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AN INQUIRY INTO THE POLITICAL, SOCIO-ECONOMIC, GEOGRAPHIC, AND  
EDUCATIONAL FACTORS THAT PREDICT RACE TO THE TOP WINNERS AND  
LOSERS

by

Brian Brewer

A Dissertation

Submitted in Partial Fulfillment of the

Requirement for the Degree of

Doctor of Education

Major: Leadership and Policy Studies

The University of Memphis

May 2017

## **Abstract**

Brewer, Brian Wade. EdD. The University of Memphis. May, 2017. An Inquiry into the Political, Socio-economic, Geographic, and Educational Factors that Predict Race to the Top Winners and Losers. Major Professor: Dr. Charisse Gulosino.

This research investigated the effect of political, economic, racial, academic, geographic data, and the components of the Race to the Top grant against the Race to the Top grant awards. Data for all 50 states and the District of Columbia was compiled from the federal Race to the Top documents, the Georgetown University Stateminder dataset, and the U.S. Census Bureau to create a combined dataset. The combined dataset included a combination of the 2009 scores from Delaware and Tennessee and the 2010 scores of all other states. Since the scores from 2009 only resulted in two winners, and the 2010 scores resulted in seventeen winners, the 2010 data became the basis for the dataset while including the 2009 data for the two first-round winners. Predictor data for states that did not apply for Race to the Top also was included in the dataset for an extended analysis of self-exclusion of the non-applying states. The analysis used multiple comparison of means, a standard regression model and the Heckman selection regression model to determine if any of the predictors affected the Race to the Top awards. The comparison of means analyzed the differences in averages for Race to the Top Winners and Applicants. The means and the significance of the means for the predictor values, and the means of the scores of the Race to the Top components were calculated. A comparison of number and percentage of significant predictor occurrence, and the means of the Race to the Top components by geographic location was compiled. The standard regression was calculated using the 38 applying states. Since all states did not apply for Race to the Top, and the standard regression model did not account for these exclusions, a secondary regression model, The Heckman Selection Model, was used in conjunction with the standard regression to determine if the

excluded states would influence predictor effect. The results demonstrated that several predictors did have a significant effect on Race to the Top application scores and, ultimately, the winning and losing states. Specifically, political affiliation of the state legislative process, race, and academics were significant.

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## **Chapter 1**

### **Introduction**

#### **Recognition of the Problem**

Education in the United States has seen multiple interjections from the federal government. National and international events have spurred action by Congress and the President to redirect or reform the states' educational systems to address the educational gaps evidenced through these events. America's education system has been considered inferior to other countries, and therefore, needs to be redirected. Government programs designed to modify the educational landscape in America have appeared with increasing frequency, and the requirements on the states have become more stringent as well. Federal programs that were introduced, typically, offered equitable funding to states based upon predetermined criteria (Anderson, 2007). This meant that there was no competition for grant money, and the states simply had to implement the changes required from the federal government to receive the grant.

Race to the Top (RTTT) changed that paradigm. States competed against each other by responding to a grant proposal and promising sweeping changes in their educational policies and processes to receive additional grant funding. States that were not willing to implement sweeping educational reform or were not able to meet the criteria at a high level based upon rater review received less or no funding. This created a disparity between states, and spurred debate among education leaders about the grant award process. The rating and award process was objective in nature and left opportunity for outside influence in final decisions. Exterior influence may have affected the scoring and awards process. Analysis of the section scores and how those sections were weighted may have significant influence in the grant awards.



## **Emergence of the Problem**

In 1983, a debated report on whether American education was failing was presented, “A Nation at Risk” (Berliner, 1995). This report detailed a disturbing trend in the educational landscape and what correction was needed became the fulcrum of a shift in educational progress and policy in the United States (Berliner, 1995). Educational initiatives from the state and federal levels began to define how students were educated and what made effective classroom teachers. Student testing started to become the norm for public education as school leaders and politicians struggled to identify track key student performance indicators. Many public school students were evaluated using standardized tests created by states like Iowa or California, but as student performance became more scrutinized, states began to move toward testing processes that included high-stakes, end-of-course testing in core subject areas including English, Mathematics, Science, and History.

One of the indicators used to define how American students compared to the rest of the world’s students has been the United States’ performance on international standardized tests. Every three years, Program for International Student Assessment (PISA), an international standardized test, is given to 15-year-old students. Thirty-two countries participated in 2000, and 65 countries participated in 2012 (Kelly et al., 2013). In 2006, the United States scored 35<sup>th</sup> out of the top 40 countries in mathematics and 31<sup>st</sup> in science. There was a decline in ranking and raw score from the tests given 3 years earlier (Darling-Hammond & McCloskey, 2008). Reading scores for United States’ students were closer to the PISA average in 2000. American students had an average score of 504 compared to the PISA average of 500 (Office of Educational Research and Improvement, U.S. Department of Education, 2001). In 2012, the United States

scored at the PISA average of 496 (OECD, 2013). The results of the mathematics assessment showed a considerable deficiency in the competitive ability of American students in the global job market, especially in the Science, Technology, Engineering, and Math (STEM) jobs that are expected to see the highest job growth. Even with the reading scores at the PISA average, the results showed that the U.S. students were not reading the highest levels, compared with their international peers.

### **Historical Perspective**

According to the tenth amendment, education is a responsibility of the states to fund and maintain. However, there is an arguable belief throughout the history of the United States that the federal government has consistently attempted to influence education (see e.g., (Sunderman & Kim, 2007)). The U.S. Constitution does not mention education, therefore, by extension, the federal government has no direct control or funding responsibility. However, the federal government can pass legislation and influence the educational process through distributed and competitive grants. As early as the late 1700s, legislation to inject federal dollars and influence in the education system were being introduced in Congress. One of the first was the Ordinance of 1785 and the Northwest Ordinance of 1787 that divided townships into 36-square-mile sections and then subdivided into 1-acre lots where the 16<sup>th</sup> and eventually 36<sup>th</sup> lot was set aside for education and the money raised from renting the lots and their eventual sale was earmarked for education. These early ordinances created an immediate debate over federal influence on education (Anderson, 2007). Other land-grant styled legislation, specifically the Morrill Act of 1862, created higher-education institutes and all of the land-grant legislations set a precedent for categorical aid that still exists today (Anderson, 2007).

Further legislative attempts were made to provide federal funding to public education. In the 1880s, the Blair Bill would have required states to educate all children without exception (Anderson, 2007). The bill allowed for segregation, but would have forced states to educate children of all races and economic backgrounds. The bill was thought to garner support from the Southern states since the money allocations would be based upon illiteracy rates, which were high in the South, but the requirement of educating all students as well as other influences on Southern Congressmen did not garner the expected support (Going, 1957). The bill passed the Senate several times, but never made it through the House of Representatives (Evans, 1960). The Blair Bill was also unique because it would have provided education funding based upon illiteracy rates and number of school-age children giving money directly to states rather than through the land-grant systems previously implemented (Anderson, 2007). The bill met strong resistance from groups who did not want the federal government's influence or potential takeover of schools as well as the Catholic Church that argued the funding should have been extended to parochial schools as well (Evans, 1960). The Blair Bill failed its fourth reading in the Senate and was not reintroduced (Evans, 1960).

Prior to World War I, the Smith-Hughes Act of 1917 provided funding for vocational programs in public schools (Hillison, 1995). The Smith-Hughes Act was the first categorical funding act for federal education dollars (Anderson, 2007). The act received support from powerful lobbyists including the American Federation of Labor (AFL), the National Education Association (NEA), the National Association of Manufacturers (NAM), the U.S. Chamber of Commerce, and the National Democratic Party (Hillison, 1995). The act directed the use of federal dollars to increase American education's competitiveness on the international market (Anderson, 2007). After World War I and during the depression, tax dollars for education were

scarce, but federal relief acts of the time did provide funding to maintain educational systems by providing funding to keep teachers employed and build schools (Anderson, 2007). The government also implemented the Lanham Act in 1941 and the Impact Aid laws of 1950 that provided incentives and compensation to local schools that supported military bases (U.S. Department of Education, 2016). The 1994 “G.I. Bill” expanded the federal government’s role in education by providing post-secondary funding for World War II veterans (U.S. Department of Education, 2016). The political strategies introduced with the Smith-Hughes Act and military-based legislation set the methodology for the current federal education grant policies (Anderson, 2007).

A rudimentary Department of Education was created in 1867 to gather data and monitor the nation’s education (U.S. Department of Education, 2016), but it was not a part of the Presidential cabinet or an official government office until the Elementary and Secondary Education Act (ESEA), signed by President Johnson in 1965, created the federal Department of Education (Anderson, 2007). The civil rights laws of the 1960s and 1970s expanded the focus of the Department of Education to manage equal access to education as set forth by the new laws (U.S. Department of Education, 2016). It was not until 1980 that Congress made the Department of Education a Cabinet level position (U.S. Department of Education, 2016).

Two significant international events between the 1950s and the 1980s further defined the federal government’s role in education and set the baseline for further federal education policies. The first was the launch of Sputnik by the Soviet Union, which led to the introduction of the National Defense Education Act of 1958 (NDEA) (U.S. Department of Education, 2016). The NDEA was an effort to help American students compete with the Soviet Union in scientific and technical fields. It also provided loans to college students, provided graduate fellowships, and

increased foreign language education at the secondary level (U.S. Department of Education, 2016). The second major event was the “Nation at Risk Report,” which was commissioned by President Reagan’s administration and released in 1983 (Editorial Projects in Education Research Center, 2004). The report used statistical data to show inadequate educational performance and linked the need for improvement to the success of America’s economy (Editorial Projects in Education Research Center, 2004). The report generated a “crisis” in education and the proposed reforms largely focused on raising academic standards and increasing learning time (Anderson, 2007). The recommended changes in education from the report have been the basis of the curriculum secondary students follow, even today. Over time, scholars have rebutted the validity of the report saying that the statistics were flawed and the report was a way for political influence to change the course of public education (Editorial Projects in Education Research Center, 2004). Twenty years after the Nation at Risk report, data showed that American education has not improved (Peterson, 2003).

In 1989, the National Governors’ Association’s held an “Education Summit” in Charlottesville, Virginia. President George H.W. Bush, the nation’s governors, and business leaders determined that education needed to move to a business-style accountability system (Klein, 2014). States were still responsible for the implementation, but the federal government started advocating for standards and accountability that made the federal role give the sense of a larger entity. In 1994, when the ESEA was reauthorized under President Bill Clinton, it was called the Improving America’s Schools Act (IASA). States were required to adopt academic standards and assessments, and states’ compliance to these new requirements were tied to Title I funding (Cantrell, 2013), and as part of President Clinton’s “Goals 2000” initiative, states were asked for voluntary participation in setting national education standards. However, like “Nation

at Risk” and the “Education Summit,” no legislation resulted that would fundamentally alter the behavior of the states (Klein, 2014).

Since each state controlled how their students were educated, including the funding students received and tracking students’ academic progress, each state was not held to a common standard or achievement expectation for students (Klein, 2014). To persuade a more consistent educational process across the states, the federal government created two educational policies. In 2001, No Child Left Behind (NCLB) was introduced by President George W. Bush’s administration that included financial penalties in Title 1 funding (Hess & Petrilli, 2006). NCLB created a more forceful induction by the federal government into public education (Hess & Petrilli, 2006). Like IASA, NCLB put states’ Title I funding at risk for non-compliance, but the legislation had the support to enforce it. Therefore, more pressure was put on the states to meet requirements on assessments, student achievement, equal access to education, and other things (Ahn & Vigdor, 2013).

In 2007, NCLB was not reauthorized and President Barak Obama, in his first term, initiated the Race to the Top (RTTT) initiative as part of the American Recovery and Reinvestment Act (ARRA) (J. Weiss, 2015). RTTT offered grant money through the Title 1 system as well as a competitive process for additional funds to coerce change in the states’ educational models. All states accepted money from NCLB, but the states were not required to create a common accountability system, therefore, the result was a widely varying set of educational accountability systems among all of the states and the District of Columbia (Linn, Baker, & Betebenner, 2002). Before NCLB, state participation in any federal initiative was strictly voluntary and did not lead to consensus among the states’ education departments.

To try and combat the issue of low performance among graduating students, initiatives like No Child Left Behind (NCLB) and Race to the Top (RTTT) have become larger parts of our educational landscape (Thomas, 2013). States, through federal programs, have initiated more changes in public education to increase accountability in education and improve student performance (Thomas, 2013). However, the standards that were currently in place to measure student performance were deemed inadequate to ensure American students were prepared to compete on a global scale. Therefore, the standards and their accompanying assessments became more rigorous. Schools were expected to meet these new standards immediately with teachers and students who have never been held to these higher standards or been exposed to the technology being implemented.

When RTTT was introduced, the states were in the middle of a budgetary crisis due to the recession America was experiencing (J. Weiss, 2015). Most of the states' and districts' budgets were consumed in operating expenses which means that the funding for any additional initiatives had to be taken from existing programs which was unpopular or difficult depending on the needs of the districts and their students. The lack of discretionary money for improvement initiatives made the RTTT grant appealing to lawmakers and state leaders. Increasing taxes to fund existing educational needs from the state or local level has been difficult if not impossible due to the economic and political climate that existed, which meant little or no funding for improvement initiatives. Considering the economic and educational situation of the states and the country, refusing additional educational funding to improve student achievement made states willing to make concessions in their educational processes to show their support for improvement in the education of the state's children (E. Weiss, 2013).

### **Within the Educational Leadership Discipline**

Education leaders have struggled with how to improve student learning. Federal initiatives to improve American education have largely been ineffective in changing the overall performance of students (Peterson, 2003). Federal initiatives like Race to the Top have introduced significant changes in the educational landscape of the states that applied and won the competitive grant funding. Leaders at the state and local levels scrambled to meet the new requirements through policy and procedural changes that did not garner support from many people in the educational system including teachers and teacher unions. The relationship between local educators and state leaders become more strained as the states implemented new teacher evaluation systems, testing systems, educator preparation and licensing requirements, and legislation allowing the growth of charter management organizations.

### **Within Contemporary and Local Experience**

New testing requirements pushed local technical systems to the limit. Teachers and leaders tried to implement new classroom pedagogy to address the new tests with limited resources and exposure to the new requirements. Students who have never been required to perform to these new standards were working to meet the new benchmarks with limited success. Schools, facing the possibility of closure or state takeover, were uncertain of their future. The loss of students to state and charter associations affected school district funding, especially in large urban districts. Less state funding led to budget shortfalls and an increased pressure on local governments to close the funding gaps.



## **Statement of the Problem**

The Race to the Top competitive grant proposal was a subjective rating process. Multiple “raters” read the responses from the states and assigned a score to each section and sub-section. The scores were totaled, and in a perfect process, the highest scoring states would receive some level of funding. Since the scoring process was subjective, and the final award system was not clearly defined, an analysis of the states’ responses and the ratings assigned to those responses could help clarify what parts of the grant proposal were weighted heavier than others. The analysis between ratings and awards will lead to a better understanding of what components of Race to the Top truly influenced the grant awards and if any outside influence may have changed the final awards.

## **Previous Research Related to this Problem**

Several research strands exist in relationship to Race to the Top. The most common research was about the policy changes that the states implemented to receive the grant funding. In the research about policies, the authors discussed the grant proposal process and the potential political influence involved, but the research does not delve into the components of the grant proposal. The second most common research strand was the impact of Race to the Top on student achievement. Like the policy research strands, these strands of research were not focused on the grant proposal process, but more about the outcomes of the implementation by the states. Other, less numerous, research strands focused on varying impacts of the grant and its implementation exist, but again do not focus on the grant process directly.

Two research articles focusing on the grant proposal process were found. Though they do not focus on each of the section and sub-section ratings, they do address the rating process and provide insight into the awards process from the lens of their research. The first was a report

by Daniel H. Bowen in September, 2010. His research focused on the Race to the Top grant awards through a lens of political influence. The purpose of the research was to apply quantifiable value to the political climate of the states that won a RTTT grant. The author performed a regression analysis by assigning values to a state's projected Race to the Top score, a measurement of a state's competitiveness in the 2008 presidential election, whether a Senate seat was contested in the 2010 election, and whether the state's Governor seat was contested in the 2010 election (Bowen, 2010). The first finding of the analysis showed that states with highly-contested Senate and Governor seats increased the round one scores by 35 to 75 points (Bowen, 2010). The second finding was the state's political circumstances and education reform record helped predict the first round scores (Bowen, 2010). Analyzing the results led to the determination that the specific researched political climates of states like Delaware, Tennessee, and Illinois were higher than projected due to the approaching contested elections and states like Louisiana, North Carolina, and South Carolina scored lower than projected (Bowen, 2010).

The second research was a policy brief by The New Teacher Project in December, 2010. This research focused on the review process and how it allowed the reviewers too much freedom in assigning and deducting points, and the refusal of the Department of Education to intervene in the final results (The New Teacher Project, 2010). Specifically, the analysis was trying to determine if states' scores were too inconsistent based upon the harshness or leniency of the raters (The New Teacher Project, 2010). The raters were given basic guidance on scoring but made their own interpretations of the scoring rubric, and scoring feedback from The Department of Education did not force the raters to adjust their scoring (The New Teacher Project, 2010). The analysis also revealed that raters also artificially inflated scores of the states that were identified as finalists after the first round awards were made to Delaware and Tennessee (The

New Teacher Project, 2010). A third part of the analysis showed that the subjectivity of the rating process may have affected the results where raters who had a more positive view of an application may have freely given too many points (The New Teacher Project, 2010). Finally, the analysis determined that states who made significant changes in laws and policies as part of the application process did not always receive favorable scores compared to states that were more ambiguous in their plans, especially related to the more poignant sections of the application which means that states with intention to change were given equal or greater consideration as states who made the changes to show commitment to their application (The New Teacher Project, 2010).

Reviewing the results of the research by Bowen and The New Teacher Project compared to the methodology of this research gives some insight into external influences of analyzing the Race to the Top data and applications. The political impact on a process as large as Race to the Top was evidenced by Bowen's (2010) research. Largely contested state and federal elections and political climate could have influenced the flow of grant money to states that may not have scored the most points on the grading rubric (Bowen, 2010). Scoring qualitative data into a quantitative measurement, as was done by the Race to the Top raters and in this research, brings in a level of subjectivity. When multiple raters are used to score documents, a consistent, repeatable process has to be implemented to try and ensure equal opportunity to all participants (The New Teacher Project, 2010). According to The New Teacher Project's (2010) research, the consistency between raters was not evident, and may have affected the final outcomes of the grant award process. Beyond the rating discrepancies, the U.S. Department of Education did not correct or adjust the raters' actions to ensure equity in the process. Also, the Department of

Education did not intervene in the selection process if scoring bias was suspected (The New Teacher Project, 2010).

### **Purpose of this Study**

This research will investigate how states' responses to the Race to the Top (RTTT) proposal, if specific focus areas of the requirements may have garnered a greater influence on those awards, and any influence that political, economic, racial, social, and geography may have influenced the Race to the Top (RTTT) grant awards. The purpose of this study is to collect the states' RTTT applications, the federal raters' scoring documents, and the Stateminder dataset to identify variables and assign values to perform a quantitative analysis. Using multiple predictors, the researcher will be able to determine what factors had influence on the grant awards, and if any outside influence may have affected the outcomes. Prior work on local grant competitions and competitive federal grants, which has shown that the capacity of potential grant recipients to administer grant-funded programs, is an important factor that helps to explain how these competitive grants unfold (Berry, Burden, & Howell, 2010; Bickers & Stein, 2004; Manna & Ryan, 2011).

### **Significance of the Study**

This research can be valuable to educational leaders looking for guidance on federal education policy foci that may better align local and state initiatives. The authorization of Every Student Succeeds Act (ESSA) changes the landscape of federal Race to the Top education policy. However, as supporters of federalism continue to attempt influence of federal education policy, or if the federal government returns to offering competitive grant funding, knowing the key indicators may allow states to align their proposals closer to the federal expectations. Political leaders may be able to use this research to identify factors that would keep states from

applying for grants, and perform internal reviews to ensure equity among applicants. Groups may find the results of this study useful as other influences of the process come to light. Other areas of federal funding may also use the foundational structure of Race to the Top to provide state funding (J. Weiss, 2015), therefore, the findings of this research may have a broader impact than federal educational funding.

### **Research Questions**

After analyzing the rater and state application documents and performing the coding process to create a composite dataset, the research is divided into four questions.

1. What are the political, social, economic, educational, and geographic patterns/characteristics of winning states and applying states in the national Race to the Top (RTTT) competition?
2. Do the scores across different sections of the RTTT application differ between winning and applying states?
3. What political, social, economic, educational, and geographic characteristics may have influenced states' final scores on the RTTT grant competition, controlling for potential selection bias between applicants and non-applicants of RTTT?

Question 1 took the information in the dataset to see patterns between the predictor values and grant awards. Question 2 analyzed the dataset for differences in the scoring between winning and losing states across the different sections of the Race to the Top application. Question 3 used the output from a standard and Heckman selection multiple regression models to determine which predictors had significant influence in the scores.

### **Scope and Delimitations of the Study**

The study includes the Race to the Top states that applied for tier one or tier two funding in 2009 and 2010. The 50 states and the District of Columbia were invited to apply for the race to the Top grant. Only two states won funding in 2009. Therefore, the data from 2009 was combined with 2010 to overcome the small sample size created by the 2009 winning states. Ten states did not apply for phase one funding, and 13 states did not apply for the phase two. The applicants were able to resubmit their applications in 2010 and earned a different score from 2009. Since the winners from 2009 were combined with the 2010 data to have a larger sample, the 13 states that did not reapply in 2010 were excluded from the standard analysis. Therefore, 38 applicants had data available for this research. States' applications along with the the rater documents and scores for each application will be used to code the data for the analysis. Political, social, economic, racial, and geographic data from Stateminder along with the criteria used in the Race to the Top application were placed into column headers. The existing data from Stateminder and the numerical values provided by the federal rater documents were combined into a single dataset used to perform statistical analyses to determine effects the variables on the final award decisions. Prior research on political influence and the federal government's rating processes and procedures will not part of the research analysis. Although, those strands of research will be used to develop possible explanations of the research results that were outside of the current research.

### **Limitations of the Study**

The scoring documents from the federal Race to the Top rating process were an average of the scores provided by five different individuals using a scoring rubric. A level of bias and inconsistency that can exist within that process could influence the results of the research. A study that codes qualitative data into quantitative data will have opportunities for influence

outside of the researcher's control. Any bias within the research documents will not be filtered through the research processes which could have influenced the research outcomes. Other criterion that may have influenced scoring outside of the scope of this study were not considered.

### **Definition of Terms**

**Carrot hypothesis** is the granting authority placing a temptation in front of the receiving authority that is good enough to entice the receiving authority to do what is required to try and earn the temptation.

**Coding** is a process that takes information presented in language and converts it into a numerical value.

**Federalism** is government where the same territory is controlled by two different levels of the government. In the context of this research, the territory is education, and the two different levels of government are the federal and state governments.

**Intergovernmental grants** are cooperative grants provided to the states by the federal government. Some of the grants have specific requirements/restrictions for how the money can be spent, and other grants are unrestricted in how the money is spent.

**Local Education Associations (LEA's)** are local school districts responsible for the public education of students within their governance boundary

**Quantitative** research uses numerical values along with statistical methods to identify patterns in the data that assist in the identification of relationships and causality in the research.

**Rater** is a person or group of people who score a document using a pre-developed set of criteria.

**Rubric** is a guide created to try and provide a consistent scoring process.

**Strands of Research** refer to alternative methods of defining and studying events that differ from the current research methodology.

