of dollars are spent annually trying to enhance student achievement. Only school officials with a vested interest in the success of their students can speak to the effectiveness of their district's particular blend of efforts. Your response, participation, or non-participation and the data collected on student achievement will not be used in any evaluative manner. All data for this study will be analyzed and presented in the aggregate. No school district or individual will be identified in any written manner.

As a fellow superintendent, I fully understand the value of your time. As a token of my appreciation I will return a $20 gift card to the first fifty superintendents to return a completed data table. In addition, the results of this study will be shared with the superintendent of each participating school district. In short, I am asking you to complete four steps.

1. Read the directions for completion of Data Table I
2. Complete Data Table I (A completed sample data table is included in this packet.)
3. Return the completed data table in the self-addressed, stamped envelope provided.
4. Please include your return address on the card provided in order to assure receipt of your gift card.

Participation in this study is voluntary and confidential. This study has been reviewed and approved by the Campus Institutional Review Board and complies with all federal regulations, state and local laws and Campus IRB policies and procedures. If you have any questions about the study, please contact Campus IRB, at 483 McReynolds, University of Missouri, Columbia, Missouri 65211 (573) 882-9585.
Should you choose to contribute to this study, I wish to thank you for your support and effort. If you have any questions about the survey or completion of the data table, please do not hesitate to

contact me. There is no substitute for your knowledge and understanding. I hope you will take the time to respond by filling out the enclosed data table. Thank you for taking the time to read this letter. I look forward to receiving your response.

Sincerely,

Jim Masters
Superintendent/Doctoral Student
Monroe City R-I School District
401 Hwys. 24/36 East
Monroe City, Missouri 63456
573 735-4631
jmasters@monroe.k12.mo.us

Appendix B

Data Table I and Instructions for Completion

DATA TABLE I	*REFORM INITIATIVE*	*REFORM INITIATIVE*	*REFORM INITIATIVE*	*REFORM INITIATIVE*	*REFORM INITIATIVE*
At the top of each column, list the names of no more than five KEY reform initiatives present in your district.					
For each reform, indicate whether that reform was designed to impact an elementary school, a middle school or a high school (check all that apply).	☐ Elem School ☐ Middle School ☐ High School	☐ Elem School ☐ Middle School ☐ High School	☐ Elem School ☐ Middle School ☐ High School	☐ Elem School ☐ Middle School ☐ High School	☐ Elem School ☐ Middle School ☐ High School
At the time of this survey, which best describes the degree of implementation of the reform?	☐ Studying and building awareness ☐ In progress; not fully implemented ☐ Fully implemented	☐ Studying and building awareness ☐ In progress; not fully implemented ☐ Fully implemented	☐ Studying and building awareness ☐ In progress; not fully implemented ☐ Fully implemented	☐ Studying and building awareness ☐ In progress; not fully implemented ☐ Fully implemented	☐ Studying and building awareness ☐ In progress; not fully implemented ☐ Fully implemented
Approximately what year did you begin the study and awareness stage of this reform?					
Approximately what year did you reach full implementation of this reform? (If reached)					

Approximately how much money was spent this past school year on this reform?					
Approximately how many hours of personnel time were invested on this reform last school year?					
Describe your perception of the impact of this reform on the academic success of your students.	☐ No Impact ☐ Slight Impact ☐ Strong Impact	☐ No Impact ☐ Slight Impact ☐ Strong Impact	☐ No Impact ☐ Slight Impact ☐ Strong Impact	☐ No Impact ☐ Slight Impact ☐ Strong Impact	☐ No Impact ☐ Slight Impact ☐ Strong Impact

DIRECTIONS FOR COMPLETION OF DATA TABLE I
School Reform/Initiative Information

Thank you for taking the time to complete the attached data table. The purpose of this study is to identify commonly implemented school reforms or initiatives in Missouri school districts and determine the degree of relationship between commonly implemented practices and student academic success. School districts across Missouri, with K-12 student populations between 500 and 2000 students are being asked to take part in this study. Factors of student achievement that will be taken into account include MAP scores, APR results, AYP outcomes, persistence to graduation and attendance. As this is a broad study of commonly implemented reforms/initiatives and their relationship to student academic success, all individual district responses will be kept confidential.

The table asks for eight distinct categories of information

1. Reforms or initiatives currently in place in your district.
2. Identification of the building level the reform is targeting.
3. Degree of implementation – Is the reform in the preliminary stage, in progress or fully implemented?
4. Identify the year the study and awareness stage of the reform was initiated.
5. Identify the year in which the reform was fully implemented.
6. Estimate the district expenditures in support of the identified reform last school year.
7. Estimate how many personnel hours are invested in the reform last school year.
8. Your perception of the reform/initiative's overall impact on student academic success.

Directions for Completion of Data Table I

Please note: The focus of this study is on significant efforts to improve outcomes of the schooling experience. Report only those efforts that are designed to impact an entire school or district; or those reforms or initiatives you feel are particularly important to improving student academic success. Please select no more than five.