### **Organization of this Study**

This study is designed for the reader to follow the thought process of the researcher. Each component of the study gives insight into the development of the study. Five chapters will be used to develop the structure of the study. The first chapter is the introduction to the study document. The beginning of chapter one describes the recognition and emergence of the research problem along with the historical perspective of federal intervention into the states' educational process. An understanding of the history of federal education policy develops an understanding of why the federal government became involved in education and gives insight into the policy development process that led to the current Race to the Top initiative. Chapter one continues to identify the research problem and the previous research that is similar to the research being conducted in this study. The purpose and significance of the study are discussed along with the research questions that drive this study. The scope, delimitations, and limitations of the study are defined. Finally, chapter 1 concludes with a definition of terms to help the reader understand any words or phrases used in the study.

Chapter 2 is the literature review section of the study. Published literature related to federalism, federal education policy formation, and the Race to the Top criteria are discussed. The theories of state and federal educational responsibility and management are discussed, and the structure of the Race to the Top grant are discussed. Federal involvement in state educational matters has sparked debate on both sides of the debate, and the desire to have more federal involvement in education is believed to be the driving force behind the Race to the Top design.



The literature review set the context and background of the research to reach an understanding of the issues and policies developed.

Chapter 3 discusses the methodology being implemented to perform this research. The problem and research questions presented in chapter one are discussed in depth, and the theories employed as part of the research are detailed. This study addresses existing data from the states' Race to the Top applications and the rater documents from the U.S. Department of Education, therefore, no survey instrument is required. However, the population of the study is discussed, and the IRB review and approval will be included in the final document. The data collection and coding process, statistical research methods and techniques, variable definition, and the hypothesis to be tested conclude chapter three.

The findings and observations of the research will be reported in chapter 4. The trends in the dataset will be identified and discussed using a descriptive analysis. The statistical analysis that was performed will be detailed, and any significance will be identified. The result of the significance calculations will be important in determining if the hypothesis being tested is valid. After any significance is determined through the statistical program, SPSS, an analysis of the significant data will be performed. Finally, a summary of the research findings will be presented to give an overall understanding of the research.

The final chapters of the study, chapters 5, 6, and 7, complete the study. Chapter 5 includes the discussion of the study with conclusions reached and recommendations for future research. A complete discussion of the significant findings and a final summary of the research results are in chapter 5. Chapters 6 and 7 are the references and supporting appendixes of the research. In the appendixes, the variable definitions, coding tables, and analysis tables will be included for readers and other researchers to review.

## Chapter 2

### Literature Review

#### Federalism

The United States' style of governance includes a federal government that is responsible for national concerns and operations, and a state governance system that is responsible for local concerns (Legal Information Institute, 2016). The roles of the federal and state governments, though distinct, based upon the Constitution, do not operate autonomous of each other. Issues that are primarily the responsibilities of the states may have cross-responsibility to the larger concerns of the federal government. Federalism is the relationship between the federal and state governments where both entities have jurisdictional authority (Legal Information Institute, 2016). Since the inception of the United States' Constitution, critics and supporters of federal involvement in state-level affairs have voiced their opinions in the federal government's increasing encroachment.

Frank Baumgartner and Bryan Jones (2009) traced and discussed the theoretical, structural, and contextual changes in American politics using a term "punctuated equilibrium." They argued that the political process is not a stable and incremental process, but rather disjointed and varying based upon external influence (Baumgartner & Jones, 2009). Policies are defined and changed through sub-systems of content specialists within different federal agencies and external special interest groups (Baumgartner & Jones, 2009). Policies and the processes to create them would vary over time and not become focused or effective to the issues they were designed to address (Baumgartner & Jones, 2009). However, moments in political or cultural turmoil would leap the policies forward and into action to address the issues (Baumgartner &

Jones, 2009). However, the resulting policies may not have followed the direction hoped by the activists attempting to enact the change (Baumgartner & Jones, 2009).

Political decision-making processes have not used a rational approach where the logical approach to a decision is based upon a tally of the costs and benefits of said decision upon the population (Baumgartner & Jones, 2009). Instead, a narrowed, incomplete attention toward an issue determined its policy outcome without the input of most stakeholders. Enthusiasm for an idea would turn to criticism without weighing the cost or benefit of the implemented policy (Baumgartner & Jones, 2009). Because of the limited focus afforded people and groups of people on issues, especially on a national scale, many decisions required the action of the political subsystems (Baumgartner & Jones, 2009). Activists can redirect policy when the possibility of error or subjectivity in the process is defined and highlighted as inappropriate for the entire citizenship or a subgroup of citizens (Baumgartner & Jones, 2009).

The overlaps of authority between federal and state governments can inhibit or influence change within the political landscape (Baumgartner & Jones, 2009). Due to the separation of powers defined within the Constitution, avenues of appeal exist within the political and legal frameworks. The avenues allow issues to be addressed in multiple venues where the opportunity for feedback, reflection, and correction are possible (Baumgartner & Jones, 2009). Without these structures, one group would be able to monopolize control without the possibility of losing that control (Baumgartner & Jones, 2009). The actions of multiple groups upon an issue provide stability and opportunity for policy change within the society by addressing the components of a problem individually ultimately reaching a comprehensive solution (Baumgartner & Jones, 2009). Therefore, the overlap of federal and state jurisdiction allows the political process to

address the needs of all citizens, to the extent possible, while the separation of powers does not allow one part of the system to dominate (Manna, 2006).

Two types of federalism have been defined by contemporary scholars, cooperative and coercive federalism (McGovern, 2011). The cooperative model was described as collaboration between state and federal governments where shared interests exist (Robinson, 2013). This collaboration includes state implementation of federal policy through federal grants that are distributed to the states either equally or, normally, through an algorithm of need based upon population (McGovern, 2011). Coercive federalism is described as the federal government's use of conditional grants and statutory mandates to force state compliance (McGovern, 2011). Cooperative federalism is a voluntary act between the federal and state governments, where coercive federalism is forced action by the states to meet federal requirements. These relationships are defined by the courts where the limit of federal authority is interpreted (Martin, 2012).

### **Federalism in Education**

Public education in America has been the responsibility of the States since its formation. The U.S. Constitution does not address public education as a responsibility of the federal government, nor has public education been made a right under the Bill of Rights. Therefore, under the tenth amendment, which states “the powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people” (Legal Information Institute, 2016), the states were responsible for providing public education to its citizens. However, since the federal government has no direct authority over public education, the relationship is complex. A level of cooperative federalism existed where the initiatives of the federal government in regards to education were more guidance than

mandate (Manna, 2006). The directives of the federal government were voluntarily implemented by the states (Manna, 2006). Over time, that cooperative model has given way to a more coercive one (Martin, 2012).

Federal intervention in education dates back to the 1700s, where the proceeds from the sale of land in the Northwest Territories were used for public education (Anderson, 2007). At the time, the Supreme Court did not believe that Congress had violated the Commerce Clause, which defines the government's ability to regulate interstate commerce, nor the Tenth Amendment (Martin, 2012). Therefore, no laws were struck down by the Supreme Court (Martin, 2012). At the conclusion of the Civil War in 1865, Congress required the new Union states to provide free education and established a limited Department of Education (Martin, 2012). This expansion of federal involvement spurred the Supreme Court limited Congressional power by prohibiting federal taxation and spending power into state responsibilities (Martin, 2012). Over time, the Supreme Court took a more "nationalist" view and relaxed the restrictions on Congress and their interjection into state education, and saw the Tenth Amendment as a restriction on legislative power (Martin, 2012).

The event that helped shape current federal education policy was enacting the Elementary and Secondary Education Act (ESEA) in 1965 (Manna, 2006). The ESEA legislation was the first federal program to offer funding to schools with specific guidelines for the allocation of federal grant money. The act was comprised of six areas or "titles" that defined the purpose and limitations of the act. Title I, the most financially significant part of the act, provided funding to schools with high concentrations of low-income students (Carleton, 2002). In 2004, Title I was responsible for 23% of the U.S. Department of Education's discretionary budget (Manna, 2006). The second part of the act, Title II, was for instructional materials, and Title III included funding

for counseling secondary and adult students, specialized instruction for advanced students, and remedial instruction for other students (Carleton, 2002). Title IV focused on educational research, and Title V provided funding for states to improve their educational infrastructures and agencies (Carleton, 2002). Title VI provided a significant component to the act in regards to federalism in education. Section 604 of Title VI stated “Nothing contained in this Act shall 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, or over the selection of library resources, textbooks, or other printed or published instructional materials by any educational institution or school system” (Carleton, 2002). This section was significant because it showed the authors of ESEA recognized the division of educational power between the federal and state governments even as the federal government was increasing its role in education (Manna, 2006).

An increase in federal involvement in education continued into the 1980s and 1990s, especially after the release of the “Nation at Risk” report in 1983 (Manna, 2006). During that time, federal education dollars were decreasing or remaining stagnate, and state governors asked for the federal government’s involvement in education monitoring (Manna, 2006; Pinder, 2010). The conservative Supreme Court of the 1980s and 1990s resumed constraints against increased federal roles in non-commercial, state focused policies (Martin, 2012). Despite the continued role of the Supreme Court upholding states’ rights, the federal government continued to provide extensive funding public education (Martin, 2012). To overcome the constraints imposed by the Supreme Court, Congress passed educational policy containing stipulations for states to receive

funding (Martin, 2012). If states did not meet the federal requirements, their funding would be reduced or removed (Martin, 2012).

Schools are an integral function of the democratic society (Robinson, 2013). Public education gives children the equal opportunity to learn and grow to their potential despite the circumstances into which they were born (Robinson, 2013). Education also prepares students to participate in the political systems by giving them access to information and knowledge as well as an understanding of social norms and actions (Robinson, 2013). Schools, in the United States, are expected to address the role of inequality formed by socio-economic inequality that exists with the poor and minority populations (Pinder, 2010). Low graduation rates and inconsistent schooling between socio-economic groups have cost the United States billions of dollars in lost tax revenue as well as the cost of welfare systems like food and housing assistance (Robinson, 2013). Some political groups believe that the states are incapable of providing these essential functions, and since the country needs a citizenship that is prepared to participate politically and financially, the federal government must regulate the nation's educational system (Robinson, 2013).

Anti-Federalism has hindered the equality of education in the United States (Pinder, 2010; Robinson, 2013). Moments of education equity momentum within the country were stymied by the election of Presidential and Congressional leaders that constrained the federalism agenda (Robinson, 2015). One of the areas of educational equity battled in the state and federal courts was equal funding laws (Pinder, 2010). In 1971, the California Supreme Court case *Serrano v. Priest* held that the state's funding law created an educational, economic disparity for students and violated the Equal Protection Clause (Pinder, 2010). Two years later, *San Antonio Independent School District v. Rodriguez* established that the federal courts were unwilling to

recognize education as a fundamental right, which, until No Child Left Behind, returned the burden to the state courts. This left the federal government out of educational funding concerning equal access issues (Pinder, 2010).

Another area of educational equity was in the desegregation cases (Robinson, 2013). The federal courts ruled in *Brown I* and *Brown II* that the states had to desegregate their schools, but the desegregation process was left as a state and local district matter, which allowed states to extend the desegregation process (Robinson, 2013). In 1974, the Supreme Court decided in *Milliken v. Bradley (Milliken I)*, that the desegregation plan for Detroit public schools, which would have created inter-district schools, was invalid, determining that the inter-district system could not be implemented unless the state or neighboring districts had committed intentional acts of segregation (Robinson, 2013). Other cases, *Dowell, Freeman, and Jenkins*, though different in scope to *Milliken I*, saw the same result as *Milliken I*, where the Supreme Court ruled in favor of local education control over federalism (Robinson, 2013). The lack of federal influence over state education has led to renewed segregation of schools where the percentages of Hispanic and African-American students attending 90% to 100% minority schools has increased (Robinson, 2013).

In 1990, President George H.W. Bush called the first national education summit in response to an increasing number of states asking the federal government to get involved in the creation of national education standards (Pinder, 2010). Within this collaborative effort, President Bush promised to limit the federal government's role in education, and the America 2000 plan, a six-goal plan to achieve educational equality, was created (Pinder, 2010). President Clinton, in 1994, took the America 2000 plan a step further, creating the Improving America's Schools Amendment (IASA) (Wong, 2008). IASA tied ESEA Title I funding to states adopting



education standards, along with assessments to measure progress towards the standards (Wong, 2008). In both efforts to achieve educational standards, the federal government could not levee any consequences upon the states for non-compliance (Wong, 2008), therefore, federalism still was not making significant inroads.

With the introduction of No Child Left Behind (NCLB), a reauthorization of ESEA, by President George W. Bush's administration in 2001, the federal government had its first educational policy that had enforceable consequences for state non-compliance (Wong, 2008). States and districts receiving Title I funding were now required to create academic standards and annually test children from elementary to high school (McGuinn, 2016). States had to track student progress, especially in high-poverty schools, and ensure students were meeting an "annual yearly progress" benchmark (Wong, 2008). Schools not meeting the benchmarks were at the mercy of the state governments to realign the schools through closure, takeover, or school-options programs (Wong, 2008). NCLB also enforced teacher qualifications and special education requirements that ensure equal access or "least restrictive environment" to students who, in the past, may have been placed in non-traditional classrooms rather than general education classes (Wong, 2008). Unlike prior federal legislation, NCLB gave federal departments authority to withhold Title I funding from states that did not meet the requirements of the law (McGuinn, 2016). Even though the success or failure of NCLB has been widely debated and many groups including the National Education Association (NEA) and civil rights groups were against the implementation, federalism had finally become part of the national educational landscape which expanded under Race to the Top (RTTT) (McGuinn, 2016).

President Obama's response to NCLB was uncertain since so many democratic party supporting groups were unhappy with its implementation (McGuinn, 2016). Surprising many,

the Obama administration introduced the Race to the Top (RTTT) legislation as part of the American Recovery and Reinvestment Act (ARRA) of 2009. Race to the Top continued the premises of NCLB and added a competitive grant process that offered states additional funding by meeting a predetermined set of educational reforms (Robinson, 2015). The administration was very aggressive in their push to implement RTTT, and the efforts by many states to implement or show gains led to a backlash (McGuinn, 2016). The educational policies that the administration was trying to enact were not being embraced by state or federal legislators, and Presidential decree would not effectively implement them (Howell, 2015).

In 2015, the ESEA was reauthorized again into Every Student Succeeds Act (ESSA) (McGuinn, 2016). ESSA rolled-back many of the authorizations of RTTT, returning education control in favor of the states with federal oversight (Education Week, 2015). States still have to create accountability plans, systems, and goals reported to the U.S. Department of Education (Education Week, 2015). States also have to manage and intervene in low-performing, non-improving schools using the same processes from NCLB (Education Week, 2015). State testing, educational standards, English learners, special education, and school choice were part of the ESSA design (Education Week, 2015). An interesting component of ESSA was the removal of the requirement for student outcomes included in teacher evaluation models, which was the same as the NCLB waivers before RTTT (Education Week, 2015).

Groups that support the separation of federal and state jurisdictions point to education as a Constitutional right given to the citizens through state, not the federal, Constitutions (Lawson, 2013). Every state Constitution includes a guarantee of free public education to its citizens (Lawson, 2013). The state courts administer these guarantees by evaluating the educational policies under Equal Protection or adequacy laws where education is a civil right (Lawson,

2013). By the existence of these evaluation processes, state courts are able to legislate educational requirements to benefit the children of the state (Lawson, 2013). When the federal government begins to regulate education, the states become constrained in their ability to properly protect children's rights to education (Lawson, 2013). These constraints prevent the state legislature and courts from effectively operating in tandem (Lawson, 2013). In contrast, states have no remedy or jurisdiction upon federal laws and cannot efficiently address federal education policies (Lawson, 2013).

With the authorization of ESSA, the federal and state jurisdictional lines are more separated than during Race to the Top, though not as distinct as before No Child Left Behind. Federal education supporters will certainly continue to lobby for increased federal influence in education, and groups that want less federal influence in state responsibilities will lobby for less federal interference. The goal should be the improvement of education for the nation's students, and the results have not shown that any of the programs, regardless of who drives them, have shown marked improvement.

### **New Policy Implementation**

Due to the complexity and extensive stakeholder involvement of educational reform, state educational reform moved from the mandate model of No Child Left Behind to the collaborative redesign process of Race to the Top (Russell et al., 2015). States with lower capacity to influence educational practice networked with inter-agency and private sector organizations to implement policy changes (Russell et al., 2015). Private foundations like The Gates Foundation became more involved in states with limited capacity or high urban poverty to help bolster educational change (Russell et al., 2015). Several states rejected Race to the Top to protect their state educational interests, and did not participate in any part of the process (Vergari, 2012).

Other states, after receiving feedback from federal raters in the phase one application, decided that it was not in their state's best interest to reapply (Vergari, 2012). Other states experienced political turmoil over issue like Common Core and clashes with teacher unions (Vergari, 2012). As states applied, their responses were tailored to the capacities and abilities of the state, which allowed the implementations to vary (Adler, 2012). This variation allowed the states and federal government to watch, recognize, and implement others' successful processes, which is a different result from mandated policies (Adler, 2012).

Before the implementation of Race to the Top, state implementation of new policies was slowly increasing, and accountability systems were decreasing (Howell, 2015). The states that won Race to the Top funding, obviously, saw the largest increase in new policy implementation (Howell, 2015). States that did not win funding, partially part of the application process, saw significant increases in new policies (Howell, 2015). Interestingly, states that did not apply for funding also saw a significant increase in new educational legislation compared to policy changes prior to 2009 (Howell, 2015). The non-applying states did see the importance of keeping pace with other states even if they did not approve of the federal policies (Howell, 2015).

States passed legislation that allowed public school vouchers, state takeover of poor performing schools, and increased implementation of charter schools (Wong & Shen, 2002). States implemented takeover systems that intervened in local schools that were not meeting educational expectations (Arsen & Mason, 2013). Michigan implemented emergency managers that could perform any act it deemed necessary to turn around schools including cancelling contracts, opening and closing schools, and modifying academic programs (Arsen & Mason, 2013). These actions have been praised by supporters (Arsen & Mason, 2013). Opponents saw

these actions as a mechanism to diminish or undermine local district authority (Arsen & Mason, 2013). Charter school access and the expanded involvement of private foundations increased in many states, especially in winning states (Finch, 2015). Even though charter schools have increased more in winning states than non-winning states, the rate of increase maintained the trend that existed before Race to the top (Howell, 2015).

Twenty-nine states created statewide teacher evaluation systems (Russell et al., 2015). The expanded role of the federal government in educational policies raised concerns in federal over-extension into a state-controlled process (Superfine et al., 2012). Teacher evaluations were a significant part of Race to the Top (Bleiberg & Harbatkin, 2016). The changes in teacher evaluation and governance policies related to the Race to the Top grant process found approval and dissent (Superfine et al., 2012). States removed teacher union bargaining rights, since unions were seen as a barrier to educational reform (Bleiberg & Harbatkin, 2016). Private education foundations, like the Gates Foundation, found footing in states that were willing to make changes to teacher evaluation and other education policies in exchange for additional funding (Bleiberg & Harbatkin, 2016).

### **Carrot Theory and Intergovernmental Grant Process**

The federal government has struggled to enforce educational policies, even under enforceable acts like No Child Left Behind (Vergari, 2012). Withholding federal money to the states as a means of enforcement ultimately punishes students who have no control over the policies of the state (Vergari, 2012). Race to the Top was an effort by the Obama administration to overcome the forced-compliance model of education reform to a model of innovation coerced by a substantial infusion of money to implement reforms (McGuinn, 2012). The federal government offered \$650 million through a competitive application process that required states

to change their educational practices for the opportunity to win (Grisson & Herrington, 2012). States may not have agreed with the stipulations placed upon them as a requirement for winning Race to the Top funding, but passing the opportunity for additional federal dollars was not easy for many states (Vergari, 2012). Once the grant money was exhausted, and the states were no longer financially obligated to the change initiatives attributed to Race to the Top, the concern for continued implementation increased (Vergari, 2012).

Race to the top was not the first federal program that dangled money in front of the states to advance policy. The welfare system in the United States is a contractual system that reimburses the states for money they spend on welfare (Albritton, 1989). States take advantage of untethered federal dollars in entrepreneurial manners that expand the influence of the dollars within the state, but outside of the initial expectations of the federal government's program design (Albritton, 1989). President Clinton, under the Goals 2000 initiative, introduced a bill that provided \$300 million to states to implement school-to-work programs and increase cooperation between secondary and post-secondary education (Fuhrman, 1994). Goals 2000 also was intended to promote standards, but the regulations to enforce the usage of the funds were removed by Congress due to pressure by the states claiming too much federal intervention (Mintrom & Vergari, 1997). This left the states to use the money as they wanted, even if they usage was not part of the intention (Mintrom & Vergari, 1997).

The intergovernmental grant process is identified by four main process steps (Volden, 2007). First, the national government's policymakers must decide if and how to grant the money (Volden, 2007). Second, the conditions attached to the grant must be determined (Volden, 2007). Third, the governmental agency receiving the grant must decide whether to seek or accept the grant (Volden, 2007). Fourth, the receiving agency must set the policies to spend the

funds (Volden, 2007). The conditions set upon the funds can be directly attached to programs or unfunded mandates that the receiver must meet to earn the funds (Volden, 2007). The national government can decide whether to allow the receiving agency, the states, to direct the money on its own or can direct the receiving agency to use the money as directed by attaching strings to the money (Volden, 2007). States become reliant upon the national funding, even with strings attached (Shelly, 2008). This fact makes states less willing to oppose the national government's programs (Shelly, 2008). Once the states accept the national funding, they are constrained by the restrictions applied to the funding, which reduce the states' ability to creatively use the funds (Shelly, 2008).

### **Race to the Top Development**

The Elementary and Secondary Education Act (ESEA) of 1965 used "child benefit theory," funding provided for students instead to institutions, as a way to support its funding stance through the courts (Viteritti, 2012). The original language of ESEA provided funding to poor students whether they attended public or parochial schools (Viteritti, 2012). To avoid the Establishment Clause, separation of Church and State, the Title I funding from ESEA would be provided to all low-income students through the public education systems (Viteritti, 2012). Teachers from public schools would go to parochial schools to provide remedial services to the low-income students until 1985, when the Supreme Court ruled that public education teacher could not provide the remedial services at the parochial schools (Viteritti, 2012). This led to public school systems renting space that was considered "neutral" for the remedial services to be provided (Viteritti, 2012). This ruling was overturned in 1997, which led to the end of the remedial program for low-income students in parochial schools (Viteritti, 2012). By 1984, studies showed that students supported through ESEA saw improvement compared to their peers,

but the improvements were not maintained over time (Editorial Projects in Education Research Center, 2004).

The “Nation at Risk” report not only reported on the decline of public elementary and secondary education, but also documented the rising rates of adult illiteracy and remedial programs being implemented in business, universities, and the military (Viteritti, 2012). Political leaders, though at the time not interested in direct federal intervention in state educational matters, were forced to address the “education crisis” that was formed by the report (Editorial Projects in Education Research Center, 2004). Presidents, since the Nation at Risk report, have implemented federal programs to try and persuade states to increase the rigor of their educational systems and implement standards and assessments that would support the increased rigor. The results of these initiatives, up to and including No Child Left Behind (NCLB), did not show a marked improvement in student achievement, nor a significant closing of the achievement gap between minority African American and Hispanic students compared to their White and Asian counterparts (Ahn & Vigdor, 2013). The coercive nature of NCLB left a strained relationship between the states and federal education agendas (McGuinn, 2016). To try and overcome the shortcomings of prior educational reform efforts, then Secretary of Education Arne Duncan, developed Race to the Top (RTTT) competitive grant process (J. Weiss, 2015).

The U.S. Department of Education manages about 150 competitive grants per year (J. Weiss, 2015). These grants are broken into seven main categories, educational science, elementary and secondary education, innovation and improvement, postsecondary education, special education and rehabilitative services, career and technical education, and English language learners (U.S. Department of Education, 2016). The grants provide funding for education research, student assistance programs, school innovation programs (magnet and



charter schools), teacher improvement programs, minority education improvement programs, technical and special services programs for special needs students, the improvement of career and technical education programs, and assistance programs for students learning English as a secondary language (U.S. Department of Education, 2016). These grant programs provide funding to students and educational institutions through a competitive process, but they have not initiated an overarching change in educational practices like RTTT (J. Weiss, 2015).

Joanne Weiss(2015), one of the architects and leaders of Race to the Top from its inception to its funding end, described the development and design of the program. Race to the Top was a plan to use the funding approved by Congress in the American Recovery and Reinvestment Act (ARRA) to invest in states that had educational improvement ideals and the ability to implement them (J. Weiss, 2015). Most of the ARRA funding for education, \$100 billion, was used to save teacher jobs and fund existing programs using the same need-based calculations through Title I funding (McGuinn, 2016). However, Congress set aside \$4.35 billion for state incentive programs that would become the Race to the Top program (McGuinn, 2016). This secondary funding would be part of the competitive grant process to empower states to implement statewide educational reform that conformed to a common, federal framework (J. Weiss, 2015). Weiss(2015) described eight fundamental design principals of RTTT that may apply to other federal policy initiatives.

The first principal of the RTTT grant was to create a real competition that would have winners and losers (J. Weiss, 2015). The notion of winners and losers in federal grant money was unheard of before the RTTT grant was initiated. States were awarded some amount of money, even though it may not have been equal to all states (Viteritti, 2012). To achieve a true competitive environment, the government had to ensure that each state would receive equal

opportunity to win funding (J. Weiss, 2015). This meant that politics would have to be removed from the process by not allowing state legislators and lobbyists the ability or access to influence the outcome (J. Weiss, 2015). A panel of “education experts” was formed to review and rate the states’ applications using a “blind” system so the raters would not know which states were being evaluated (J. Weiss, 2015). Even though this process was ideal in design and intention, some believe that bias still existed in the process (Bowen, 2010).

The second guiding principal was to provide clear goals for the states to pursue through their applications (J. Weiss, 2015). Prior reform efforts focused on a single-solution process to improve education, but the RTTT grant focused on four different areas: standards and assessments, teachers and leaders, data, and turning around low-performing schools (J. Weiss, 2015). By providing four different areas of focus, implementation would be designed into multiple areas of impact, and poor performance in one area would not derail the entire state reform process (J. Weiss, 2015). Since each state was unique, the goals were flexible to allow states to meet the desired outcome using the state’s own processes which allowed individualized state implementation (J. Weiss, 2015). This flexibility did lead to a bloated design that including many primary categories with several sub-categories underneath (J. Weiss, 2015).

Developers of the RTTT grant proposal wanted the states to achieve educational alignment throughout the state improving academics and supporting disadvantaged and minority students (J. Weiss, 2015). This meant that every level of the state’s educational process would need to be involved to design, support, and implement the state’s plan (J. Weiss, 2015). In many states, the Department of Education did not take a leadership role in education and allowed the local districts to operate independently (J. Weiss, 2015). The RTTT designers felt that all levels of education leadership needed to be involved and required that a binding Memorandum of

Understanding (MOU) be executed throughout the state (U.S. Department of Education, 2009). These MOU's were intended to increase cooperation and discussion between the state and local agencies, which they did, but also led to difficult interactions where the state may have threatened local funding to gain compliance with the final implementation (J. Weiss, 2015).

Stakeholder support for the proposal was another key design element (U.S. Department of Education, 2009). The application required the signatures of the three highest-ranking state education officials, the governor, the chief state school officer, and the head of the state board of education, along with signatures of the local school districts' superintendents, school board president, and head of the local teacher's union (J. Weiss, 2015). The designers felt that the signature of all of these stakeholders would give all of them ownership of the process (U.S. Department of Education, 2009). In some states like Tennessee, Wisconsin, and Ohio, the collective bargaining rights of the unions were removed to make way for the reforms to be implemented (Ghianni, 2011). States with the most buy-in by their stakeholders received additional points on their application (J. Weiss, 2015). Also, states that reached the final group of applicants had to meet with the reviewers to answer questions related to their application to ensure the state leaders understood the commitments being made (J. Weiss, 2015).

States were implementing changes before the U.S. Department of Education awarded any grant money (J. Weiss, 2015). States were changing laws, adopting new standards, and joining national consortiums to meet the grant requirements (E. Weiss, 2013). The RTTT application required states to remove any laws that prohibited the linkage of teacher and principal evaluations with test scores before the state could enter the competition (J. Weiss, 2015). States received points for how much reform had occurred before the RTTT application was reviewed as well as the steps the state would take after the grant award (U.S. Department of Education,

2010). States that did not win initial funding, only Delaware and Tennessee won first-round funding, had an opportunity to revise their applications to try and win second, and ultimately, third-round funding (U.S. Department of Education, 2009).

Transparency was another key guiding principal of the RTTT design (J. Weiss, 2015). Race to the Top received a large amount of scrutiny because of its new design and opportunity for corruption (Bowen, 2010). Therefore, all of the information that was not restricted under the Freedom of Information Act was made available for public review (J. Weiss, 2015). All of the federal documents related to RTTT were placed on the Department of Education website, including applications, guidance materials, rater documents, answers to questions, and videos of face-to-face interviews with state leaders (U.S. Department of Education, 2009). The public nature of the process led to improved applications, collaboration, and information sharing (J. Weiss, 2015). It also allowed for watchdog groups to monitor the process and help keep the process as honest as possible (J. Weiss, 2015).

Support was a key component for the states to complete the application and implementation process (J. Weiss, 2015). Previous state correspondence was more compliance in nature and related to benefits or consequences to actions states would take (McGuinn, 2016). To change this mindset, a support structure had to be created that helped the states develop a program that was best for the state (J. Weiss, 2015). Experts assisted the states in developing roadmaps, a step-by-step application was created, and support was provided by the federal government through webinars and onsite visits to the states (J. Weiss, 2015). A response system of teams was developed to ensure that all questions were answered quickly and were provided in terms the states could understand and implement (J. Weiss, 2015).

Finally, accountability was built into the design to avoid the overpromising and under-delivery that would be within the states' applications, given the competitive nature of the process (J. Weiss, 2015). To maintain accountability, targets had to be ambitious, but attainable, and states had to provide specific evidence to support any claims made in the application (U.S. Department of Education, 2009). State Attorney Generals were required to sign the state application verifying the laws were interpreted correctly (J. Weiss, 2015). Reviewers were not capable of verifying state laws, so this component was critical to the overall accountability of the process (J. Weiss, 2015).

### **Race to the Top Criteria Design**

State success factors, section A, had 125 points available. Standards and assessments, section B, had 70 points available. Great teachers and leaders, Section D, had 138 points available. Section C, data systems section, held 47 possible points within the 500 total points available for the entire application. In comparison to the other sections of Race to the Top, data systems had the least number of points available. Turning around the lowest-achieving schools, Section E, had 50 points available. The final section, section F, which contained the "other" miscellaneous parts of the application, had 55 points available. According to the points scoring rubric, data systems was the least impactful. However, data systems impacted the criterion of the other sections of the application. Within state success factors, subsections 2 (building strong statewide capacity to implement, scale up, and sustain proposed gains) and 3 (demonstrating significant progress in raising achievement and closing gaps) both required the implementation of the data systems. Subsection 2 of great teachers and leaders (improving teacher and principal effectiveness based on performance) contained four other subtopics that were impacted by data systems. Subtopic i (measuring student growth), subtopic ii (developing evaluation systems),

subtopic iii (conducting annual evaluations), and subtopic iv (using evaluations to inform key decisions) all required the outputs of the data systems. Turning around the lowest-achieving schools, subsection 1 (intervening in the lowest-achieving schools) and subsection 2 (turning around the lowest-achieving schools) also required outputs from the data systems (U.S. Department of Education, 2012).

**A. State Success Factors.** The Race to the Top grant was divided into five main sections with sub-sections beneath. The first component, section A, required states to respond to what the grant referred to as “State Success Factors” that demonstrated to the federal government that the state was prepared to make radical improvements in its educational system (U.S. Department of Education, 2009). Section A was valued at 125 points, divided into three educational areas: state reform agendas and Local Educational Agency (LEA) participation, building statewide capacity to implement and sustain plans, and demonstrating significant progress in improving achievement and closing gaps (U.S. Department of Education, 2010). States articulated how prepared they were for the new initiatives and what steps they would take to improve education (J. Weiss, 2015).

The states were required to have the support of the stakeholders including LEA leaders, teacher unions, and other educational support groups to demonstrate the agreement to implement (U.S. Department of Education, 2010). The agreement percentage of state leaders and local districts was a determining factor in how well states met the requirement. States were required to use the National Assessment of Education Progress (NAEP) scoring benchmark, along with whatever state-based assessments were currently implemented, to determine student success and the closing of the achievement gap (U.S. Department of Education, 2010). Using NAEP and local test scores, states were expected to show increases in student achievement in

reading/language arts (ELA) and mathematics, at a minimum, and decrease the achievement gap (U.S. Department of Education, 2009). Increased graduation rates and college enrollment were other criteria (U.S. Department of Education, 2009).

A 2009 Education Next study examined the relationship between students' proficiency scores on the National Assessment of Educational Progress (NAEP) assessment, given to fourth and eighth grade math and reading students and managed by the U.S. Department of Education's National Center for Educational Statistics (NCES) (National Center for Educational Statistics, 2016), and the reported efficiency of the same students based upon the state's internal proficiency standards on each state's own assessments (Peterson & Lastra-Anadon, 2010). The study calculated the difference between the NAEP score and the states' internal assessments' proficiency scores, giving each state a letter grade between an "A" and "F." The average difference between the state and NAEP scores was calculated, and states were graded based upon the number of standard deviations from the average. An "A" rating meant that the states' difference was considerably above the average, the number of standard deviations from the norm/average was low, and an "F" was considerably below average, the number of standard deviations from the norm/average was high. States were graded based upon their calculated difference in 2003, 2005, 2007, and 2009 with a final average score across those four years. Tennessee was graded an "F" in each of the four years and in the final average. Tennessee, based upon the math used in the study, actually saw a decline in the proficiency comparison over the seven years investigated in the analysis (Peterson & Lastra-Anadon, 2010).

States were provided the flexibility to design their success factors to benefit and align to their existing state's educational processes (U.S. Department of Education, 2009). States were encouraged to use existing, successful systems to build their Race to the Top implementation

plans (U.S. Department of Education, 2010). If states implemented key areas of section A before submitting their application, they received “bonus points” during the review process (J. Weiss, 2015). States quickly began changing laws and policies to earn the bonus points being offered to applicants (Viteritti, 2012). It was believed that a state building upon a solid foundation, based upon the RTTT guidance, would be more likely to succeed (U.S. Department of Education, 2010).

**B. Standards and Assessments.** The standards and assessments components of section B, 70 points, were used to determine a state’s commitment to moving towards common standards and assessments that were comparable or in concert with national standards groups or consortiums (U.S. Department of Education, 2010). The type of assessments and standards used by the states was not defined, but whatever option the states chose, it had to be nationally based with a “significant” number of states involved (U.S. Department of Education, 2010). By joining and supporting the consortium, states would work together to develop common assessments that were more rigorous (U.S. Department of Education, 2009). As part of the application document, states described how they used their existing standards and assessments to improve student achievement along with supporting statistics (U.S. Department of Education, 2010).

Since section B, required the states to address how common standards would be implemented, and that they supported the common core initiative, states needed to be members of consortiums that were dedicated to the creation and implementation of more rigorous assessments that included summative and formative processes (U.S. Department of Education, 2009). A plan was required for how the state would make the transition to the more rigorous standards and assessments that would build commitment among stakeholders and get educator buy-in (U.S. Department of Education, 2010). The use of standards mapping between high



school exit and college entrance criteria, the introduction of common formative assessments (CFA), and high-quality professional development were important qualities of the states' application responses (U.S. Department of Education, 2009).

**C. Data Systems.** The data systems model designed for RTTT was developed from an industry and manufacturing process called “Data-driven decision making” (Marsh, Pane, & Hamilton, 2006). Data-driven decision making is an effort to make continuous improvement models that enhance decisions and improve responsiveness by using costs, production rates, employee perceptions, customer needs, and product outputs that business leaders can use to effect change (Marsh et al., 2006). One of the early implementers of data-driven decision making in education was Dr. William Sanders, who was widely credited as the person who made Value-Added models (VAMs) popular in education. In the 1980s, while at the University of Tennessee, Sanders and his colleagues developed the Education Value-Added Assessment System (EVAAS) (Amrein-Beardsley, 2014). Sanders was a statistics professor who concluded that he could help systematically, and “objectively” link student achievement with teachers using a model similar to the ones he developed for agricultural genetics (Amrein-Beardsley, 2014). The EVAAS system was adopted by the State of Tennessee in 1993, and eventually four other states. In Tennessee, the name was changed to the Tennessee Value-Added Assessment System (TVAAS), which became the benchmark for educational data systems. Before Race to the Top, TVAAS, and EVAAS in other states, was not used to track a direct relationship between student achievement and teacher evaluations (TN Department of Education, 2009). State Longitudinal Data Systems' (SLDS) inclusions in state accountability systems were a point of emphasis in No Child Left Behind (NCLB). With Race to the Top, SLDS requirements were expanded requiring student achievement and accountability tied to teacher and administrator evaluations.

The “Data Systems to Support Instruction” portion of the grant, section C, had impact on several other main sections of the grant. States were required to have a statewide longitudinal data system that met the 12 elements of the America Competes Act, and the system had to contain a process for educators to access and interpret the data it contained (U.S. Department of Education, 2009). Transparency was a vital component of the grant’s design (J. Weiss, 2015). The state also had to use the data from the SLDS to make data-driven instructional changes which included a percentage of teacher and administrator evaluations be tied to the SLDS output (U.S. Department of Education, 2010). The information obtained through the SLDS would affect classroom instruction, teacher evaluation, and would be part of the evaluation of the districts and the states’ implementation success.

In the late 1980s, educational accountability became an important topic as state and federal governments began discussions on how to improve student academic performance. Some states began to implement longitudinal data systems to track measures including student attendance, testing performance, and dropout rates to track academic performance (Sanders & Horn, 1998). The data systems were provided correlation between state educational goals and school performance, giving school leadership a comprehensive dataset to help identify opportunities for improvement (Sanders & Horn, 1998). Value-added data systems were expected to provide actionable information to educational professionals on how to create and evaluate improvement plans for teachers and administrators (Sanders & Horn, 1998).

States receiving RTTT funds were required to incorporate data system results into teacher and administrator evaluation models. Tracking educational improvement within the Race to the Top design by student achievement scores became fundamental requirement (U.S. Department of Education, 2009). Student performance on standardized testing, test achievement, and

improvements in students' knowledge or "growth" were to be used to determine if teachers and schools were effectively educating their students (David, 2010). Historically, the data and calculations within longitudinal data systems were not transparent to educators who were being rated (Smith, 2006). States accepting RTTT funds were required to provide access to the data system through dashboards accessible to educators for tracking their students' past and present performance. This information would give educators the ability to differentiate classroom instruction (U.S. Department of Education, 2009).

Six priorities were established in the development of Race to the Top, section C. Priorities 4 and 5 were for the "expansion and adaptation of statewide longitudinal data systems" and "P-20 coordination, vertical and horizontal alignment" which were major components of the data system requirements (U.S. Department of Education, 2009). Priority 4 was designed to incorporate "special education programs, English language learner programs, early childhood programs, at-risk and dropout prevention programs, and school climate and culture programs" into the data structure and calculations (U.S. Department of Education, 2009). Student mobility, human resources (i.e., information on teachers, principals, and other staff), school finance, student health, postsecondary education, and other relevant information was used to generate usable decision-focused data for continuous improvement initiatives (U.S. Department of Education, 2009).

States that had SLDS data available did not make the system's output readily available to education professionals, and the SLDS systems were not well integrated with other data collection systems (Smith, 2006). Because the information was not part of teacher evaluation, statewide access to the data was not considered as important as the proper interpretation of the output. The resulting educational modifications that should have been generated were the focus

of the system's output (Smith, 2006). With RTTT's requirement for teacher evaluations to be linked to the SLDS results, greater visibility was required. Subsection 2 of the data systems portion of the RTTT application required states to improve data access and its usage (U.S. Department of Education, 2009). Subtopic i of subsection 2 included a P-20 (20 data points) expansion that was designed to track additional predictors for improving workforce and college-ready preparation (Data Quality Campaign, 2011). Subtopic ii required 100% teacher access to the data, and subtopic iii required the development of a data dashboard for users across the state to easily access and use the data (U.S. Department of Education, 2009). These enhancements to the SLDS provided more visibility into the accountability system. Educators, whose evaluations were directly affected by the outputs of the SLDS, could use the information to actively improve educational practices (U.S. Department of Education, 2009).

Subsection 3 of the data systems application required states to use the SLDS data to improve instruction (U.S. Department of Education, 2012). To achieve this goal, subsection 3(i) required states to use the data system as part of evaluations. The intention for using SLDS data as part of evaluations, was to provide more accountability of student outcomes to the teachers and administrators who were responsible for student education. This link between educator and student is similar to how businesses use value-added systems to evaluate their workforce (Marsh et al. 2006). For educators to effectively use the data, subsection 3(ii) required training to allow the information to be properly interpreted and implemented. Subsection 3(iii) required data access to researchers to evaluate overall effectiveness and recommend modifications to provide continuous improvement (U.S. Department of Education, 2009).

Researchers have been working to determine the effectiveness of the new SLDS models' ties to student achievement and educator evaluations (David, 2010). One of the concerns was the

correlation between principals' teacher evaluation ratings and the value-added scores. In any statistical model, there is a measurement of error that must be accounted (Yettick, 2014). Teacher evaluations, affected by student achievement numbers, were also influenced by additional factors outside of the classroom that were not accounted in the SLDS models (David, 2010). One factor that can affect teacher evaluations is between-subject teacher performance. A teacher may teach more than one subject (i.e., Algebra I and Geometry) where students in one subject may have performed considerably better than the other. Another factor is student type, high or low achieving, within the classroom population. In this scenario, one teacher may have classes with a high percentage of higher performing students who do not have a large growth opportunity. However, with the growth model calculations in the SLDS, the teacher may be scored lower than a teacher with a high percentage of low performing students who have a large growth opportunity (Yettick, 2014). The discrepancy was caused by the inability of one teacher to show significant test score gains for a set of high-achieving students who may have little to no room to improve their test scores. Most agree that accountability is needed, but perhaps the methodology of using the data to improve instruction within the states needs to be changed (Yettick, 2014).

Race to the Top, through the SLDS systems, assigns a performance and growth score for each student based upon their testing scores. States who agree to receive the RTTT grant must take this data and connect teacher and leader evaluations with their student achievement (U.S. Department of Education, 2009). States also use performance on the National Assessment of Educational Progress (NAEP) program to determine how well a State's students are performing compared to their counterparts across the country (National Center for Educational Statistics, 2015). This information is not part of an SLDS input and is an indicator of how each state

performs in comparison to the other states. It shows how far apart states are in terms of internal educational standards since one state could show gains in achievement within their state but show little to no improvement on the NAEP.

American companies have leveraged technology, data collection, and reporting processes in the workplace as a way to gain efficiencies (Boser, 2013). Since the introduction of technology in the workplace, companies have seen a 2% gain in annual productivity (Boser, 2013). Business spends time and money on training for any new implementation so that the users of any new technology understand the proper usage and expected improvements. Companies realize that training maximizes the return on investment, and that training is a continuous process for existing and new employees. Race to the Top has included an undefined training requirement for the new SLDS systems, therefore the individual states determine their training requirements (U.S. Department of Education, 2009). Since each state is responsible for their students' achievement and data systems vary between states, it is difficult to make a single training model, however, variations in training levels even within the states will affect the data systems' effectiveness (Smith, 2006).

**D. Great Teachers and Leaders.** This section, required states to provide alternative pathways for teacher and administrator licensing (U.S. Department of Education, 2009). Effectiveness of teachers and principals had to be measured by the performance of their students (U.S. Department of Education, 2009). This required the use of the information with the SLDS to measure student growth along with an evaluation process that used the data to make key decisions. States had to provide a plan that would ensure high-poverty or high-minority schools received an equitable number of highly-effective teachers and administrators compared to other schools (U.S. Department of Education, 2010). Teacher preparation programs within higher

education had to link student achievement and growth to their graduating students to determine program effectiveness, and a data-driven professional development and coaching model had to be developed (U.S. Department of Education, 2009).

Section D had a 138 point value assigned to it (U.S. Department of Education, 2009). This was the largest point value section of the application. To provide more effective alternative routes for teachers and principals, states would have to develop alternative routes through providers outside of higher education institutions (E. Weiss, 2013). Existing alternative licensure opportunities were identified, along with a process for identifying shortages in teachers and principals (U.S. Department of Education, 2009). Plans for filling teacher and principal shortages were provided by the states (U.S. Department of Education, 2009). States had to provide a plan to ensure the equitable distribution of highly-effective teachers and administrators to high-need schools and subject areas (U.S. Department of Education, 2009).

Performance-based evaluation systems for teachers and administrators were the largest component of section D, 58 points (U.S. Department of Education, 2009). States had to define and measure a consistent student achievement and growth model using value-added data systems (E. Weiss, 2013) that would allow evaluations of teachers and administrators to be transparent, fair, and constructive (U.S. Department of Education, 2009). A support structure of professional development and coaching had to be designed along with process for removing ineffective teachers and administrators, tenured and untenured, after they have had ample opportunity to improve (U.S. Department of Education, 2009). States were encouraged to offer new compensation models that tied pay increases to performance as a tool to retain high-performing teachers and administrators (U.S. Department of Education, 2009).

Educator preparation programs had to be rated based upon the effectiveness of their graduates (U.S. Department of Education, 2009). Higher education institutions' funding was affected by these ratings (Wright, 2012), and states were required to publish the results for all state-funded institutions (U.S. Department of Education, 2009). Race to the top also required states to develop an alternative licensing model outside of the state institutions (E. Weiss, 2013), which created opportunity for groups like Teach for America to increase their presence in the educational landscape.

**E. Turning Around the Lowest Achieving Schools.** Section E, "Turning Around the Lowest Achieving Schools," 50 points, required the states to identify and intervene in the lowest performing schools. Intervention could include state takeover of a school, a set of schools, or an entire LEA if deemed appropriate (U.S. Department of Education, 2010). This section of the grant proposal made the state more accountable to the performance of the local schools and districts it supports, but it also put the state in the business of managing the education of students, which it previously had not been directly responsible. Many state LEA's protested their state's intervention into local educational matters (E. Weiss, 2013). The process for how states would perform school-level interventions required one of four school intervention models: turnaround model, restart model, school closure, or the transformation model. State laws and regulations would have to support such actions (U.S. Department of Education, 2009).



**F. Other.** The final section of the tier 1 application, section F, 55 points, included how the states would make education funding a priority, ensuring conditions for successful charter and innovative schools, and any other relevant laws or regulations the state had in place in relationship to educational reform. The state had to show that their year-to-year educational budget was higher, that an equitable funding formula was in place, and provide the state's financial data. Laws and regulations regarding charter school approval, management, oversight, and accountability had to be in place along with an equitable funding formula compared to traditional schools (U.S. Department of Education, 2009).