School District Name

- At the top of Data Table I, please indicate the name of the school district in which the reform/initiative has been implemented.

Reform/Initiative (Row 1)

- Record the name/title of the reform/initiative currently implemented in your district. Please limit your response to no more than five key reforms or initiatives.

Targeted Level (Row 2)

- For each identified reform, indicate whether the reform was designed to impact elementary, middle or high school. Check all that apply.

Implementation (Rows 3-5)

- Row 3 – As it applies on the day this survey is completed, describe the degree of implementation of the identified reform (Study, In Progress or Fully Implemented).
- Row 4 – Identify the year your district/building began the study and awareness stage of the reform.
- Row 5 – Identify the year in which full implementation was achieved. Full implementation refers to having all the requisite pieces in place. It is not necessarily dependent on measurable results.

District Expenditures (Row 6)

- State the approximate amount of expenditures in the last school year for each identified reform. Expenditures include, but are not limited to study materials, supplies, professional development, speakers, substitute teachers, travel etc.

Personnel Hours (Row 7)

- List the approximate number of scheduled personnel hours invested in the identified reform during the last school year. Include professional development sessions, team meetings, study group participation etc.

Perception of Reform/Initiative's Impact on Student Academic Success* (Row 8)

- In this row please record your perception of the overall impact the identified reform/initiative has had on student academic success using the following scale.
    - No Impact
    - Slight Impact
    - Strong Impact

*For the purpose of this study, Student Academic Success will be defined as: The attainment of specified content area proficiencies as measured by standardized state assessments and appropriate levels of participation as indicated by attendance and persistence to graduation metrics.

If you would like to receive a copy of the results of this study, please check space located in the bottom right hand corner of the table labeled **SEND STUDY RESULTS ___**.

Please place the completed data table in the self-addressed, stamped envelope provided and return to:

Jim Masters, Superintendent
Monroe City R-I School District
401 Hwys. 24/36 East
Monroe City, Missouri 63456

If you have any questions, do not hesitate to contact me at 573 735-4631 (Extension 1112) or by e-mail jmasters@monroe.k12.mo.us Thank you for your time and effort.

Appendix C

Campus IRB Approval Documentation

Campus Institutional Review Board
University of Missouri-Columbia

485 McReynolds Hall
Columbia, MO 65211-1150
PHONE: (573) 882-9585
FAX: (573) 884-0663

December 14, 2011

Principal Investigator: Masters, James P
Department: ELPA

Your Application to project entitled *An Exploratory Study of Reform Initiatives in Relatively Small Missouri School Districts* was reviewed and approved by the MU Campus Institutional Review Board according to terms and conditions described below:

IRB Project Number	1200300
Funding Source	Not Applicable
Initial Application Approval Date	December 14, 2011
IRB Expiration Date	December 14, 2012
Level of Review	Exempt
Project Status	Active - Open to Enrollment
Regulation	45 CFR 46.101b(1)
Risk Level	Minimal Risk

The principal investigator (PI) is responsible for all aspects and conduct of this study. The PI must comply with the following conditions of the approval:

1. No subjects may be involved in any study procedure prior to the IRB approval date or after the expiration date.
2. All unanticipated problems, serious adverse events, and deviations must be reported to the IRB within 5 days.
3. All modifications must be IRB approved by submitting the Exempt Amendment prior to implementation unless they are intended to reduce risk.
4. All recruitment materials and methods must be approved by the IRB prior to being used.
5. The Annual Exempt Certification Form must be submitted to the IRB for review and approval at least 30 days prior to the project expiration date.
6. Maintain all research records for a period of seven years from the project completion date.
7. Utilize the IRB stamped document informing subjects of the research and other approved research documents located within the document storage section of eIRB.

If you have any questions, please contact the Campus IRB at 573-882-9585 or umcresearchcirb@missouri.edu.

Thank you,

Charles Borduin, PhD
Campus IRB Chair

VITA

James P. Masters was born on June 12, 1960 in Phoenix, Arizona. Following attendance in seven different school districts from kindergarten through twelfth grade, he graduated from Central High School in Camp Point, Illinois in 1978. He received a Bachelor of Science degree from Culver Stockton College in 1982, a Masters in Education from Quincy University in 1998 and an Educational Specialist degree from the University of Missouri in 2002.

Jim has served in public and private schools, as a science and physical education teacher and coached multiple athletic activities at the middle and high school levels. After twelve years as a classroom teacher, he crossed over to the dark side to assume middle school principal duties, serving in that capacity for seven years. For the last eight years, he has served as superintendent in two relatively small rural school districts in northeast Missouri.

Jim is married to the former Brenda Wilkey of Coatsburg, Illinois. They have two children. Jacob, also a graduate of the University of Missouri, and Meredith who is currently planning her freshman year in high school.