The Race to the Top application set school funding requirements that the states had to meet or exceed prior year's funding (U.S. Department of Education, 2009). Funding for high-need districts within the state, and high-need schools within the LEA's had to be a priority (U.S. Department of Education, 2009). States were required to remove any laws that restricted the operation of charter schools, and rules for their authorization, operation, and governance of the charter schools had to be created (U.S. Department of Education, 2009). Funding for charter schools had to be equitable to state-funded schools, which meant that funding that normally would have been allocated to public schools inside an LEA would have to be equally shared with the charter schools (E. Weiss, 2013). Beyond basic funding, LEA's also had to provide support services and extra-curricular access to charter students that took additional funding and resources from the public schools the LEA's were required to service (E. Weiss, 2013). School funding with the implementation of No Child Left Behind, Race to the Top, Common Core State Standards, and more initiatives over last decade which have additional, sometimes unfunded, costs leave the local districts to either cut services or increase taxes to fund the shortfall (Brown, 2015).

## **Race and Population Change**

According to the National Center for Education Statistics (2016), the racial makeup of public schools will change significantly. Students identified as Non-Hispanic – White decreased from 59% of public education students in 2003 to 50% in 2013, and the percentage is expected to decrease to 46% by 2025 (National Center for Education Statistics, 2016). The percentage of African American students is expected to decrease slightly from 17% in 2003 to 16% in 2013 and 15% in 2025 (National Center for Education Statistics, 2016). The Hispanic population in public education is expected to rise in the same time period. Nineteen percent of public education student in 2003 were Hispanic (National Center for Education Statistics, 2016). That percentage increased to 25% in 2013, and the percentage is expected to increase to 29% in 2025 (National Center for Education Statistics, 2016). Asian/Pacific Islander students will increase slightly from 4% in 2003 to 5% in 2013, and is expected to increase to 6% in 2025 (National Center for Education Statistics, 2016). These patterns indicate that the United States will not have a single race over 50% of the overall population, which means that all races in the United States will be a minority, by percentage (Center for Public Education, 2012).

## Chapter 3

### Methodologies and Data

After analyzing the rater and state application documents and performing the coding process to create a composite dataset, the research was divided into three questions.

1. What are the political, social, economic, educational, and geographic patterns/characteristics of winning states and applying states in the national Race to the Top (RTTT) competition?
2. Do the scores across different sections of the RTTT application differ between winning and applying states?
3. What political, social, economic, educational, and geographic characteristics may have influenced states' final scores on the RTTT grant competition, controlling for potential selection bias between applicants and non-applicants of RTTT?

Question 1 took the information in the dataset to see patterns between the predictor values and grant awards. Question 2 analyzed the dataset for differences in the scoring between winning and losing states across the different sections of the Race to the Top application. Question 3 used the output from a standard and Heckman selection multiple regression models to determine which predictors had significant influence in the scores. By examining these questions, improved insight could be gleaned into any influences in the scoring and award process.

#### Variables

The variables for this study were divided into two primary groups with multiple sub-groups. The variables for the Race to the Top grant were the components and sub-components of the application. The states answered these sections in their applications, and the federal raters scored the states' applications based upon the definitions provide by the U.S. Department of

Education. The Stateminder variables were assembled by Georgetown University researchers using national databases. Stateminder data was retrieved from the U.S. Census Bureau, the National Center for Education Statistics (NCES), and from the National Assessment of Educational Progress (NAEP). A complete list of the variables for this study and their definitions is provided in Appendix A.

### **Race to the Top Variables**

The Race to the Top (RTTT) variables for this study were the six groups, or sections, of the grant application along with the sub-sections that are part of the rater's rubric document. The components of each section or sub-section of the rating document were broken into separate variables to maximize the analysis process. The original grouping of the variables was part of the federal application development process, and the additional criterion variable creation will be performed by the researcher using the federal application support documents. The six primary groups were state success factors, standards and assessments, data systems to support instruction, great teachers and leaders, turning around the lowest-achieving schools, and general selection criteria. Each of these primary groups, or sections, were divided into sub-groups that include guidance definitions for the states to follow while completing the application. The primary and secondary groups within the RTTT application allowed the federal government to develop what was considered a comprehensive education reform package. The states, in turn, had an education reform manual that was intended to bring America's disparate educational systems (each state's educational programs) to a more national structure (U.S. Department of Education, 2009).

Section A, "state success factors," contained three sub-sections that define what the federal government considers a successful state educational system. The first sub-section, articulating state's education reform agenda and LEA's participation in it, is about setting goals

and agendas for implementing reforms (U.S. Department of Education, 2009). States had to articulate a comprehensive, coherent reform agenda (U.S. Department of Education, 2010). They had to secure commitment from their local education associations (LEA's), and translate the LEA participation into a statewide impact (U.S. Department of Education, 2010). To maximize implementation impact, states had to use the national assessment data from NAEP to show increases in student achievement and closure of the achievement gaps, and graduation and college placement rates had to increase (U.S. Department of Education, 2009). The second sub-section, building strong statewide capacity to implement, scale up, and sustain proposed plans, was about the structure of the state's educational reform process. States had to ensure their fiscal capacity and use broad stakeholder support to implement and maintain the reforms (U.S. Department of Education, 2010). The third sub-section, demonstrating significant progress in raising achievement and closing gaps, required states to show they were making progress in each reform area and how they were improving student outcomes (U.S. Department of Education, 2010)

Section B, "standards and assessment," includes three sub-sections defining how states were to improve their educational standards and assessments to be more consistent among the states. The sub-sections included "developing and adopting common standards," "developing and implementing common, high-quality assessments," and "supporting the transition to enhanced standards and high-quality assessments" (U.S. Department of Education, 2010). States were expected to join a consortium that included a "significant number" of partnering states to develop and implement common standards and assessments (U.S. Department of Education, 2010). Once these common assessments were developed, states had to implement these new

standards and support the continued transition to more enhanced and high-quality assessments (U.S. Department of Education, 2010).

Section C, “data systems to support instruction,” includes three sub-sections. The first section, “fully implementing a statewide longitudinal data system,” required states to have a data collection system that met, as a minimum, the twelve data points in the America Competes Act (U.S. Department of Education, 2009). The data system had to be accessible by educators and researchers (U.S. Department of Education, 2009), which was not normal at the time for many state data systems. Finally, the states had to use the data collected to improve instruction, which included the use of student achievement data in educator evaluations (U.S. Department of Education, 2009). This meant the States that did not have a longitudinal data system (LDS) in place at the time of the application had to describe the development and implementation of the system to meet the grant requirements (U.S. Department of Education, 2009).

Section D, “great teachers and leaders,” includes five primary sections. States were required to develop a “high-quality pathway for aspiring teachers and principals” that would give alternative licensing opportunities (U.S. Department of Education, 2009). Teacher and principal effectiveness would be based upon student performance which would require the states to measure student growth, develop rigorous evaluation systems, conduct annual evaluations, and use those evaluations to inform key employment decisions (U.S. Department of Education, 2010). States had to develop and implement a plan for equitable distribution of effective teacher and principals into high-poverty, high-minority schools, hard-to-fill subjects, and specialty areas (U.S. Department of Education, 2010). The effectiveness of educational preparation programs had to be addressed, and proper support structures had to be in place for educators who would be affected by these new requirements (U.S. Department of Education, 2009).

Section E, “turning around the lowest achieving schools,” had two primary subsections. They required states to develop a plan to improve the performance of schools and districts operating at the lowest levels (U.S. Department of Education, 2009). States would have to follow a predefined set of interventions to improve low performing schools through administration change, charter or state takeover, or closure (U.S. Department of Education, 2009). Using the output of the longitudinal data systems or other data collection means, the low-performing schools would have to be identified and placed on an improvement plan. Persistently low-performing schools would require intervention from the state.

Section F, “general,” was a group of requirements that had components of the other sections, but were placed in their own section for emphasis (U.S. Department of Education, 2009). Three sub-sections included requirements for states to make educational funding a priority, meaning that the state had to fund education at an equal or greater amount than in the prior year (U.S. Department of Education, 2009). Charter and other “innovative” schools had to be given opportunity to be successful (U.S. Department of Education, 2010). Finally, the state had to demonstrate “other” reform conditions were addressed (U.S. Department of Education, 2009).

All of the primary sections, sub-sections, and defining criterion of the Race to the Top application were used to develop a comprehensive variable set for analysis. The variables were directly connected with the federal rater documents and state applications. The sectional scoring from the Race to the Top rater documents gave an overall numeric score to the six primary sections as well as scores for the sub-sections that were identified in the application. If a variable required coding, a review of the state’s application language and the raters’ comments would allow a determination whether a state met the requirements of that variable. If the state met that

variable's requirement the state will be given a "1" in the spreadsheet. Otherwise, a "0" will be entered.

### **Stateminder**

The Stateminder data was a collection of information gathered from several sources (see Appendix B). The structure of the dataset used actual numbers from the U.S. Census data, the National Center for Education Statistics (NCES), SAT, and the National Assessment of Educational Progress (NAEP). Some variables did not have numbers, and they were designed as binary entries. The binary data will be entered as a "0" for negative or "1" for positive. The data started with basic information. The opening information included the year the data was collected, a unique identification number created for each state in alphabetical order, each state's postal, two-letter abbreviation code, and the full name of the state.

The next section of the dataset included the political structure of the state. The first variable was a binary identifying if the state had a democratic governor the year the data was collected, 2009 and 2010. The next two variables reflected the percentage of Republican legislators in the upper and lower state houses. Two more sections of the dataset addressed the student SAT data and educational expenditures of the states. The average SAT composite and component scores in reading, math, and writing were collected from the SAT administrators, the College Board. The financial expenditures and economic output of the state, gross state output, represented in millions of dollars were included. Expenditure dollars for education per capita, also represented in millions of dollars, and median household income represented in thousands of dollars were included. The state financial numbers were collected from the National Center for Educational Statistics (NCES).



Most of the remaining variables in the dataset were student and state demographic related. The dataset included the number and percentage of Black and Hispanic public education students, and the log of the Black and Hispanic population numbers. The dataset also included the number and percentage of students on free or reduced lunch, along with secondary calculations, completed the demographic variables. State region codes were included and were important data used in the analysis. The region number where the state resides was the first regional variable. A binary, dummy variable for the four regions was included. If a state was included in one of the region dummy variables, it received a “1.” If a state was not included in one of the region dummy variables, it received a “0.”

### **Method of Analysis**

Descriptive analysis was used to look for trends in the dataset. The data was combined in an Excel spreadsheet based upon variables related to political climate, socio-economic status, student population, race, geographic location, and the six Race to the Top sections (see Appendix A). After assembling the dataset, the variable data from the Race to the Top winners and applicants were entered into a statistical model using multiple regression calculations. The comparison of means tables from the regression output were used to identify any significant differences in means and to analyze the trends in the means between winning and applying state data. Other tables were created manually to analyze other trends in the data. A table to observe the trends in the frequency and percentage of occurrence in the binary variables was created. Another table was created in conjunction with the comparison of means output table for the Race to the Top components. This new, adjoining table reported the comparison of means for the Race to the Top components using the geographic locations of the states.

To perform the analysis of the predictors' influence on the Race to the Top scoring, the predictors were loaded into a statistical software to generate multiple regression outputs. The dataset included states that applied and did not apply. The standard regression removed the non-applying states to determine significant variables that affected the total and percentage scores. Because these non-applying states may have scored well and won funding, their exclusion could have altered the regression analysis. To overcome the exclusion of the states and their potential effect on the regression results, a second analysis was run using the Heckman selection model that accounts for the state exclusions.

For the main research question 3, the main OLS equation of interest takes the form:

$$Y_i = \beta_0 + \beta_1 X_i + \varepsilon_i \quad (1)$$

where  $Y_i$  is the dependent variable (total scores and/or percentage score on RTTT),  $X_i$  is the set of independent variables and  $e$  is a normally distributed error term. In building the main equation (Equation 1), this study considered the influence of pre-determined state characteristics (i.e., political variables) used in prior research that was likely to influence the decision to apply to the RTTT program. Following the literature, this study identified several variables that may influence this outcome: namely, political, socio-economic, educational and geographic.

In estimating the above regression equation, the study was concerned that the factors that affected the decision to apply to the RTTT program were different for winners, losers, and non-applicants. These factors (observed and unobserved characteristics) were likely to influence the states' decision to apply. Sample selection occurs when a researcher is working with a non-random sub-sample from a larger population of interest. In this study, the premise of the sample selection problem was that we would not actually capture all 51 observations, but rather a subset (i.e., winners and losers). Simple OLS theory states that a random sample of a population will allow us

to make unbiased inference about the coefficients of interest. Specifically, the concern that the non-random nature of participation on RTTT may bias the estimated states' final scores on RTTT was evident throughout the entire literature on self-selection bias in observational studies. Education researchers have long recognized that self-selection can have important effects on program participation.

To resolve the extent of the bias that results from non-random participation, this study utilized the Heckman two-step correction for selection (Heckman, 1976, 1979). The precise form of the Heckman two-step method presented in equations below was the selection equation and the substantive equation of interest.

Selection Equation:

$$z^* (\text{unobserved}) = \gamma' \omega + \mu \quad \mu \sim N(0,1)$$

$$z = 1 \text{ if } z^* > 0$$

$$z = 0 \text{ if } z^* \leq 0$$

Regression or Observation Equation:

$$y = \beta' x + e \quad e \sim N(0, \sigma^2)$$

where  $y$  was observed if and only if  $z = 1$ . The variance of  $u$  was normalized to 1 because only  $z$ , not  $z^*$ , was observed. The error terms,  $u$  and  $e$ , were assumed to be bivariate, normally distributed with correlation coefficient,  $\rho$ ,  $\gamma, \beta$  were the parameter vectors. The Heckman selection model involved two equations: (1) the regression equation considering mechanisms determining the outcome variable and (2) the selection equation considering a portion of the sample whose outcome was observed and mechanisms determining the selection process (Heckman, 1976, 1979). The selection equation was estimated by maximum likelihood as an independent probit model to determine the decision to apply or not to apply using information

from the whole sample of RTTT applicants and non-applicants. A vector of inverse Mills ratios (estimated expected error) can be generated from the parameter estimates (Greene, 1995).

Effectively controlling for sample selectivity bias required the selection of at least one variable that uniquely determined the discrete choice of applying to the Race to the Top (RTTT) grant but not the continuous variable of states' final scores on RTTT. In the present study, the selection of such identifying variables was informed by consideration of the factors that were likely to impact the choice to apply or not to apply to the Race to the Top Fund program. In theory, exclusion restrictions are not necessary in Heckman's two-step method because the model is identified by non-linearity (Heckman & Navarro-Lozano, 2004). However, in practice, the identification issue was less clear-cut (Li & Prabhala, 2007). Considering Heckman's two-step method, this study imposed exclusion restriction for model identification. Exclusion restrictions, like instrumental variables, are variables that affect the selection process but not the substantive equation of interest. Models with exclusion restrictions are superior to models without exclusion restrictions because they lend themselves to a more explicitly causal approach to the problem of selection bias.

The Heckman selection equation model included two identifying variables: the amount of federal money provided to the state Department of Education and the number of private foundations. In the dataset, thirteen states did not apply for Race to the Top funding. Because these states excluded themselves from the process, even though they could have won funding, they had to be accounted in the analysis. Variables that predicted a state's likelihood to exclude themselves were required. This study assumed that states that were less dependent upon federal education dollars or had less influence from private educational foundations were less likely to apply for the Race to the Top grant. The U.S. Census Bureau (2010) published a federal aid to

states report. Inside that report, the amount of federal dollars given to the states was reported (U.S. Census Bureau, 2010). That amount was divided by the total state education expenditures reported in the Stateminder dataset to create the percentage federal education dollars represented in the overall state educational expenditures (*pct\_fed\_doe*). The National Center for Charitable Statistics reported the number of charitable organizations working in each state (National Center for Charitable Statistics, 2013). Within that dataset was the number of private foundations working in each state (*pvt\_fnd*). Finally, a continuous control variable was added (*applied09*) for the analysis that identified which states did or did not apply for funding in 2009.

As noted above, two explanatory variables in the Heckman selection equation were used to predict why states did not apply in the 2010 application process. The importance of these variables was justified in the literature. The first variable, private foundations (*prv\_fnd*), related to the number of private foundations operating in the state at the time of Race to the Top applications. Private foundations have become more active in city and state educational systems (Strauss, 2011). Educational systems, desperate for improvement, were willing to make changes in their educational programs to receive money from the private foundations. Additionally, private foundations were willing to assist states with their applications (Strauss, 2011). States that were willing to meet the requirements of private foundation grants were expected to be more willing to apply for Race to the Top. Therefore, private foundations were used in the selection model to determine whether a particular state would apply for Race to the Top funding.

The second variable, percentage of Federal Department of Education (*pct\_fed\_doe*), related to the percentage of federal dollars from the U.S. Department of Education in state education revenue. All states receive some level of federal education funding, but the state's dependence on federal funding could be a significant variable in determining state participation.

States use the federal education funding to extend programs to students, and the ability to provide additional programs is restricted by excess funding in the state's budget (Albritton, 1989). With under-funded state budgets at the time of Race to the Top, states were more reliant on federal dollars to bolster state budgets (Wilson, 2013). It is logical to expect that states with high percentage of federal dollars in their education revenue would be more apt to apply for Race to the Top funding.

When self-selection is present, the Heckman two-step method presented is the appropriate model to use as opposed to the OLS. When self-selection is not present, the Heckman two-step method converges to the OLS estimates (Eq. 1).

## **Chapter 4**

### **Analysis**

#### **Discussion**

The purpose of this study was to examine the Race to the Top grant applications to determine if political, economic, educational, or geographic patterns affected the winning or losing of the grant award. A dataset that included political, economic, educational, and geographic information was combined with the scores from the rating documents used by the United States Department of Education to scores the state's applications. The new dataset was used to perform a descriptive and inferential statistical analysis. The research was guided by the following three questions:

1. What are the political, social, economic, educational, and geographic patterns/characteristics of winning states and applying states in the national Race to the Top (RTTT) competition?
2. Do the scores across different sections of the RTTT application differ between winning and applying states?
3. What political, social, economic, educational, and geographic characteristics may have influenced states' final scores on the RTTT grant competition, controlling for potential selection bias between applicants and non-applicants of RTTT?

#### **Descriptive Statistics**

Three different mean comparisons were performed to answer research questions one and two. Using the political, social, economic, and geographical variables, the mean and mean difference for each variable as they related to data for Race to the Top winners and total applicants was calculated. The mean and mean difference in the Race to the Top components for

the winners and total applicants was calculated. Finally, the mean and mean difference in the Race to the Top scored sections based upon geographical characteristics were calculated. Using the tables created from the calculations, differences in scores were observed.

### **Research Question 1**

The comparison of means for the analysis variables in the context of Race to the Top winners and total applicants is shown in Table 1. The relationships described in Table 1 and 2 addressed the first research question: What are the political, social, economic, educational, and geographic patterns/characteristics of winning states and applying states in the national Race to the Top (RTTT) competition?

**Significant Predictors.** At the  $\alpha = .05$  level, the means for pct\_repL, pct\_black, and sat were significant. The mean for winners for pct\_repL was 0.369,  $p = .039$ , and 0.469,  $p = .039$  for Applicants. The mean for pct\_black for the states that won Race to the Top was 0.257,  $p = .004$ , and the mean for all states that applied was 0.117,  $p = .004$ . The mean percentage of African American students was significantly higher in states that won Race to the Top compared to the mean percentage of African American students for all of the applicants. The mean for SAT scores in states that won Race to the Top grants was 1495.750,  $p = .002$ , and the mean for SAT scores in all applying states was 1615.949,  $p = .002$ . The states that won the grants had a significantly lower average SAT score compared to all of the states that applied.

The variables dem\_gov, Midwest, South, and West were significant at  $\alpha = .10$ . The state Governors' political affiliation was represented by a "0" for Republican and a "1" for Democrat. After the mean calculation, a value closer to "1" represented a higher Democratic population, and a value closer to "0" represented a higher Republican population. The mean for grant winners was .513, and the mean for the overall grant applicant group was .667 with a mean



difference of -0.154. The mean for Midwest states that were grant winners was .083, and the mean for the application group was .333 with a mean difference of .250. The mean for Southern states that were grant winners was .333, and the mean for the application group was .231 with a mean difference of -0.103. The mean for Western states that were grant winners was .083, and the mean for the application group was .282 with a mean difference of .199.

Table 1 <i>Comparison of Means</i> This table presents the comparison of means for the variables that are used in the analyses. Variables are described in Appendix A.				
Variables	Mean for RTT Grant Winners	Mean for RTT Grant Applicants	Difference	p-value
dem_gov*	0.513	0.667	-0.154	0.359
dem_gov_cont	0.694	0.575	-0.120	0.331
pct_repU	0.400	0.487	0.087	0.119
pct_repL	0.369	0.469	0.100	0.039
log_exp_percap	2.630	2.479	-0.151	0.077
log_medinc	10.863	10.833	-0.030	0.543
students	1,134,363	912,055	-222,307	0.561
pct_black	0.257	0.117	-0.140	0.004
pct_hisp	0.136	0.148	0.012	0.796
pct_lunch	0.492	0.455	-0.037	0.277
sat	1495.750	1615.949	120.199	0.002
Midwest*	0.083	0.333	0.250	0.093
South*	0.333	0.231	-0.103	0.486
West*	0.083	0.282	0.199	0.162
N = 51				
***Sig. at the 0.01 level; **Sig. at the 0.05 level; *Sig at the 0.10 level.				

**Frequency and Percentage of Significant Predictors.** Table 2 provided a summary of the frequency of occurrence in the variables used in the analysis. The average occurrence of a Democratic Governor in the states that won Race to the Top grants was .632 compared to .605 for all of the states that applied. States that were grant winners had a higher occurrence of Democratic Governor compared to the overall applicants. The mean of winning states in the

Northwest was .421 compared to .211 for total applicants. Midwest winning states had a mean of .158 compared to a mean of .179 for all applicants. The mean for Southern states was .316 compared to a mean of .282 for all applicants. Western states had a mean of .105 for winners, compared to .231 for non-winning states. Northwestern and Southern states had a higher frequency within the winning states compared to the overall applicants. Midwestern and Western states were underrepresented in the winning states compared to the overall applicant group.

Table 2 <i>Comparison of Occurrence</i> This table presents the number occurrence (F) and percent occurrence (%) for the variables that are used in the analyses. Variables are described in Appendix A.				
Variables	F for RTT Grant Winners	% for RTT Grant Winners	F for RTT Grant Applicants	% for RTT Grant Applicants
dem_gov	12	0.632	23	0.605
dem_gov_cont	N/A	N/A	N/A	N/A
pct_repU	N/A	N/A	N/A	N/A
pct_repL	N/A	N/A	N/A	N/A
log_exp_percap	N/A	N/A	N/A	N/A
log_medinc	N/A	N/A	N/A	N/A
students	N/A	N/A	N/A	N/A
pct_black	N/A	N/A	N/A	N/A
pct_hisp	N/A	N/A	N/A	N/A
pct_lunch	N/A	N/A	N/A	N/A
sat	N/A	N/A	N/A	N/A
Northeast	8	0.421	11	0.289
Midwest	3	0.158	7	0.184
South	6	0.316	11	0.289
West	2	0.105	9	0.237
N = 38				

**Significant Political Predictors.** Nineteen of the 37 states, and District of Columbia, that applied for Race to the Top received Race to the Top funding in one of the three phases. Twelve of the nineteen winning states, 63%, had a Democratic Governor when they received the grant award. Of the 12 states with a Democratic Governor, 11 of them had democratic control

over the legislative process. Fourteen of the nineteen states, 68%, had a Democratic majority controlling the legislative process by having at least two of the three legislative areas; Democratic Governor, Senate majority, or House of Representative majority. Three states, Hawaii, New Jersey, and Rhode Island, had a Republican Governor during the award process, but their State House and Senate were Democratic controlled. Twenty-seven of the 38 applying states, 71%, were Democrat controlled, with a Democratic Governor in 25 of the 38 applying states, 66%.

**Significant Racial Predictors.** The percentage of African American (pct\_black in the dataset) students in the winning states was significant  $M = .257$ ,  $p = .004$ , or a 25.7% average compared to 11.7% for the total applicants. Delaware and Tennessee had 33% and 24%, respectively, African American students. District of Columbia had 79% African American students, and Maryland and Georgia were at 38% and 37%, respectively. North Carolina was 31%, and Florida was at 23% African American students. Six other states, New York had 19%, and Ohio had 16%, Louisiana had 46%, Illinois had 19%, and New Jersey had 17%. Pennsylvania, 15%, was near the average percentage.

**Significant Academic Predictors.** SAT score for the winning states,  $M = 1495.750$ ,  $p = .002$ , and the overall applicants,  $M = 1615.949$ ,  $p = .002$  was significant. Only 5 of the 19 states that won the Race to the Top award had a score higher than the 1616 all-applicant average. Tennessee had an average SAT of 1712. Louisiana ( $M = 1652$ ), Colorado ( $M = 1695$ ), Kentucky ( $M = 1713$ ), and Illinois ( $M = 1762$ ) had an SAT score over the average for all applicants. In comparison, 11 of the 19 non-winning states had an overall SAT score above the 1616 average. Twelve of the 19 states that won grant awards, 63%, scored below the 1616 average, compared to 19 of 38 applying states, 50%.

**Significant Geographic Predictors.** Geographic location was identified in the dataset by values ranging from 0 to 3 using the National Geographic Regional Map, but combining Southwest and West due to the small number of states in the Southwest (National Geographic, 2012). Zero representing the Northeastern states, 1 representing the Midwestern states, 2 representing the Southeastern states, 3 representing the combined Southwestern and Western states. Thirteen States (Alaska, Idaho, Indiana, Kansas, Minnesota, North Dakota, Oregon, South Dakota, Texas, Vermont, Washington, West Virginia, and Wyoming) did not apply for phase 2 of the Race to the Top (RTTT) funding. The states that did apply and received funding (see Appendix B) had a significant regional breakdown. Of the Northeastern states that applied for RTTT, 8 of the 11 states received funding (see Appendix B, Table B1), which is a 73% success rate in the region, a 42% success rate among the winning states, and an 21% success rate among all of the applicants. In the Midwest, only 2 of the 7 states that applied for RTTT received funding which is a 29% regional success rate and 11% overall success rate among winning states, and an 5% success rate among all applicants (see Appendix B, Table B2). Eleven states in the Southeast applied for RTTT funding, and only 55%, 6 of the 11 southeastern states (see Appendix B, Table B3), received funding. The Southeastern states that won funding was 32% of the award-winning states, and 16% of the applying states. The Western states had the lowest representation among the winning states. Three of the 10 applying states received funding reflecting a 20% regional success rate, 16% success rate among winning states, and 8% success rate among all applicants (see Appendix B, Table B4).

## **Research Question 2**

Tables 3 and 4 show the comparison of means for the Race to the Top scoring variables, and Tables 5 and 6 show the comparison of means of the Race to the Top scoring variables based

on geographic location. The relationships described in Tables 3, 4, 5, and 6 will address the second research question: Do the scores across different sections of the RTTT application differ between winning and applying states?

**Components A and B.** The comparison of means of the Race to the Top scored variables, at the  $\alpha = .05$  significance level, revealed several significant variables from Table 3. Component B, standards and assessments, was significant for the total category score, but only sub-component B3, supporting the transition to enhanced standards and high-quality assessments, was significant. Sub-components B1, developing and adopting common standards, and B2, developing and implementing high-quality assessments, were not significant. All of the Component A, state success factors, variables were significant. The mean of the total Component A scores for grant winners was 111.350,  $p < .001$ , and the mean for all applicants was 91.438,  $p < .001$ . The mean for sub-component A1, articulating state's education reform agenda and LEA's participation in it, for grant winners was 58.683,  $p = .001$ , and 48.523,  $p = .001$ , for all applicants. Sub-component A2, building strong statewide capacity to implement, scale up, and sustain proposed plans, had a mean of 27.483,  $p = .001$ , for grant winners, and 23.123,  $p = .001$  for all applicants. Sub-component A3, demonstrating significant progress in raising achievement and closing gaps, had a mean of 25.183,  $p < .001$ , for grant winners and 19.792,  $p < .001$  for all applicants. The mean for the overall Component B score was 69.050,  $p = .009$ , for grant winners compared to 62.885  $p = .009$  for all applicants. Sub-component B3 had a mean of 19.167,  $p = .002$ , for grant winners compared to a mean of 16.138,  $p = .002$ , for all applicants. All of the means for the winners were significantly higher than the means of all applicants.

**Components C and D.** All components and sub-components of C and D were significant. The Component C, data systems to support instruction, total score had a mean of 42.467,  $p = .003$ , for grant winners compared to a mean of 35.815,  $p = .003$  for all applicants. The mean for winning states in sub-component C1, fully implemented statewide longitudinal data system, was 21.967,  $p = .043$ , and the mean for all of the applying states was 18.769,  $p = .043$ . Sub-component C2, accessing and using state data, for winning states had a mean of 4.800,  $p = .001$ , compared to a mean of 3.946,  $p = .001$ , for all applicants. The mean for winning states in sub-component C3, using data systems to improve instruction, was 15.700,  $p = .007$ , and 13.100,  $p = .007$ , for all applying states. The means for Component D, great teachers and leaders, was 120.383,  $p < .001$  for the winning states and 88.338,  $p < .001$  for all applicants. The mean of the winning states in sub-component D1, providing high-quality pathways for aspiring teachers and principals, was 17.650,  $p = .004$ , compared to 13.169,  $p = .004$ , for all applicants. Sub-component D2, improving teacher and principal effectiveness based on performance, had a mean of 52.533,  $p < .001$ , for winning states, and a mean of 38.123,  $p < .001$  for all of the applying states. Winning states in sub-component D3, ensuring equitable distribution of effective teachers and principals, had a mean of 20.850,  $p < .001$ , and all applicants had a mean of 15.054,  $p < .001$ . The means of the section C and D Race to the Top components were higher for all of the winning states compared to all applicants.

Table 3

*Comparison of Means*

This table presents the comparison of means for the Race to the Top variables that are used in the analyses. Variables are described in Appendix A.

Variables	Mean for RTT Grant	Mean for RTT	Difference	<i>p</i> -value
	Winners	Grant Applicants		
Component A	111.350 [4.822]	91.438 [15.254]	-19.912	0.000
A1	58.683 [4.468]	48.523 [9.230]	-10.160	0.001
A2	27.483 [1.443]	23.123 [3.860]	-4.360	0.001
A3	25.183 [2.693]	19.792 [3.97]	-5.391	0.000
Component B	69.050 [.763]	62.885 [7.682]	-6.165	0.009
B1	39.950 [.124]	37.000 [6.026]	-2.950	0.101
B2	9.933 [.130]	9.746 [.785]	-0.187	0.420
B3	19.167 [.781]	16.138 [3.062]	-3.028	0.002
Component C	42.467 [3.607]	35.815 [6.745]	-6.651	0.003
C1	21.967 [3.193]	18.769 [4.786]	-3.197	0.043
C2	4.800 [.295]	3.946 [.799]	-0.854	0.001
C3	15.700 [1.567]	13.100 [2.939]	-2.600	0.007
Component D	120.383 [4.508]	88.338 [23.128]	-32.045	0.000
D1	17.650 [2.240]	13.169 [4.848]	-4.481	0.004
D2	52.533 [2.175]	38.123 [11.362]	-14.410	0.000
D3	20.850 [1.874]	15.054 [5.000]	-5.796	0.000

\*\*\*Sig. at the 0.01 level; \*\*Sig. at the 0.05 level; \*Sig at the 0.10 level.

**Components E, F, and STEM.** Component E, F, and the STEM component were significant for the overall category score, but one sub-component of E and F was not significant. Sub-components E1, intervening in the lowest-achieving schools and LEA's, F1, making education funding a priority, and F3, other significant reform conditions, were not significant. The mean for Race to the Top winners in Component E, turning around the lowest-achieving schools, was 46.917,  $p = .01$ , and 40.469,  $p = .01$  for all applicants. For sub-component E2, turning around the lowest-achieving schools, the mean for award winners was 36.917,  $p = .02$ , and 31.738,  $p = .02$  for all applicants. The mean for grant winners in sub-component F2, ensuring successful conditions for high-performing charters and other innovative schools, was 33.600,  $p = .02$ , and the mean for all applicants was 24.315,  $p = .02$ . The mean in the STEM component for winners was 15.000,  $p = .02$ , and 9.808,  $p = .02$  for all applicants. In section E and F, turning around lowest-achieving schools and allowing charter schools were the significant components of those sections. Maintaining funding and intervention in lowest-achieving schools and LEA's were not significant in the award decision process.



Table 4 <i>Comparison of Means (Continued)</i> This table presents the comparison of means for the Race to the Top variables that are used in the analyses. Variables are described in Appendix A.				
Variables	Mean for RTT Grant	Mean for RTT	Difference	p-value
	Winners	Grant Applicants		
Component E	46.917 [1.779]	40.469 [7.911]	-6.447	0.009
E1	10.000 [.000]	8.731 [2.570]	-1.269	0.098
E2	36.917 [1.780]	31.738 [6.986]	-5.178	0.017
Component F	47.283 [4.333]	36.362 [13.478]	-10.922	0.010
F1	9.250 [.796]	8.200 [1.978]	-1.050	0.086
F2	33.600 [3.973]	24.315 [12.823]	-9.285	0.020
F3	4.433 [.458]	3.846 [1.111]	-0.587	0.088
STEM	15.000 [.000]	9.808 [7.277]	-5.192	0.019

\*\*\*Sig. at the 0.01 level; \*\*Sig. at the 0.05 level; \*Sig at the 0.10 level.

**Geographic Location.** Tables 5 and 6 show the comparison of means for the Race to the Top components based upon geographic location. The means of the grant components were broken into the four regions by regional winners, regional applicants, and total applicants. The mean of regional winners was compared to the mean of regional applicants and all applicants. For the comparison of means based on region, the means for the significant Race to the Top component variables from tables 3 and 4 were reported. For the comparison of means for the significant variables, the differences in means between winners and applicants were distinct and followed the patterns of the scoring components from tables 3 and 4.

Table 5 <i>Comparison of Means</i>					
This table presents the comparison of means for the Race to the Top variables that are used in the analyses by geographic location. Variables are described in Appendix A.					
Variables	Mean for RTT	Mean for RTT	Mean for RTT	Mean for RTT	Mean for RTT
	Grant Winners NorthEast	Grant Applicants NorthEast	Grant Winners MidWest	Grant Applicants MidWest	Grant Applicants (ALL)
Component A	109.525	102.418	103.733	98.000	97.726
A1	55.975	52.436	54.533	50.971	51.732
A2	27.550	25.836	26.067	25.457	24.500
A3	26.000	24.145	23.133	21.571	21.495
Component B	69.350	68.145	66.133	65.343	64.832
B1	39.975	39.818	39.867	39.114	37.932
B2	9.925	9.927	9.800	9.343	9.805
B3	19.450	18.400	16.467	16.886	17.095
Component C	42.100	39.255	40.400	36.086	37.916
C1	21.000	19.636	20.133	17.886	19.779
C2	4.750	4.473	4.800	4.429	4.216
C3	16.350	15.145	15.467	13.771	13.921
Component D	119.625	106.182	111.800	94.600	98.458
D1	17.750	16.145	16.733	13.657	14.584
D2	51.750	45.018	48.267	41.771	42.674
D3	21.175	18.909	18.333	16.629	16.884
D4	11.775	10.309	11.400	8.400	9.668
D5	17.175	15.800	17.067	14.143	14.647
Component E	46.650	45.418	44.800	42.429	42.505
E1	10.000	10.000	10.000	8.000	9.132
E2	36.650	35.418	34.800	34.429	33.374
Component F	47.375	44.000	47.333	40.857	39.811
F1	8.475	8.509	9.667	9.229	8.532
F2	34.575	31.309	33.133	27.314	27.247
F3	4.325	4.182	4.533	4.314	4.032
STEM	15.000	12.273	15.000	10.714	11.447
Total	449.625	417.691	429.200	388.029	392.695

Table 6 <i>Comparison of Means</i>					
This table presents the comparison of means for the Race to the Top variables that are used in the analyses by geographic location. Variables are described in Appendix A.					
Variables	Mean for RTT	Mean for RTT	Mean for RTT	Mean for RTT	Mean for RTT
	Grant Winners SouthEast	Grant Applicants SouthEast	Grant Winners West	Grant Applicants West	Grant Applicants (ALL)
Component A	109.067	95.382	110.500	94.644	97.726
A1	59.333	52.382	59.900	50.667	51.732
A2	26.400	23.291	27.800	23.600	24.500
A3	23.333	19.709	22.800	20.378	21.495
Component B	67.900	63.418	68.100	62.111	64.832
B1	39.933	37.164	39.800	35.644	37.932
B2	9.933	9.891	10.000	9.911	9.805
B3	18.033	16.364	18.300	16.556	17.095
Component C	42.500	40.473	39.900	34.578	37.916
C1	23.333	22.218	20.000	18.444	19.779
C2	4.500	4.109	4.600	3.867	4.216
C3	14.667	14.145	15.300	12.267	13.921
Component D	114.867	98.218	118.400	92.311	98.458
D1	17.233	13.945	14.400	14.178	14.584
D2	50.433	43.873	53.200	39.044	42.674
D3	18.600	15.709	21.800	16.044	16.884
D4	11.800	10.291	11.200	9.111	9.668
D5	16.800	14.400	17.800	13.933	14.647
Component E	46.633	42.055	47.800	39.556	42.505
E1	9.167	9.545	10.000	8.444	9.132
E2	37.467	32.509	37.800	31.111	33.374
Component F	42.533	35.273	49.200	39.422	39.811
F1	9.000	8.127	9.600	8.511	8.532
F2	29.267	23.564	35.000	26.733	27.247
F3	4.267	3.582	4.600	4.178	4.032
STEM	15.000	10.909	15.000	11.667	11.447
Total	438.500	385.727	448.900	374.289	392.695

### **Research Question 3**

An OLS regression was conducted to examine the overall impact of political, demographic, geographic, educational and socioeconomic variables on RTTT scores. Tables 7 and 8 showed the regression outputs for the political, economic, racial, academic, and geographical variables against the Race to the Top total score. Only two variables were significant in relationship to the total scores in Race to the Top. The Democratic Governor variable (`dem_gov`) was a binary value that represented whether the sitting Governor was a Democrat. The linear regression model produced a statistically significant point estimates of about 88.379 points for the RTTT total score effect at  $\alpha = .05$ . The Democratic Government Control variable (`dem_gov_cont`) was a percentage of control that the Democrats had over the Governor and the upper and lower state houses. This variable produced significant effect estimates of 209.520 points in the negative direction at  $\alpha = .01$ .

Table 7 <i>OLS Regression Model</i>	
This table presents the regression calculations for RTTT Total Score. Variables are described in Appendix A.	
Dependent variable = RTTT Total Score	
Variables	Coefficients
dem_gov	88.379 [0.015]**
dem_gov_cont	-209.520 [0.002]***
pct_repU	-229.994 [0.111]
pct_repl	-86.245 [0.575]
log_medinc	165.530 [0.205]
students	0.000 [0.311]
pct_black	91.292 [0.493]
pct_hisp	179.843 [0.110]
pct_lunch	52.899 [0.803]
sat	-0.160 [0.200]
Midwest	72.328 [0.152]
South	44.808 [0.446]
West	-19.177 [0.677]
_cons	-1.2e+03 [0.427]
N	38
R-sq	0.585
adj. R-sq	0.321
***Sig. at the 0.01 level; **Sig. at the 0.05 level; *Sig at the 0.10 level.	

**Democratic Governor.** Based on the regression results in Table 8, the Democratic-related political coefficients on RTTT percent score generally followed the same statistical significance. The Democratic Governor variable (*dem\_gov*) produced a statistically significant point estimates of about .184 for the RTTT percent score. On the other hand, the Democratic Government control variable (*dem\_gov\_cont*) produced significant effect estimates of .326 points but in the negative direction at  $\alpha = .01$ .

It should be noted, however, that the results in Tables 7 and 8 are the uncorrected OLS regressions on the states that won and lost the Race to the Top money (a total of 38 states in the second round). The resulting beta-coefficients from OLS failed to account for the potential threat of selection bias against those states that did not apply to the competition. Employing OLS in the presence of potential selection bias can result in biased and inconsistent, or inefficient parameter estimates. By correcting for the potential threat of selection bias, the final regression estimates (see Tables 9 and 10) aimed to obtain the best linear unbiased predictors of RTTT total/percent scores.

Table 8	
<i>OLS Regression Model</i>	
This table presents the regression calculations for RTTT Percent Score. Variables are described in Appendix A.	
Dependent variable = Total RTTT Percent score	
Variables	Coefficients
dem_gov	0.184 [ 0.020]**
dem_gov_cont	-0.326 [0.014]**
pct_repU	-0.38 [0.230]
pct_repL	-.223 [0.487]
log_medinc	0.274 [0.331]
students	2.99E-08 [0.188]
pct_black	0.29 [0.289]
pct_hisp	0.327 [0.178]
pct_lunch	-0.003 [0.999]
sat	-.003 [0.148]
Midwest	0.086 [ 0.384]
South	0.055 [0.596]
West	-0.045 [0.609]
_cons	-1.36 [0.672]
N	38
R-sq	0.487
adj. R-sq	0.21
***Sig. at the 0.01 level; **Sig. at the 0.05 level; *Sig at the 0.10 level.	

Table 9			
<i>Heckman Selection model (Two-step estimates)</i>			
This table presents the regression results with sample selection Dependent variable: Total RTTT score			
PANEL A. First stage		PANEL B. Selection equation	
	Total RTTT Score (I)		Total RTTT Score (I)
dem_gov	101.250 [0.001]***	pvt_fnd	0.002 [0.057]*
dem_gov_cont	-177.119 [0.001]***	pct_fed_doe	22.402 [0.077]*
pct_repU	-176.826 [0.143]	applied09	-.253 [0.756]
pct_repL	-198.596 0.221]	dem_gov	1.522 [0.171]
log_medinc	93.572 [0.434]	dem_gov_cont	-2.45 [0.275]
students	0.000 [0.097]*	pct_repU	1.71 [0.644]
pct_black	219.055 [0.107]*	pct_repL	-10.053 [0.073]*
pct_hisp	222.530 [0.054]*	students	-3.28e-06 [0.051]*
pct_lunch	-70.266 [0.722]	pct_black	0.129 [0.063]*
sat	-0.221 [0.043]**	pct_hisp	0.129 [0.095]*
Midwest	59.339 [0.168]	pct_lunch	7.512 [ 0.496]
South	34.447 [0.411]	sat	0.001 [0.723]
West	-16.566 [0.634]	Constant	0.983 [0.874]
_cons	-136.0272 [0.922]	$\lambda$	33.778
		$\rho$	0.677
		$\sigma$	49.916
		Number of observations	51
		Censored observations	38
		Uncensored observations	13
		Wald $\chi^2$ (df)	31.01*** (13)

\*\*\* Significant at the 0.01 level, \*\* Significant at the 0.05 level, \* Significant at the 0.10 level.

**Heckman Selection Model.** To apply the Heckman sample selection to the RTTT model, the analysis was split into two parts: an outcome equation, which described the relationship between RTTT scores and a set of explanatory variables, and a selection equation, which described the relationship between the probability of applying for RTTT grant and a set of



explanatory variables. Unlike Tables 7 and 8, the results from the selection equation in Tables 9 and 10 were estimated by maximum likelihood as an independent prohibit model to determine factors influencing the decision whether to participate or not in RTTT grant among from the entire 51 states (including the District of Columbia). The inclusion of two additional variables (pvt\_fnd and pct\_fed\_doe) is assumed to affect the probability of applying to RTTT, but is assumed not to influence RTTT total/percent scores. These are known as instrumental variables or exclusion restriction in the econometric literature.

**Significant Predictors.** Of the political variables, the Democratic governor and the Democratic Government control variables were again most strongly related to the total RTTT scores and percent scores. Geography and socio-economic indicators did not influence the final scores on RTTT. The remaining significant explanatory variables were demographic- and education-related.

The total number of public school students, the percentage of African American, and the percentage of Hispanic students were positive and statistically significant at  $\alpha = .01$ . The education variable, SAT scores, was also a significant predictor at  $\alpha = .05$  but in the negative direction.

**Significant Selection Variables.** The two instrumental variables in the selection equation were significant. An increase in the number of private foundations (pvt\_fnd variable) raised the probability of states applying to the Race to the Top program by .2 percentage points, a small but significant marginal effect. In addition, a one-unit increase in federal funding as a percentage of state education revenue increased the probability of applying to the RTTT grant by 22.402 points. The Heckman model in Tables 9 and 10 revealed that the coefficients were much larger but similarly-significant as the estimates in the OLS model. These results coincided with

results obtained with the Inverse Mills ratio ( $\lambda$ ). In particular, the non-significance of the coefficient of the Inverse Mills ratio revealed that any selection bias in the data was not statistically significant. Because there is no such evidence of selection bias found, the standard OLS regression would suffice.

TABLE 10			
<i>Heckman Selection model (Two-step estimates)</i>			
This table presents the regression results with sample selection Dependent variable: Total RTTT percent score			
PANEL A. First stage		PANEL B. Selection equation	
	Total RTTT Percent Score (I)		Total RTTT Percent Score (I)
dem_gov	0.202 [0.001]***	pvt_fnd	0.002 [0.057]*
dem_gov_cont	-0.354 [0.001]***	pct_fed_doe	22.402 [0.077]*
pct_repU	-0.354 [0.143]	applied09	-0.253 [0.756]
pct_repL	-0.397 0.221]	dem_gov	1.522 [0.171]
log_medinc	0.187 [0.434]	dem_gov_cont	-2.45 [0.275]
students	0.000 [0.097]*	pct_repU	1.71 [0.644]
pct_black	219.055 [0.107]	pct_repL	-10.053 [0.073]*
pct_hisp	222.530 [0.054]*	students	-3.28e-06 [0.051]*
pct_lunch	-70.266 [0.722]	pct_black	0.129 [0.063]*
sat	-0.221 [0.043]**	pct_hisp	0.129 [0.095]*
Midwest	59.339 [0.168]	pct_lunch	7.512 [ 0.496]
South	34.447 [0.411]	sat	0.001 [0.723]
West	-16.566 [0.634]	Constant	0.983 [0.874]
_cons	-0.272 [0.922]	$\lambda$	33.778
		$\rho$	0.677
		$\sigma$	0.0998
		Number of observations	51
		Censored observations	38
		Uncensored observations	13
		Wald $\chi^2$ (df)	31.01*** (13)
		Wald $\chi^2$ (df)	31.01*** (13)

\*\*\* Significant at the 0.01 level, \*\* Significant at the 0.05 level, \* Significant at the 0.10 level.

## Summary of Findings

The descriptive statistics confirm that there was evidence of external influence on the Race to the Top scoring and award process. First, the comparison of means results (Tables 1 to 6) reveal that at the  $\alpha = .05$  level, a statistically significant relationship between the mean scores of winning states compared to applicants for race (pct\_black) and states' SAT scores was significant. Also, at  $\alpha = .10$ , Democratic Governor (dem\_gov) and geographic region (Midwest, South, and West) were significant to the differences in the mean scores between Race to the Top winners compared to all applicants. Second, the OLS regression results (Tables 7 and 8) showed a significant relationship between the Democratic control of the State Governor and legislative decision process and Race to the Top total scores and percentage of scores. However, none of the geographic and socioeconomic variables showed up as statistically significant. Third, using the Heckman two-step selection model, the study found no significant evidence of self-selection between applicants and non-applicants of the RTTT grant. The direction and significance of the coefficients remained virtually unchanged, and the Inverse Mills Ratio was not significant, suggesting that the RTTT grant program was unlikely to be driven by selection bias. Finally, two instrumental variables (pvt\_fnd and pct\_fed\_doe) in the selection equation were found significant.

## Chapter 5

### Summary and Conclusions

The Race to the Top competitive grant was an opportunity for the United States government to influence the states' educational processes. States responded to a grant proposal document provided by the United States Department of Education in an attempt to win additional funding outside of the regular Title I distribution process. To win the grant, states had to be willing to change different aspects of their educational system to match the expectations of the grant writers. After states submitted their applications, the Department of Education had raters score the applications to determine grant winners.

The 50 states and the District of Columbia were invited to respond to the grant proposal. The first phase of the grant process occurred in 2009, and 41 responded to the proposal. Only two states, Delaware and Tennessee, won the first round funding. States that did not win in the first round, had an opportunity in 2010 to reapply and have their applications re-scored. In the second phase, 13 of the 49 states available to re-apply did not. However, one state that did not apply in phase one, Maryland, did apply in phase two. Of the 36 states that reapplied in 2010, 17 won funding.

The purpose of this study was to determine what predictors may have influenced the award decisions. Using a political, socio-economic, race, academic, and geographic database along with the Race to the Top scoring documents, a spreadsheet was created to perform a descriptive analysis of the data. The variables used in the spreadsheet were put into statistical analysis software to perform a logistic regression, using the Heckman model. The Heckman model accounted for the exclusionary restrictions in the selection where states chose not to participate in the 2010 application process. The statistical outputs were used to determine which

variables had a significant influence on grant awards. Combing the results of the descriptive and inferential statistics, answers to the research questions could be assembled.

The research questions being answered by this study:

1. What are the political, social, economic, educational, and geographic patterns/characteristics of winning states and applying states in the national Race to the Top (RTTT) competition?
2. Do the scores across different sections of the RTTT application differ between winning and applying states?
3. What political, social, economic, educational, and geographic characteristics may have influenced states' final scores on the RTTT grant competition, controlling for potential selection bias between applicants and non-applicants of RTTT?

The literature focusing on federal involvement, federalism, in state-run affairs is a dominate theme. States do not have the capacity to implement all of the programs they would like, so they rely on federal grants to bolster the state's ability. Federal involvement in state policies have been designed to encourage states to comply with federal policy changes. Some federal involvement comes in the form of mandates that states must adhere. Other federal programs come in the form of cooperative grants that give the state leeway in the money's allocation under an umbrella of a specific program like education. To influence state policy and practice, the federal government creates grants with stipulations to direct how the money is used. Race to the Top was a cooperative grant process that encouraged states make policy changes that fell under a regulatory umbrella but giving the states opportunity to make the implementation specific to the needs of the state.

In the case of Race to the Top, the designers created a program that encouraged states to make changes in their educational practices by offering a monetary reward, a carrot. The applications made by the states included implementation plans that would meet the requirements of the grant, but were unique to the needs of each state. The federal government used the grant money as an incentive to get the states to make the educational changes the designers felt were the right ways to improve education. All of the states that applied for the Race to the Top grant made significant changes in policies in an attempt to win the grant. Interestingly, even the states that did not apply still had an increase in education policy changes.

States have the option to participate in federal grants, and in Race to the Top, thirteen states decided not to participate in the 2010 process. Some of those states applied in the initial 2009 process, but after initial scoring feedback and internal strife over funding requirements, decided not to continue to seek funding. By excluding themselves, the non-participating states did not want the strings attached to the grant. Since states made a choice not to participate, the regression model had to account for their exclusion. To accommodate their non-participation, the Heckman exclusion model was used so that the non-participants would not influence the significance of the variables in the study.

The ultimate goals of this study were to (1) identify patterns in the political, economic, racial, academic, and geographic data between the winning and applying states that led to states winning a grant award, (2) identify the patterns in the Race to the Top scoring data that would reveal the sections of the grant that were more important to the grant award, and (3) the political, economic, racial, academic, and geographic data that may have influenced the final scores. The statistical techniques used in this research were found to be statistically sound and reliable. The findings are summarized in the next two sections.

## **Impact on Winning States Compared to All Applicants (Questions 1 and 2)**

The t-test for the comparison of means was conducted for the political, economic, racial, academic, and geographical variables along with the Race to the Top application component scores was analyzed. The dataset combined 2009 data for Delaware and Tennessee and the 2010 data for all other states that applied in the second round. For all states, political control of the Governor's seat was a significant factor between winning and applying states. The means of race, percentage of African American students, average SAT scores, and states' geographic location had a significant comparison of the means. Political and racial structures along with average SAT scores of the winning states showed that the award process favored states with Democrat control of the Governorship, high percentages of African American students, and lower than average SAT scores.

Comparing the means of the Race to the Top variables showed that most components were significant in the application process (Note: a description of all Race to the Top components is available in Appendix A). All of components A, C, and D were significant in the award process. Sub-component B2, Developing and implementing common, high-quality assessments, and sub-component E1, intervening in the lowest-achieving schools and LEAs, were not significant. Two of the three sub-components of component F, F1, making education funding a priority, and F3, other significant reform conditions, were not significant, but the overall component F was significant. The means for the winning states compared to the applicants did not show a significant difference in these four sub-components. This reflects that the average scores between the winning and applying states for implementing high-quality assessments, intervening in lowest-achieving schools and LEA's, and education funding were not important for determining winning states.

The comparison of the geographic means of the winning and applying states also were significant. States in the Northeast and Southeast had higher average scores than states in the Midwest or West. The average score percentage of winning and applying states in the Northwest and Southeast were higher than the Western states where more states elected not to apply than any other region of the country. Geographic showed an influence in the scoring rubrics. States from the Northeast and Southeast consistently showed higher scores than the Midwestern or Western states.

### **Impact on Final Scores (Questions 3)**

A standard regression that did not account for the states' selection to not apply in 2010 and a Heckman regression that did account for the states' selection was used to determine factors that affected the Race to the Top scoring. In both regression models, states that had a Democratic Governor and/or Democratic control of the state's legislative process had significant effect on Race to the Top application scores. When accounting for the states that chose not to apply in 2010, using the Heckman selection regression model, other factors became clear. Average SAT scores had a significant influence on scoring. States with lower than average SAT scores were more likely to receive Race to the Top funds. Also, through the Heckman model, states with a higher percentage of African American and Hispanic students along with a higher total number of students in the state's public education system has a lesser but still significant effect on the final scores.

Federalism is reflected by the national government trying to influence the states through regulated or unregulated funding programs. The federal government's involvement in education was a key factor in the outcome of this research. To better understand the influence of the federal government in the scoring and award process, the research investigated the



relationship between state political affiliation and scoring. The first significant variable was the State Governor's political affiliation and the effect on the Race to the Top scores, and ultimately, winning and losing. The President of the United States during Race to the Top, Barak Obama, was a Democrat. The Governor variable showed that states with Democratic Governors had a positive coefficient. States with Governors of the same political affiliation as the President had a greater possibility of higher rater scores and winning grant funds.

Governors are in a unique position in education. Their position gives them the authority to align all levels of education to meet the goals of the administration. In many states, early childhood education, K-12 education, and higher education are managed by different departments (National Governors Association, 2012). The goals and objectives of each educational group may not align with each other to create a coherent and comprehensive educational strategy (National Governors Association, 2012). The Governor has the authority to align these departments into a common path (National Governors Association, 2012). Executive staffs are appointed to implement the Governor's agenda, and the Governor's office tries to mobilize the public and special interest groups to work in favor of the agenda (National Governors Association, 2017). Therefore, it is important for the President to gain the favor of the Governors to help enact proposed federal initiatives.

When Race to the Top was created, the United States was trying to recover from the "Great Recession" which placed a strain on state budgets, including education (Cavanagh, 2012). The Obama administration used this opportunity to make a political statement in education by dangling the additional funding carrot in front of the state Governors (Cavanagh, 2012). States that applied for the funding were willing to meet the stipulations of the grant, even though the states would have to fund the new programs after the grant funding expired (Vergari,

2012). Race to the Top was funded by the American Recovery and Reinvestment Act of 2009, but the development of the grant process was driven by the Obama administration (Howell, 2015). The educational policies that the administration was trying to enact were not being enacted by state or federal legislators, and Presidential decree would not effectively implement them (Howell, 2015). The policies set in the grant process, which aligned with the administrations educational agenda, were weighted to ensure compliance with that agenda (Howell, 2015).

The role and importance of the Governor in extending federal initiatives to the states has been seen in several federalism initiatives in education. President George H.W. Bush brought the Governors together at the “educational summit” to discuss educational improvement and try to gain acceptance of a national education plan (Klein, 2014). President Clinton tried to force compliance to educational reform by threatening Title I funding, but the Governors, through their legislators, removed the non-compliance portion of the America 2000 bill (Fuhrman, 1994). The implementation plan for Race to the Top needed the support of the state Governors to change state educational policy, and Democratic Governors were more willing to make those changes because of inter-governmental grant relationships. By restricting the money available to the Race to the Top grant, President Obama’s administration increased the competitive nature of the process, which would lead to more state-level educational policy changes (Wong & Shen, 2002). By placing this competitive process and the potential money involved, Governors had to weigh the risks and rewards of participating in the process (Vergari, 2012).

The second significant variable was the major political affiliation of the state’s legislative control; Governor, Senate, and House of Representatives. Legislative control had a negative coefficient on the total scores. As the Democratic control of the state’s legislative process

increased, the total scores decreased. This reverse phenomenon in legislative control compared to the Governor could be tied to the bipartisan agenda that President Obama was trying to push during the 2008 election (Wogan, 2012). During the formation of Race to the Top in 2009, the political environment in Washington, D.C. was polarized along party lines. Legislation was not getting passed due to gridlock in the political system. Race to the Top passed Congress with bipartisan support coupled with President Obama's desire for bipartisanship (Strauss, 2013), would explain why states with larger percentages of Democratic control of the legislative process received lower scores. A polarized legislative process did not require bipartisanship and undermined the cooperative agenda that President Obama wanted for Race to the Top.

Student population had a significant effect on the Race to the Top total and percentage score. The total number of public school students, the percentage of African American, and the percentage of Hispanic students were significant. Total number of public school students had a negligible coefficient, but the percentage of African American and Hispanic had positive coefficients reflecting an increased possibility of higher rating scores as these numbers and percentages increased. States with high total student populations require more funding than states with lower total student populations. The increased funding need for these high student-population states made Race to the Top enticing. African American and Hispanic students have, historically, performed worse than their Caucasian and Asian counterparts on national exams like NAEP (Hochschild & Shen, 2014). Barriers to success in these student populations include socio-economics, parental education level/attainment, and language (Hochschild & Shen, 2014). Schools with high percentages of African American and Hispanic students have struggled to meet Annual Yearly Progress (AYP), and these students are more likely to be pushed out or drop out of school (Hochschild & Shen, 2014). Race to the Top was designed to improve academics

and bolster minority populations (J. Weiss, 2015), so these factors having significant influence are explained.

The state average SAT scores showed a negative coefficient in the regression calculations. The negative coefficient represented a decrease in scores as states' average SAT scores increased. As states continued to see their educational success compared to others, the opportunity Race to the Top presented was integral to states' plans. Most states' had reported proficiency results below the "basic" level defined by NAEP (Bandeira de Mello, 2011). NAEP scores and the PISA results continued to show the need for improved academics. One of the benchmarks of success in Race to the Top was changes in NAEP scores over time (Gewertz, 2013). Academic improvement being an ultimate goal of Race to the Top (J. Weiss, 2015), an academic influence in scores and awards make sense.

In the Heckman selection model, selected variables were used to determine why states selected to exclude themselves from the grant. Private foundations and percentage of federal, Department of Education funds, were significant predictors in state participation. Research has shown that applying states had more private foundation involvement (Bleiberg & Harbatkin, 2016). Private foundations found an opportunity to influence public education when local and state education was desperate for additional funding (Strauss, 2011). School districts and states were making concessions to earn grants from these private foundations years before Race to the Top (Strauss, 2011). In the eight years before Race to the Top was created, private foundations granted \$684 million to school districts (Strauss, 2011). The Gates Foundation gave over \$78 million in local district grants in that timeframe (Strauss, 2011). Beyond the local district grants, the Gates Foundation granted millions of dollars to states to assist in their Race to the Top applications (Strauss, 2011). The research correlates with the involvement of private

foundations in the Race to the Top grant applications. Lower involvement of private foundations, the more likely the state would not participate.

The federal funding as a percentage of percentage of state educational revenue also had a positive effect on participation. Some states are more reliant upon federal education dollars, and therefore are more likely to seek additional funding when available. Federal money coming into the states allows the states to provide services to their citizens that would not have been possible under the regular state's budget (Albritton, 1989). States become dependent upon the additional funding to maintain the level of service the citizens have been receiving (Albritton, 1989). Road construction and infrastructure, and welfare systems have received high levels of federal funding for decades, and the states rely on those dollars. Race to the Top was introduced when states were more reliant on federal stimulus money than at any time in the past (Wilson, 2013). The "Great Recession" reduced state tax revenues, and the American Recovery and Reinvestment Act of 2009 was giving states additional funding that allowed the states to balance their budgets (Wilson, 2013). Additional funding to bolster state budgets tempted states to apply and meet the stipulations of the grant. The research supports the finding that a higher percentage of federal education dollars as part of state education expenditures, the more likely the states participated.

The higher the percentage of Republicans in the state House of Representatives, the less likely a state participated. Conversely, the higher the percentage of African American and Hispanic students, the more likely a state participated. The results showed that many of the variables that affected Race to the Top scores, were the same variables that affected state participation. This supports the research that Race to the Top was designed for specific state factors.

This study adds to the literature on federalism, carrot hypothesis, and intergovernmental grants. Federalism is the intervention of the national government in the responsibilities of the states. One way that the federal government influences state action is by gaining the support of the Governors. The role and influence of the Governor made their participation in Race to the Top critical to the implementation of the federal agenda. The Democratic Governor's significance shows that political affiliation between the state Governors and the President influenced scores. The research showed that federal and state legislators were struggling to implement President Obama's education agenda. To get the states to enact the agenda, through the Race to the Top grant, Governors had to promote and support the plan. Governors of the same political party as the President, Democrats, were more likely to provide that promotion and support.

The carrot hypothesis is defined by the granting authority placing a temptation in front of the receiving authority that is good enough to entice the receiving authority to do what is required to try and earn the temptation. In particular, the negative impact of Democrat-controlled legislatures on RTTT final total/percent scores indicated that the grant competition attempted to offer something for all sides—a carrot approach that might appease advocates of a bipartisan approach to education reform. Under the RTTT grant, the federal government placed the opportunity for a large amount of money in front of the states in exchange for making changes in their educational policies. The budgetary crisis after the “Great Recession” made states more willing to make law and policy changes for an infusion of money. The possibility of millions of dollars in additional education dollars caused the applying states to implement many of the requirements of Race to the Top, even before applying for the grant, without a guarantee

of funding. The significance of all but five of the Race to the Top grant sub-components showed how much the states were willing to change their educational policies to try and win the money.

Intergovernmental grants are defined by a four-step process. First, the federal government decided how to grant the money to the states, done through the implementation of the American Recovery and Reinvestment Act. Second, the conditions of the grant had to be established, which was the Race to the Top program. Third, the states had to decide to participate in the program, which was indicated by the states that completed the applying process. Fourth, the states had to decide how to spend the funds. Since the funds were contingent upon the educational policies being re-shaped to meet the application, the spending was set when the states applied. Like the carrot hypothesis, the significance of the application criterion, along with the states' willingness to meet those requirements in the hope of winning the funding supports the intergovernmental grant hypothesis.

The findings of this research show that the federal government will use its political and economic resources to influence the states to follow the federal agenda. Political and economic pressures make the states more reliant on federal dollars, and therefore more accepting of federal influence during poor economic periods. Also, continued state reliance on federal grants, like welfare, education, and highway grants, maintain an open link between the federal and state levels of government. By maintaining this open link, opportunities for federal government influence continue.

While interpreting the results of this research, several limitations need to be acknowledged. The variables used in this research are not a comprehensive list of possible factors that may have influenced the Race to the Top scores, award decisions, or state participation. Even though the variables used in this research came from literature, factors that

could explain other areas of Race to the Top's policy prescriptions and reforms were not examined. Bias that may have existed in the Race to the Top scoring process were not part of the research. Inconsistencies in the Race to the Top documents were not filtered to adjust/equalize scoring.

Another limitation of the study was the extent to which some states were leading others in promoting one or more policy prescriptions, like Value Added Models (VAM's), endorsed by the Obama administration. VAM's are statistical techniques used to estimate a teacher, school, and district's effectiveness in student learning (McCaffrey, Lockwood, Koretz, & Hamilton, 2004). One of the requirements of Race to the Top was the implementation of VAM's to evaluate teachers and schools. Research has shown that states providing less education funding than the national average, have higher rates of students in poverty, and have higher percentages of racial and language minorities are more likely to implement VAM's (Amrein-Beardsley, 2014). In particular, a variable that could explain the effect of integration of VAMs in the state's educational processes on grant awards was not included in this research.

The study's findings have several implications for state-federal relations in the realm of education. As the federal government continues to try and improve the educational process throughout the country, federal influence in state education policies and processes will continue. As Race to the Top changed the face of education in many states, many others decided that the requirements were too much sacrifice for the potential funding opportunity. Several states have moved away from some of the requirements of Race to the Top, like Common Core State Standards, because of the backlash within the state. The strain being experienced within the states led federal legislators to enact ESSA which restricted the influence of the federal government in state education affairs. To continue influencing the country's educational



process, the federal government will experience more resistance from the states. If the intergovernmental funding process for education is reduced, states will be required to fund additional programs through their own budgets or through private foundation donations. Private foundations and state agendas may conflict with the federal agenda. These conflicts may widen the gap between the state educational systems and the federal agenda.

### **Recommendations**

There are three recommendations resulting from this study. The first recommendation addresses the process by which the federal government approaches states to apply for competitive grants. The second recommendation addresses the rating process that the federal government uses to score state applications. The third recommendation addresses the willingness of the states to meet the requirements of the grant proposals. Both sides of the grant process, provider and receiver, have to work together to create an opportunity that provides maximum benefit to the students. Excluding federal money from students, from both sides, is not improving all of America's education system.

The Race to the Top competitive grant process could be considered a success in terms of states, even those that did not apply, changing their educational laws and practices. However, the funding opportunity was limited to 19 states. Nineteen other states that applied in 2010 were excluded. The non-winning states, even though they may have made changes to their education laws and practices in an attempt to win funding, did not see any financial benefit of their efforts. It is possible that non-winning states may have lost money in their efforts to convince the raters that they deserved funding. Race to the Top was a competitive process that resulted in winners and losers, a "zero-sum" process. Instead of providing funding for a few states, the federal government could have provided a funding opportunity to all applying states using a scaled

approach. The scale could be based upon a scoring rubric or other criterion, but allows every state access to funding.

To provide a fair and equitable scoring process for the states to apply for a grant, the rating and scoring system has to be unbiased. No grouping of variables can be a significant predictor of scoring or winning. States that are not led by a specific political party, have a low minority population, have high academic results, or are select regions of the country need to feel like they have a reasonable opportunity to win funding. Even if funding was not provided to all applying states, the rating and scoring process should not weigh any of these factors more than the others. The grant managers must select a rater pool that is balanced, and any bias that appears in the results must be addressed immediately. Also, the rating process needs to be as blind as possible so that the raters do not have an opportunity to identify the applicants as they are rating their applications.

Finally, states have to address the needs of their constituents compared to the requirements of the grant proposal. States that are not willing or able to meet the requirements of the grant proposal should work with government leaders to address their concerns. Valuable resources, time and money, should not be spent by the states in the hopes of winning grant money. Resources spent on these efforts should benefit the state regardless of winning grant funding. Also, states that apply for federal grants need to weigh the internal cost of meeting grant requirements after the grant money is exhausted. If changes made by the states to win funding are worthwhile, long-term solutions, the state must plan to continue funding. Changing the laws and practices of the state for short-term funding without maintaining change after the funding expires does not create an atmosphere of improvement.

### **Recommendations for Further Research**

The recommendations for further research, based upon the results of this study, are based within the areas of non-application and state application content. The researcher recommends another study that examines the factors that caused thirteen states to exclude themselves from the grant process. Studying what political and social issues the non-applying states faced could provide insight into the barriers for future grant opportunities with the states. In conjunction to the political and social research, a study of what requirements of Race to the Top played a role in the states not applying could improve any future grant process. What influence did political figures have in the award process? Vice President Joe Biden, represented Delaware before becoming Vice President, and Lamar Alexander, a former Secretary of Education, represents Tennessee, both first round winners. Further, the researcher recommends a study of the costs the states incurred to apply for the Race to the Top grant. If states incurred a high level of expense without receiving grant funds, how will the states respond if another competitive grant opportunity arose? Finally, future research should examine to what extent there is a correlation between winning RTTT and the extent to which states were leading other states in promoting one or more policy prescriptions (i.e., VAMs, charter schools, and teacher evaluation) endorsed by the Obama administration.

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## Appendix A

### Variable Definitions

Variable	Definition	Source
Year	Year data was retrieved	
State	Full state name	
dem_gov	Did the state have a Democratic Governor?	Census
dem_gov_cont	A percentage of Democratic control of Senate, House, and Governor	Census
pct_repU	Percentage of Republicans in Upper House (Senate)	Census
pct_repL	Percentage of Republicans in Lower House (House of Representatives)	Census
sat_reading	Average state SAT reading score	SAT
sat_math	Average state SAT math score	SAT
sat_writing	Average state SAT writing score	SAT
SAT	Average state overall SAT score	SAT
students	Number of students in K-12	Census
Black	Number of African American students in K-12	Census
Hispanic	Number of Hispanic students in K-12	Census
freelunch	Number of students on free lunch in K-12	Census
pct_black	Percentage of Black students in state	Census
pct_hisp	Percentage of Hispanic students in state	Census
pct_lunch	Percentage of Free Lunch students in state	Census
expend	State educational expenditures	NCES
log_expend	The log calculation of state expenditures	Calculated
log_medinc	Log calculation of med_inc	Calculated
Region	Region of the country	Census
Midwest	Dummy variable for region	Census
South	Dummy variable for region	Census
West	Dummy variable for region	Census
Northeast	Dummy variable for region	Census
pvt_fnd	Number of private foundations	National Center for Charitable Statistics (NCCS)
pct_fed_doe	Percentage of federal dollars in state education revenues	Census
award_tier	The award tier that the state received funding (1st, 2nd, 3rd, or none)	Race to the Top Scoring Rubric
score_pct	The percentage of points received compared to the points available	Race to the Top Scoring Rubric

<b>Variable</b>	<b>Definition</b>	<b>Source</b>
<b>RTTT Criterion A</b>		
A	Overall score for “State Success Factors”	Race to the Top Scoring Rubric
A1	Articulating State's education reform agenda and LEA's participation in it	Race to the Top Scoring Rubric
A1_agenda	The state's articulation of their reform agenda	Race to the Top Scoring Rubric
A1_commit	State LEA commitment level	Race to the Top Scoring Rubric
A1_impact	The statewide impact of the education reform agenda	Race to the Top Scoring Rubric
A2	Building strong statewide capacity to implement, scale up, and sustain proposed plans	Race to the Top Scoring Rubric
A2_capacity	The state's capacity to implement the reforms	Race to the Top Scoring Rubric
A2_stakehold	The level of stakeholder support	Race to the Top Scoring Rubric
A3	Demonstrating significant progress in raising achievement and closing gaps	Race to the Top Scoring Rubric
A3_progress	The state's progress in improving key indicators	Race to the Top Scoring Rubric
A3_outcomes	The state's outcomes in improving student achievement	Race to the Top Scoring Rubric
<b>RTTT Criterion B</b>		
B	Overall score for “Standards and Assessments”	Race to the Top Scoring Rubric
B1	Developing and adopting common standards	Race to the Top Scoring Rubric
B1_consort	The state's participation in a consortium	Race to the Top Scoring Rubric
B1_standards	Adopting common standards	Race to the Top Scoring Rubric
B2	Developing and implementing common, high-quality assessments	Race to the Top Scoring Rubric
B3	Supporting the transition to enhanced standards and high-quality assessments	Race to the Top Scoring Rubric

<b>Variable</b>	<b>Definition</b>	<b>Source</b>
<b>RTTT Criterion C</b>		
C	Overall score for “Data Systems to Support Instruction”	Race to the Top Scoring Rubric
C1	Fully Implemented Statewide Longitudinal Data System	Race to the Top Scoring Rubric
C2	Accessing and Using State Data	Race to the Top Scoring Rubric
C3	Using Data Systems to improve instruction	Race to the Top Scoring Rubric
<b>RTTT Criterion D</b>		
D	Overall score for “Great Teachers and Leaders”	Race to the Top Scoring Rubric
D1	Providing high-quality pathways for aspiring teachers and principals	Race to the Top Scoring Rubric
D2	Improving teacher and principal effectiveness based on performance	Race to the Top Scoring Rubric
D2_growth	Student growth measurement	Race to the Top Scoring Rubric
D2_eval_process	Common teacher/admin evaluation process	Race to the Top Scoring Rubric
D2_eval	Conducting annual teacher/admin evaluations	Race to the Top Scoring Rubric
D2_data_eval	Data being used to inform key employment decisions	Race to the Top Scoring Rubric
D3	Ensuring equitable distribution of effective teachers and principals	Race to the Top Scoring Rubric
D3_eq_dist_schoo	Equitable distribution of highly-effective teachers and administrators in high-	Race to the Top Scoring Rubric
D3_eq_dist_subj	Equitable distribution of highly-effective teachers in high-need subjects	Race to the Top Scoring Rubric
D4	Improving the effectiveness of teacher and principal preparation programs	Race to the Top Scoring Rubric
D5	Providing effective support to teachers and principals	Race to the Top Scoring Rubric

<b>Variable</b>	<b>Definition</b>	<b>Source</b>
<b>RTTT Criterion E</b>		
E	Overall score for “ Turning Around the Lowest-Achieving Schools”	Race to the Top Scoring Rubric
E1	Intervening in the lowest-achieving schools and LEAs	Race to the Top Scoring Rubric
E2	Turning around the lowest-achieving schools	Race to the Top Scoring Rubric
E2_turn_schools	Process to identify the lowest performing schools	Race to the Top Scoring Rubric
E2_Support_lea	Process to support LEA's in turning around low-performing schools.	Race to the Top Scoring Rubric
<b>RTTT Criterion F</b>		
F	Overall Score for “Other”	Race to the Top Scoring Rubric
F1_funding	Making education funding a priority	Race to the Top Scoring Rubric
F2_conditions	Ensuring successful conditions for high-performing charters and other innovative schools	Race to the Top Scoring Rubric
F3_reforms	Other significant reform conditions	Race to the Top Scoring Rubric
<b>Miscellaneous</b>		
STEM	Did the state meet the STEM requirements?	Race to the Top Scoring Rubric
Total	Total Score	Race to the Top Scoring Rubric
applied_09	Dummy variable identifying states that applied for RTTT funding	Race to the Top Scoring Rubric

## Appendix B

### Award Winning States (By Region)

Table B1									
<i>Phase I Scores RTTT Award Winners (Adjusted) – Northeastern U.S.</i>									
<u>Section</u>	<u>Possible</u>	<u>DE</u>	<u>DC</u>	<u>MA</u>	<u>MD</u>	<u>NJ</u>	<u>NY</u>	<u>PA</u>	<u>RI</u>
A. State Success Factors	125	119	113	115	111	104	108	103	102
B. Standards and Assessments	70	69	68	70	70	69	70	69	70
C. Data Systems to Support Instruction	47	47	35	44	41	31	46	45	47
D. Great Teachers and Leaders	138	119	118	127	126	124	128	95	120
E. Turning Around the Lowest-Achieving Schools	50	43	48	50	46	49	48	44	46
F. General	55	42	53	50	41	45	50	46	52
A. STEM	15	15	15	15	15	15	15	15	15
Total	500	455	450	471	450	438	465	418	451

Source: (U.S. Department of Education, 2012)

Table B2			
<i>Phase I Scores RTTT Award Winners (Adjusted) – Midwestern U.S.</i>			
<u>Section</u>	<u>Possible</u>	<u>IL</u>	<u>OH</u>
A. State Success Factors	125	103	111
B. Standards and Assessments	70	65	68
C. Data Systems to Support Instruction	47	42	37
D. Great Teachers and Leaders	138	111	120
E. Turning Around the Lowest-Achieving Schools	50	46	45
F. General	55	45	45
B. STEM	15	15	15
Total	500	330	356

Source: (U.S. Department of Education, 2012)



Table B3

*Phase I Scores RTTT Award Winners (Adjusted) – Southeastern U.S.*

<u>Section</u>	<u>Possible</u>	<u>FL</u>	<u>GA</u>	<u>KY</u>	<u>LA</u>	<u>NC</u>	<u>TN</u>
A. State Success Factors	125	112	104	108	106	112	112
B. Standards and Assessments	70	68	70	67	66	68	68
C. Data Systems to Support Instruction	47	41	43	43	43	40	44
D. Great Teachers and Leaders	138	116	120	113	111	116	114
E. Turning Around the Lowest-Achieving Schools	50	47	48	45	45	46	48
F. General	55	53	46	21	48	43	43
C. STEM	15	15	15	15	15	15	15
Total	500	452	446	412	434	442	444

Source: (U.S. Department of Education, 2012)

Table B4

*Phase I Scores RTTT Award Winners (Adjusted) – Western U.S.*

<u>Section</u>	<u>Possible</u>	<u>AZ</u>	<u>CO</u>	<u>HI</u>
A. State Success Factors	125	105	98	116
B. Standards and Assessments	70	67	66	69
C. Data Systems to Support Instruction	47	36	42	44
D. Great Teachers and Leaders	138	114	105	122
E. Turning Around the Lowest-Achieving Schools	50	47	43	48
F. General	55	50	52	48
D. STEM	15	15	15	15
Total	500	435	420	462

Source: (U.S. Department of Education, 2012)

## Appendix C

### Research Dataset

year	state	dem_gov	dem_gov_cont	pct_repU	pct_repL	sat_reading	sat_math	sat_writing	sat
2010	Alabama	0	0.666666687	0.4	0.428571	546	541	536	1623
2010	Alaska	0	0.166666701	0.5	0.55	515	511	487	1513
2010	Arizona	0	0	0.6	0.583333	517	523	499	1539
2010	Arkansas	1	1	0.228571	0.282828	568	570	554	1692
2010	California	0	0.666666687	0.358974	0.371795	499	515	499	1513
2010	Colorado	1	1	0.4	0.415385	570	573	556	1699
2010	Connecticut	0	0.666666687	0.333333	0.245033	509	513	513	1535
2010	Delaware	1	1	0.285714	0.414634	489	490	476	1455
2010	District of Columbia	1	1	0.55	0.531034	469	457	459	1385
2010	Florida	0	0	0.65	0.633333	487	489	471	1447
2010	Georgia	0	0	0.607143	0.586592	485	487	473	1445
2010	Hawaii	0	0.666666687	0.08	0.117647	479	500	469	1448
2010	Idaho	0	0	0.8	0.742857	542	539	517	1598
2010	Illinois	1	1	0.372881	0.40678	599	617	591	1807
2010	Indiana	0	0.333333313	0.66	0.48	493	501	475	1469
2010	Iowa	1	1	0.36	0.44	596	606	575	1777
2010	Kansas	1	0.333333313	0.775	0.608	580	591	563	1734
2010	Kentucky	1	0.666666687	0.540541	0.35	576	572	563	1711
2010	Louisiana	0	0.5	0.384615	0.490196	555	550	546	1651
2010	Maine	1	1	0.428571	0.36	469	469	453	1391
2010	Maryland	1	1	0.297872	0.257143	499	502	491	1492
2010	Massachusetts	1	1	0.125	0.100629	513	527	509	1549
2010	Michigan	1	0.666666687	0.578947	0.394495	583	604	573	1760
2010	Minnesota	0	0.666666687	0.313433	0.350746	593	608	577	1778
2010	Mississippi	0	0.666666687	0.490196	0.393443	564	543	553	1660
2010	Missouri	1	0.333333313	0.676471	0.54321	592	593	579	1764
2010	Montana	1	0.5	0.54	0.5	539	537	516	1592
2010	Nebraska	0	0	0.5	0.5	585	591	569	1745
2010	Nevada	0	0.666666687	0.428571	0.333333	494	496	470	1460
2010	New Hampshire	1	1	0.416667	0.4375	523	525	511	1559
2010	New Jersey	0	0.666666687	0.425	0.4125	495	516	497	1508
2010	New Mexico	1	1	0.357143	0.357143	548	541	529	1618
2010	New York	1	1	0.483871	0.290541	485	499	476	1460
2010	North Carolina	1	1	0.4	0.433333	493	508	474	1475
2010	North Dakota	0	0	0.553191	0.617021	586	612	561	1759
2010	Ohio	1	0.666666687	0.636364	0.464646	539	545	522	1606
2010	Oklahoma	1	0.333333313	0.541667	0.60396	571	565	547	1683
2010	Oregon	1	1	0.4	0.4	520	521	499	1540
2010	Pennsylvania	1	0.666666687	0.6	0.485	493	501	479	1473
2010	Rhode Island	0	0.666666687	0.108108	0.08	495	493	489	1477
2010	South Carolina	0	0	0.586957	0.572581	482	490	464	1436
2010	South Dakota	0	0	0.6	0.657143	584	591	562	1737
2010	Tennessee	1	0.333333313	0.575758	0.515152	575	568	567	1710
2010	Texas	0	0	0.612903	0.513333	479	502	465	1446
2010	Utah	0	0	0.724138	0.706667	563	559	545	1667
2010	Vermont	0	0.666666687	0.233333	0.335664	515	518	505	1538
2010	Virginia	1	0.666666687	0.45	0.602041	512	509	495	1516
2010	Washington	1	1	0.367347	0.377551	523	529	508	1560
2010	West Virginia	1	1	0.235294	0.29	514	501	497	1512
2010	Wisconsin	1	1	0.454545	0.469388	590	602	575	1767
2010	Wyoming	1	0.333333313	0.766667	0.683333	572	569	551	1692

year	state	students	black	hispanic	freelunch	pct_black	pct_hisp	pct_lunch	expend
2010	Alabama	732733	254004	32231	402197	0.346653	0.043987	0.5489	7410192
2010	Alaska	132104	4788	7802	50701	0.036244	0.05906	0.383796	2430593
2010	Arizona	1069573	59269	451480	481964	0.055414	0.422112	0.450613	9889232
2010	Arkansas	482114	103637	47340	291608	0.214964	0.098193	0.604853	5392058
2010	California	6207959	409556	3178920	3335426	0.065973	0.512072	0.537282	67570728
2010	Colorado	842864	40458	265952	336426	0.048001	0.315534	0.399146	8743142
2010	Connecticut	559912	73646	104179	190554	0.131531	0.186063	0.340328	9944121
2010	Delaware	128935	41564	15931	61564	0.322364	0.123558	0.477481	1855007
2010	District of Columbia	74996	57292	10614	52027	0.763934	0.141528	0.69373	2063029
2010	Florida	2642749	607009	740275	1479483	0.229688	0.280116	0.559827	27433536
2010	Georgia	1677067	621222	200086	961954	0.370422	0.119307	0.573593	17178095
2010	Hawaii	179601	4444	7996	84106	0.024744	0.044521	0.468294	2342924
2010	Idaho	275806	2815	43811	124095	0.010206	0.158847	0.449936	2107272
2010	Illinois	2082121	381963	478040	921471	0.183449	0.229593	0.442564	27621033
2010	Indiana	1041337	124842	87453	485575	0.119886	0.083981	0.4663	11037564
2010	Iowa	484856	24726	41355	188486	0.050997	0.085293	0.388746	5859335
2010	Kansas	479987	35610	78300	228843	0.07419	0.163129	0.476769	5824926
2010	Kentucky	673128	72915	26188	380773	0.108323	0.038905	0.565677	7200059
2010	Louisiana	695763	315444	18123	460537	0.453379	0.026048	0.661916	8502295
2010	Maine	183477	3319	2713	78915	0.018089	0.014787	0.430108	2630548
2010	Maryland	852202	305302	98403	341557	0.358251	0.115469	0.400793	13251725
2010	Massachusetts	955292	78749	147436	326840	0.082434	0.154336	0.342136	14715706
2010	Michigan	1553311	293068	89465	719448	0.188673	0.057596	0.463171	19444952
2010	Minnesota	837930	77015	60173	306136	0.091911	0.071811	0.365348	10816918
2010	Mississippi	489435	243979	12305	345707	0.498491	0.025141	0.706339	4268801
2010	Missouri	916320	155703	41455	406331	0.169922	0.045241	0.443438	10072167
2010	Montana	141693	1378	4996	57836	0.009725	0.035259	0.408178	1653315
2010	Nebraska	298267	19976	47852	127105	0.066974	0.160433	0.426145	3739179
2010	Nevada	436840	43164	169149	219904	0.09881	0.38721	0.503397	4244029
2010	New Hampshire	194001	3806	7224	48904	0.019618	0.037237	0.252081	2896807
2010	New Jersey	1356893	222185	292531	444726	0.163745	0.215589	0.327753	25308865
2010	New Mexico	336005	7091	199647	227068	0.021104	0.594179	0.675788	3641735
2010	New York	2733503	518271	610268	1315411	0.1896	0.223255	0.481218	57350534
2010	North Carolina	1488184	393852	187456	747960	0.264653	0.125963	0.502599	13277669
2010	North Dakota	96323	2318	95	31427	0.024065	0.000986	0.326267	1198926
2010	Ohio	1750172	283129	60338	745022	0.161772	0.034475	0.425685	23500247
2010	Oklahoma	659828	66752	80941	398908	0.101166	0.12267	0.604564	5618816
2010	Oregon	553617	14070	113833	280165	0.025415	0.205617	0.506063	6201702
2010	Pennsylvania	1763558	271929	145240	686596	0.154193	0.082356	0.389324	27393554
2010	Rhode Island	142575	11285	29733	61127	0.079151	0.208543	0.428736	2316164
2010	South Carolina	724651	261703	46055	394988	0.361143	0.063555	0.545073	7919837
2010	South Dakota	125883	3140	4347	46718	0.024944	0.034532	0.371122	1347213
2010	Tennessee	987078	235865	60544	542953	0.238953	0.061337	0.550061	9294028
2010	Texas	4933683	637780	2479646	2470924	0.129271	0.502595	0.500827	52711794
2010	Utah	585552	8468	88285	223943	0.014462	0.150772	0.382448	4642830
2010	Vermont	85144	1609	1129	31339	0.018897	0.01326	0.368071	1515638
2010	Virginia	1250206	300841	142430	458879	0.240633	0.113925	0.367043	14291767
2010	Washington	1043466	50014	187713	418065	0.047931	0.179894	0.40065	12025483
2010	West Virginia	282879	14786	3139	145605	0.05227	0.011097	0.514725	3515624
2010	Wisconsin	872164	86662	80818	342660	0.099364	0.092664	0.392885	11359841
2010	Wyoming	88779	1022	10919	32968	0.011512	0.122991	0.371349	1643359

year	state	med_inc	log_exp_percap	log_expend	log_medinc	region	Midwest	South	West
2010	Alabama	42224	2.313830137	15.818367	10.65074444	2	0	1	0
2010	Alaska	59672	2.912301064	14.70364571	10.99661827	4	0	0	1
2010	Arizona	48375	2.224187136	16.10695648	10.7867384	3	0	0	1
2010	Arkansas	39804	2.414501905	15.50043774	10.59172249	2	0	1	0
2010	California	55995	2.387342691	18.02868462	10.93301773	4	0	0	1
2010	Colorado	62133	2.339219332	15.98377991	11.03703213	1	1	0	0
2010	Connecticut	68080	2.876957178	16.11249161	11.12843895	0	0	0	0
2010	Delaware	56956	2.666335344	14.4333992	10.95003414	0	0	0	0
2010	District of Columbia	58724	3.314495802	14.5396862	10.98060417	0	0	0	0
2010	Florida	45456	2.339946508	17.12727737	10.7244997	2	0	1	0
2010	Georgia	45509	2.326588631	16.65914536	10.72566509	2	0	1	0
2010	Hawaii	61417	2.568417311	14.66691017	11.02544212	4	0	0	1
2010	Idaho	48535	2.033451796	14.5609045	10.79004002	4	0	0	1
2010	Illinois	52328	2.585190535	17.13408852	10.86528683	1	1	0	0
2010	Indiana	47595	2.360798836	16.21681404	10.77048302	1	1	0	0
2010	Iowa	50562	2.491939545	15.58354664	10.83095551	1	1	0	0
2010	Kansas	47506	2.496142626	15.57765675	10.76861095	1	1	0	0
2010	Kentucky	42401	2.369909048	15.78959942	10.65492725	2	0	1	0
2010	Louisiana	40540	2.503082275	15.95584679	10.61004448	2	0	1	0
2010	Maine	49442	2.662858248	14.78270245	10.8085556	0	0	0	0
2010	Maryland	66226	2.744059324	16.39963913	11.10082817	0	0	0	0
2010	Massachusetts	62856	2.734653711	16.50442505	11.0486021	0	0	0	0
2010	Michigan	47736	2.527198792	16.78309822	10.77344131	1	1	0	0
2010	Minnesota	53972	2.557932138	16.19662285	10.89622021	1	1	0	0
2010	Mississippi	39363	2.165836573	15.2668438	10.58058167	2	0	1	0
2010	Missouri	47262	2.397165537	16.1252861	10.76346207	2	0	1	0
2010	Montana	42582	2.456874847	14.31829262	10.65918732	4	0	0	1
2010	Nebraska	54160	2.528632402	15.13437653	10.89969826	1	1	0	0
2010	Nevada	52815	2.273701429	15.26102352	10.87455082	4	0	0	1
2010	New Hampshire	68735	2.703500986	14.87911987	11.13801384	0	0	0	0
2010	New Jersey	64954	2.925957203	17.04666519	11.08143425	0	0	0	0
2010	New Mexico	46558	2.383089542	15.10797119	10.74845409	3	0	0	1
2010	New York	51351	3.043598175	17.86469269	10.84643936	0	0	0	0
2010	North Carolina	45213	2.188526869	16.40159416	10.71914005	2	0	1	0
2010	North Dakota	52614	2.521474361	13.9969368	10.87073708	1	1	0	0
2010	Ohio	47333	2.597296953	16.97252083	10.76496315	1	1	0	0
2010	Oklahoma	44463	2.141896963	15.5416317	10.70241261	3	1	0	0
2010	Oregon	52198	2.416105986	15.64033413	10.86279964	4	0	0	1
2010	Pennsylvania	49838	2.742974281	17.12581825	10.81653309	0	0	0	0
2010	Rhode Island	53252	2.787799358	14.65542316	10.88279057	0	0	0	0
2010	South Carolina	43014	2.391435862	15.88488102	10.66928101	2	0	1	0
2010	South Dakota	46783	2.370440483	14.11354828	10.75327492	1	1	0	0
2010	Tennessee	39809	2.242378235	16.04488182	10.59184837	2	0	1	0
2010	Texas	48757	2.368753433	17.78034973	10.7946043	3	1	0	0
2010	Utah	58489	2.070524454	15.35083485	10.97659397	4	0	0	1
2010	Vermont	57692	2.879247904	14.23134708	10.96287346	0	0	0	0
2010	Virginia	62271	2.43637538	16.47519493	11.03925133	2	0	1	0
2010	Washington	57934	2.444480181	16.30253792	10.96706009	4	0	0	1
2010	West Virginia	44126	2.519953012	15.0727272	10.69480419	2	0	1	0
2010	Wisconsin	51939	2.566862106	16.24559402	10.85782528	1	1	0	0
2010	Wyoming	53847	2.918347359	14.312253	10.89390182	4	0	0	1

year	state	Northeast	all_np	public_char	pvt_fnd	np_org	pct_fed_doe	award_tier	score_pct
2010	Alabama	0	18374	12264	1062	5048	0.072478433		0.424
2010	Alaska	0	4784	3389	113	1282	0.060465411		
2010	Arizona	0	19796	14394	1086	4316	0.063897308	3	0.8708
2010	Arkansas	0	12083	8174	422	3487	0.031100993		0.7784
2010	California	0	144728	105876	10000	28852	0.052450741		0.8472
2010	Colorado	0	25560	17901	1662	5997	0.081593707	3	0.8404
2010	Connecticut	1	18602	11860	1770	4972	0.052083384		0.758
2010	Delaware	1	5523	3050	1226	1247	0.04390106	1	0.9092
2010	District of Columbia	1	12367	8024	497	3846	0.091371422	2	0.9
2010	Florida	0	69310	50655	5960	12695	0.097906596	2	0.9048
2010	Georgia	0	37384	28334	1910	7140	0.059604937	2	0.8928
2010	Hawaii	0	6861	5032	444	1385	0.039086813	2	0.9248
2010	Idaho	0	7002	4584	311	2107	0.010199127		
2010	Illinois	0	60277	36801	5337	18139	0.093300555	3	0.8532
2010	Indiana	0	32993	21159	1305	10529	0.108235489		
2010	Iowa	0	26361	11551	983	13827	0.050179522		0.7656
2010	Kansas	0	15471	9535	846	5090	0.050992066		
2010	Kentucky	0	16785	11224	681	4880	0.116352796	3	0.8248
2010	Louisiana	0	17001	11028	730	5243	0.122318113	3	0.868
2010	Maine	1	8508	5467	449	2592	0.133939042		0.5668
2010	Maryland	1	27654	17290	2307	8057	0.066850236	2	0.9
2010	Massachusetts	1	33722	22718	3515	7489	0.117189932	2	0.942
2010	Michigan	0	42886	28270	2566	12050	0.096799622		0.7632
2010	Minnesota	0	31528	20636	1680	9212	0.088549127		
2010	Mississippi	0	11805	7891	355	3559	0.095065993		0.5268
2010	Missouri	0	34819	18599	1857	14363	0.090003223		0.6328
2010	Montana	0	9230	6127	323	2780	0.042725867		0.4768
2010	Nebraska	0	11916	6901	666	4349	0.080248168		0.5916
2010	Nevada	0	7254	4870	682	1702	0.091152586		0.7624
2010	New Hampshire	1	7498	4903	513	2082	0.007625706		0.6704
2010	New Jersey	1	38825	25925	3347	9553	0.061003863	3	0.8756
2010	New Mexico	0	9104	6500	380	2224	0.079838174		0.7324
2010	New York	1	91758	61691	11529	18538	0.083685011	2	0.9296
2010	North Carolina	0	39587	27777	2420	9390	0.116562707	2	0.8832
2010	North Dakota	0	5318	3010	117	2191	0.025861565		
2010	Ohio	0	59897	37267	3851	18779	0.088591777	2	0.8816
2010	Oklahoma	0	16953	11960	958	4035	0.08075002		0.7836
2010	Oregon	0	21050	14773	1016	5261	0.119350436		
2010	Pennsylvania	1	63345	37600	6208	19537	0.096833303	3	0.8352
2010	Rhode Island	1	7687	3364	1743	2580	0.067859709	2	0.9024
2010	South Carolina	0	21931	17062	659	4210	0.074204114		0.862
2010	South Dakota	0	6031	3544	173	2314	0.08363054		
2010	Tennessee	0	27623	20577	1034	6012	0.088378244	1	0.8884
2010	Texas	0	92734	65048	5711	21975	0.107886835		
2010	Utah	0	7855	5235	807	1813	0.146225613		0.758
2010	Vermont	1	5363	3602	274	1487	0.097646889		
2010	Virginia	0	37860	26283	1827	9750	0.143579915		
2010	Washington	0	32084	22343	1515	8226	0.122284253		0.5812
2010	West Virginia	0	9381	5905	339	3137	0.095074515		
2010	Wisconsin	0	30854	18725	2074	10055	0.124235248		0.7368
2010	Wyoming	0	4156	2518	286	1352	0.083853618		

year	state	A	A1	A1_agenda	A1_commit	A1_impact	A2	A2_capacity	A2_stakehold
2010	Alabama	42.8	21.2	3	10.2	8	10.6	7.8	2.8
2010	Alaska								
2010	Arizona	105.4	57.6	4.6	40.2	12.8	26	17.8	8.2
2010	Arkansas	94.4	47.6	4.4	33.6	9.6	23.2	14.6	8.6
2010	California	100	51	4.8	34.6	11.6	25	18	7
2010	Colorado	97.6	52.2	4.4	37.2	10.6	24.2	17	7.2
2010	Connecticut	96	51	4.8	34.2	12	24.2	15.2	9
2010	Delaware	119.4	64.6	5	45	14.6	28	18.2	9.8
2010	District of Columbia	113	59.4	5	41	13.4	26.8	18.4	8.4
2010	Florida	112.2	59.8	4.4	42.4	13	24.8	17.8	7
2010	Georgia	104.4	54.6	4.8	37.4	12.4	25	18.4	6.6
2010	Hawaii	115.6	62.2	4.8	43.4	14	29.6	19.6	10
2010	Idaho								
2010	Illinois	102.6	52.8	4.8	34.6	13.4	26.2	17	9.2
2010	Indiana								
2010	Iowa	97.6	53.2	4.4	37.2	11.6	26.6	17.8	8.8
2010	Kansas								
2010	Kentucky	107.6	57.4	5	40.4	12	27.8	17.8	10
2010	Louisiana	106.2	56.8	4.8	39.8	12.2	25.4	17.2	8.2
2010	Maine	74	36	4.4	23.2	8.4	19	13.4	5.6
2010	Maryland	111.2	55.4	5	38	12.4	27.6	20	7.6
2010	Massachusetts	115.4	57.4	5	39	13.4	29	20	9
2010	Michigan	106.2	55.4	5	39.4	11	27.2	17.4	9.8
2010	Minnesota								
2010	Mississippi	80.4	48	3.6	35.8	8.6	19.6	12.8	6.8
2010	Missouri	74.4	39.4	4.2	26.8	8.4	18.4	14.4	4
2010	Montana	86	46.4	3.8	33.4	9.2	21.4	13.6	7.8
2010	Nebraska	75.8	33.2	3.8	22.2	7.2	22.8	15.6	7.2
2010	Nevada	108.6	59.8	4.8	41	14	26	16.8	9.2
2010	New Hampshire	80.4	42	4.8	26.6	10.6	20.6	14	6.6
2010	New Jersey	104	50.6	5	33.8	11.8	27.4	20	7.4
2010	New Mexico	88.2	49	4	34.6	10.4	20.2	13.6	6.6
2010	New York	108.4	54.8	5	39	10.8	28.6	19	9.6
2010	North Carolina	112	64.2	4.4	45	14.8	27.2	18.2	9
2010	North Dakota								
2010	Ohio	111	58.6	4.6	41.4	12.6	27.8	18	9.8
2010	Oklahoma	91.8	45.4	4.2	31.4	9.8	24.2	16	8.2
2010	Oregon								
2010	Pennsylvania	103.2	55.6	4.2	41	10.4	25.8	18.2	7.6
2010	Rhode Island	101.6	50	4.4	34	11.6	27.2	19.4	7.8
2010	South Carolina	102.8	64	4.8	44.6	14.6	26	17.2	8.8
2010	South Dakota								
2010	Tennessee	112	63.2	4.8	44.2	14.2	28.2	18.4	9.8
2010	Texas								
2010	Utah	82.8	42.8	3.4	30.6	8.8	21.4	17	4.4
2010	Vermont								
2010	Virginia								
2010	Washington	73.4	41.8	3	30.6	8.2	18.6	11.4	7.2
2010	West Virginia								
2010	Wisconsin	95.2	51.4	4.4	34.8	12.2	23.4	15.2	8.2
2010	Wyoming								

year	state	A3	A3_progress	A3_outcomes	B	B1	B1_consort	B1_standards	B2
2010	Alabama	11	2.6	8.4	43.2	24.2	20	4.2	9.2
2010	Alaska								
2010	Arizona	21.8	4.4	17.4	67	40	20	20	10
2010	Arkansas	23.6	4.8	18.8	69	40	20	20	10
2010	California	24	4.6	19.4	69.2	40	20	20	10
2010	Colorado	21.2	4.6	16.6	65.8	40	20	20	9.6
2010	Connecticut	20.8	4.4	16.4	68.4	40	20	20	10
2010	Delaware	26.8	4.6	22.2	68.8	39.8	20	19.8	9.6
2010	District of Columbia	26.8	4.6	22.2	68.4	40	20	20	10
2010	Florida	27.6	5	22.6	68.2	40	20	20	10
2010	Georgia	24.8	4.8	20	69.6	40	20	20	10
2010	Hawaii	23.8	4.4	19.4	69.2	39.6	19.6	20	10
2010	Idaho								
2010	Illinois	23.6	5	18.6	64.6	39.6	20	19.6	9.8
2010	Indiana								
2010	Iowa	17.8	4.8	13	69.6	40	20	20	10
2010	Kansas								
2010	Kentucky	22.4	4.2	18.2	67	40	20	20	9.8
2010	Louisiana	24	5	19	65.8	39.6	20	19.6	10
2010	Maine	19	3.8	15.2	60.2	38.2	20	18.2	9.8
2010	Maryland	28.2	5	23.2	69.8	40	20	20	9.8
2010	Massachusetts	29	5	24	69.8	40	20	20	10
2010	Michigan	23.6	4.8	18.8	67.6	40	20	20	10
2010	Minnesota								
2010	Mississippi	12.8	4.4	8.4	56.6	40	20	20	10
2010	Missouri	16.6	4	12.6	54.8	25	20	5	10
2010	Montana	18.2	2.8	15.4	44.8	20	20	0	10
2010	Nebraska	19.8	4.4	15.4	56.2	35.2	19.6	15.6	6
2010	Nevada	22.8	4.8	18	66.6	40	20	20	9.8
2010	New Hampshire	17.8	4.2	13.6	66.2	40	20	20	10
2010	New Jersey	26	4.8	21.2	69.2	40	20	20	10
2010	New Mexico	19	4.6	14.4	62.8	36.2	20	16.2	9.8
2010	New York	25	4.6	20.4	70	40	20	20	10
2010	North Carolina	20.6	4.6	16	68.4	40	20	20	10
2010	North Dakota								
2010	Ohio	24.6	4.6	20	68	40	20	20	10
2010	Oklahoma	22.2	4.8	17.4	64.8	40	20	20	10
2010	Oregon								
2010	Pennsylvania	21.8	4.4	17.4	68.8	40	20	20	10
2010	Rhode Island	24.4	5	19.4	70	40	20	20	10
2010	South Carolina	12.8	4.2	8.6	66.6	40	20	20	10
2010	South Dakota								
2010	Tennessee	20.6	4.8	15.8	68.4	40	20	20	9.8
2010	Texas								
2010	Utah	18.6	4.4	14.2	67	40	20	20	9.8
2010	Vermont								
2010	Virginia								
2010	Washington	13	3.8	9.2	47.6	25	20	5	9.8
2010	West Virginia								
2010	Wisconsin	20.4	4.6	15.8	65.6	39	20	19	10
2010	Wyoming								

year	state	B3	C	C1	C2	C3	D	D1	D2	D2_growth
2010	Alabama	9.8	32	20	2	10	38.8	1.6	13.2	2.6
2010	Alaska									
2010	Arizona	17	36.2	18	4.2	14	114.4	15	51.8	4.6
2010	Arkansas	19	44	24	4.6	15.4	101.6	15.8	44.2	5
2010	California	19.2	30.8	10	4.6	16.2	110.4	13	48.6	4.4
2010	Colorado	16.2	41.6	22	4.6	15	105.2	16.6	43.4	4.4
2010	Connecticut	18.4	27.4	10	3.6	13.8	88.6	19	30.2	2.6
2010	Delaware	19.4	47	24	5	18	119.2	17.2	50.4	4.4
2010	District of Columbia	18.4	35.4	14	4.6	16.8	117.8	20.2	54.2	5
2010	Florida	18.2	41.4	24	4	13.4	115.6	18.4	48	4
2010	Georgia	19.6	43.2	24	4.8	14.4	119.8	16.6	54.8	5
2010	Hawaii	19.6	43.6	22	5	16.6	122.4	13.8	54.6	4.8
2010	Idaho									
2010	Illinois	15.2	42.4	20.4	4.8	17.2	110.6	18.2	47.4	3.2
2010	Indiana									
2010	Iowa	19.6	36.6	18	5	13.6	95.4	15.2	41	3.4
2010	Kansas									
2010	Kentucky	17.2	43.2	22.4	4.4	16.4	113.2	18.2	48.2	4.6
2010	Louisiana	16.2	43.2	24	4.2	15	110.6	17	47.8	4.4
2010	Maine	12.2	33.2	22	3.8	7.4	51.8	5	25.6	1.6
2010	Maryland	20	40.8	20	5	15.8	126.2	19.8	53	5
2010	Massachusetts	19.8	44.4	24	5	15.4	126.8	21	53	4.6
2010	Michigan	17.6	34.2	18	4.2	12	77.2	5.2	41.4	4
2010	Minnesota									
2010	Mississippi	6.6	26.4	14	2.2	10.2	55.4	10.2	29.4	3.8
2010	Missouri	19.8	45.2	24	5	16.2	84.2	8.6	41	4.2
2010	Montana	14.8	22.4	12	2.6	7.8	54.6	14.6	20	3.8
2010	Nebraska	15	22.6	9.2	3	10.4	72	5.8	40.2	3.2
2010	Nevada	16.8	38	22	3.4	12.6	84.6	9.6	39	4.4
2010	New Hampshire	16.2	34.4	16	3.8	14.6	70.6	11.6	25.4	2.8
2010	New Jersey	19.2	31.4	14	4	13.4	124.4	17.2	53.6	4.2
2010	New Mexico	16.8	33.2	18.8	3.6	10.8	78.6	15.6	31.2	2.8
2010	New York	20	45.8	24	4.6	17.2	127.6	19.4	54.4	4.8
2010	North Carolina	18.4	40.4	21.6	4.8	14	116	18.2	50.8	4.6
2010	North Dakota									
2010	Ohio	18	37.2	18	5	14.2	119.6	15.4	54	3.6
2010	Oklahoma	14.8	31.2	16	3.8	11.4	106.4	13.4	47.8	4.2
2010	Oregon									
2010	Pennsylvania	18.8	45.2	24	4.8	16.4	95.4	10.4	45.2	3.4
2010	Rhode Island	20	46.8	24	5	17.8	119.6	16.8	50.2	4
2010	South Carolina	16.6	42.6	22.4	4.4	15.8	111.2	13.8	52.2	4.2
2010	South Dakota									
2010	Tennessee	18.6	43.6	24	4.8	14.8	114	15	53	5
2010	Texas									
2010	Utah	17.2	34	23.2	3.8	7	100.4	18.6	38.8	4
2010	Vermont									
2010	Virginia									
2010	Washington	12.8	41.8	24	3.8	14	59	14	19.6	1.4
2010	West Virginia									
2010	Wisconsin	16.6	38	19.6	4.4	14	82.2	19.2	25	2.8
2010	Wyoming									



year	state	D2_eval_process	D2_eval	D2_data_eval	D3	D3_eq_dist_schools	D3_eq_dist_subj	D4
2010	Alabama	4.6	2.2	3.8	5.8	2.4	3.4	7.4
2010	Alaska							
2010	Arizona	13.6	9	24.6	20	12.4	7.6	10.8
2010	Arkansas	11.8	7	20.4	17.2	8.4	8.8	10.6
2010	California	14.4	7.4	22.4	20.4	12.6	7.8	13.2
2010	Colorado	10.4	8.4	20.2	16.6	9	7.6	11.6
2010	Connecticut	9.4	6.8	11.4	17.4	10.2	7.2	7.4
2010	Delaware	12.8	9.2	24	21.2	12.4	8.8	11.4
2010	District of Columbia	13	9.2	27	19.2	12.2	7	9.8
2010	Florida	11.8	7.4	24.8	20	12.2	7.8	11.6
2010	Georgia	14	9.4	26.4	18.6	12	6.6	10.8
2010	Hawaii	13.8	10	26	23.6	14.4	9.2	11.6
2010	Idaho							
2010	Illinois	12.2	7.4	24.6	18.6	11.6	7	10.8
2010	Indiana							
2010	Iowa	12	8.4	17.2	18.2	11.4	6.8	6.6
2010	Kansas							
2010	Kentucky	10.4	8.8	24.4	15.8	9.4	6.4	12.8
2010	Louisiana	12.2	8.6	22.6	19.6	11.6	8	12.4
2010	Maine	7.4	4.6	12	7.6	5.2	2.4	4.6
2010	Maryland	15	8.4	24.6	22.4	13.6	8.8	12.2
2010	Massachusetts	15	9.2	24.2	23.2	13.8	9.4	12.6
2010	Michigan	12	7.8	17.6	12	8.6	3.4	6
2010	Minnesota							
2010	Mississippi	8.2	7.6	9.8	4.4	2.2	2.2	5
2010	Missouri	12.6	8.6	15.6	10	6.2	3.8	9.6
2010	Montana	6.4	2.8	7	8.6	5.4	3.2	4
2010	Nebraska	12.2	6.6	18.2	12.8	8.8	4	5
2010	Nevada	12.4	7.4	14.8	12.4	6.8	5.6	8
2010	New Hampshire	7.4	5	10.2	13.6	8.8	4.8	7.2
2010	New Jersey	14.8	9.4	25.2	22	13.4	8.6	13.6
2010	New Mexico	9.6	5.2	13.6	13.6	7.2	6.4	7.4
2010	New York	12.6	9	28	21.8	13	8.8	13.6
2010	North Carolina	13.8	9.6	22.8	19.2	11.6	7.6	10.6
2010	North Dakota							
2010	Ohio	14.8	8.6	27	19.8	11.6	8.2	11.8
2010	Oklahoma	12.6	8.8	22.2	18.8	11.4	7.4	11
2010	Oregon							
2010	Pennsylvania	13.8	8	20	16.8	10.2	6.6	9
2010	Rhode Island	10.6	9.6	26	22.8	13	9.8	12
2010	South Carolina	13.6	9.2	25.2	23.8	14	9.8	9.8
2010	South Dakota							
2010	Tennessee	13.6	10	24.4	18.4	10.2	8.2	12.6
2010	Texas							
2010	Utah	10.8	7.8	16.2	15.8	9.4	6.4	11
2010	Vermont							
2010	Virginia							
2010	Washington	7.4	5.2	5.6	11.2	7.2	4	5
2010	West Virginia							
2010	Wisconsin	5.6	4.4	12.2	18.4	10	8.4	7
2010	Wyoming							

year	state	D5	E	E1	E2	E2_turn_schools	E2_Support_lea
2010	Alabama	10.8	40.6	10	30.6	5	25.6
2010	Alaska						
2010	Arizona	16.8	47.4	10	37.4	5	32.4
2010	Arkansas	13.8	36.8	10	26.8	5	21.8
2010	California	15.2	45.8	10	35.8	4.8	31
2010	Colorado	17	43	10	33	5	28
2010	Connecticut	14.6	36.6	10	26.6	5	21.6
2010	Delaware	19	42.8	10	32.8	4.4	28.4
2010	District of Columbia	14.4	47.6	10	37.6	5	32.6
2010	Florida	17.6	47	10	37	4.8	32.2
2010	Georgia	19	48.2	10	38.2	5	33.2
2010	Hawaii	18.8	48.2	10	38.2	5	33.2
2010	Idaho						
2010	Illinois	15.6	46.4	10	36.4	5	31.4
2010	Indiana						
2010	Iowa	14.4	37.6	5	32.6	5	27.6
2010	Kansas						
2010	Kentucky	18.2	45.4	10	35.4	5	30.4
2010	Louisiana	13.8	44.8	5	39.8	4.8	35
2010	Maine	9	44.2	10	34.2	4.8	29.4
2010	Maryland	18.8	46.2	10	36.2	5	31.2
2010	Massachusetts	17	49.6	10	39.6	5	34.6
2010	Michigan	12.6	44.4	6	38.4	5	33.4
2010	Minnesota						
2010	Mississippi	6.4	20.2	10	10.2	5	5.2
2010	Missouri	15	38.8	10	28.8	5	23.8
2010	Montana	7.4	14.6	0	14.6	4.8	9.8
2010	Nebraska	8.2	35.4	5	30.4	4	26.4
2010	Nevada	15.6	45	10	35	5	30
2010	New Hampshire	12.8	45.6	10	35.6	5	30.6
2010	New Jersey	18	49	10	39	5	34
2010	New Mexico	10.8	37.8	10	27.8	5	22.8
2010	New York	18.4	47.8	10	37.8	5	32.8
2010	North Carolina	17.2	46.4	10	36.4	4.6	31.8
2010	North Dakota						
2010	Ohio	18.6	45	10	35	5	30
2010	Oklahoma	15.4	40.2	10	30.2	4.8	25.4
2010	Oregon						
2010	Pennsylvania	14	44	10	34	4.8	29.2
2010	Rhode Island	17.8	46.2	10	36.2	4.8	31.4
2010	South Carolina	11.6	46.4	10	36.4	5	31.4
2010	South Dakota						
2010	Tennessee	15	48	10	38	5	33
2010	Texas						
2010	Utah	16.2	35	10	25	5	20
2010	Vermont						
2010	Virginia						
2010	Washington	9.2	42	6	36	4.4	31.6
2010	West Virginia						
2010	Wisconsin	12.6	45.2	10	35.2	5	30.2
2010	Wyoming						

year	state	F	F1_funding	F2_conditions	F3_reforms	stem	Total	applied09
2010	Alabama	14.6	9.4	1.8	3.4	0	212	1
2010	Alaska							0
2010	Arizona	50	9.4	36.2	4.4	15	435.4	1
2010	Arkansas	28.4	6.6	18.8	3	15	389.2	1
2010	California	52.4	9	38.6	4.8	15	423.6	1
2010	Colorado	52	9.6	38.4	4	15	420.2	1
2010	Connecticut	47	7.8	36.6	2.6	15	379	1
2010	Delaware	42.4	7.6	31	3.8	15	454.6	1
2010	District of Columbia	52.8	9.6	39.4	3.8	15	450	1
2010	Florida	53	8.8	39.4	4.8	15	452.4	1
2010	Georgia	46.2	9.8	32.8	3.6	15	446.4	1
2010	Hawaii	48.4	9.8	33.8	4.8	15	462.4	1
2010	Idaho							1
2010	Illinois	45	9.6	30.4	5	15	426.6	1
2010	Indiana							1
2010	Iowa	46	8.6	34.6	2.8	0	382.8	1
2010	Kansas							1
2010	Kentucky	21	8.2	8	4.8	15	412.4	1
2010	Louisiana	48.4	9.6	35.8	3	15	434	1
2010	Maine	20	8.8	7	4.2	0	283.4	0
2010	Maryland	40.8	8.2	27.6	5	15	450	0
2010	Massachusetts	50	10	35.4	4.6	15	471	1
2010	Michigan	37	10	22	5	15	381.6	1
2010	Minnesota							1
2010	Mississippi	24.4	7.8	14.6	2	0	263.4	0
2010	Missouri	19	1.8	16.8	0.4	0	316.4	1
2010	Montana	16	8.8	3.8	3.4	0	238.4	0
2010	Nebraska	18.8	8.4	6.2	4.2	15	295.8	1
2010	Nevada	38.4	6.4	27	5	0	381.2	0
2010	New Hampshire	38	9.2	24.2	4.6	0	335.2	1
2010	New Jersey	44.8	3.4	37.4	4	15	437.8	1
2010	New Mexico	50.6	9.6	36.4	4.6	15	366.2	1
2010	New York	50.2	9.8	36	4.4	15	464.8	1
2010	North Carolina	43.4	9	29.6	4.8	15	441.6	1
2010	North Dakota							0
2010	Ohio	45	9.8	30.6	4.6	15	440.8	1
2010	Oklahoma	42.4	6.4	32	4	15	391.8	1
2010	Oregon							1
2010	Pennsylvania	46	9.2	32.2	4.6	15	417.6	1
2010	Rhode Island	52	10	37.6	4.4	15	451.2	1
2010	South Carolina	46.4	9.8	31.6	5	15	431	1
2010	South Dakota							1
2010	Tennessee	43.2	8.6	30	4.6	15	444.2	1
2010	Texas							0
2010	Utah	44.8	10	32	2.8	15	379	1
2010	Vermont							0
2010	Virginia							1
2010	Washington	11.8	7.2	0.8	3.8	15	290.6	0
2010	West Virginia							1
2010	Wisconsin	42.2	8.6	29	4.6	0	368.4	1
2010	Wyoming							1

## IRB Approval/Waiver

PRO-FY2017-275 - Admin Withdrawal: Not Human Subject Research - irb@memphis.edu



Institutional Review Board  
Office of Sponsored Programs  
University of Memphis  
315 Admin Bldg  
Memphis, TN 38152-3370

Jan 26, 2017

PI Name: Brian Brewer  
Co-Investigators:  
Advisor and/or Co-PI: Charisse Gulosino  
Submission Type: Admin Withdrawal  
Title: Analysis of the Race to the Top application scores with state demographic, economic, political and social data examining Race to the Top grant awards  
IRB ID: #PRO-FY2017-275

From the information provided on your determination review request for “Analysis of the Race to the Top application scores with state demographic, economic, political and social data examining Race to the Top grant awards”, the IRB has determined that your activity does not meet the Office of Human Subjects Research Protections definition of human subjects research and 45 CFR part 46 does not apply.

This study does not require IRB approval nor review. Your determination will be administratively withdrawn from Cayuse IRB and you will receive an email similar to this correspondence from irb@memphis.edu.

THANKS,  
IRB Administrator  
Research Compliance  
Division of Research & Sponsored Programs  
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[315 Administration Building](#)  
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