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The Influence of Highly Qualified Teacher Designation, and Other Teacher Variables, on Student Achievement

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THE INFLUENCE OF HIGHLY QUALIFIED TEACHER DESIGNATION, AND OTHER TEACHER VARIABLES, ON STUDENT ACHIEVEMENT

BY

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ABSTRACT

This study used regression analysis to consider the influence of teacher variables on student achievement in the curriculum content areas of language arts literacy and mathematics. Student achievement was measured as percents partially proficient, proficient, and advanced proficient on the New Jersey Assessment of Student Knowledge 4 (NJ ASK 4). Teacher variables were those identified by the New Jersey School Report Card - faculty attendance, three levels of faculty credentials, and faculty award of National Board Certification (NBC). The study also considered the influences of district factor group (DFG), New Jersey's designation for differentiation of relative socioeconomic environments, and instruction by highly qualified teacher (HQT), the recent teacher variable mandate of No Child Left Behind (NCLB). HQT has been given board policy and media recognition, however, the construct lacks substantial research investigation.

A stratified random sample of 585 schools was selected from the population of 1297 public elementary schools in New Jersey that include Grade 4 instruction. Percent of schools in each sub sample strata was consistent with percent of schools in each DFG. Subjects were all teachers and Grade 4 students in each of the sample schools. Data identified DFG as the only variable with consistent, significant influence on student achievement across and between curriculum areas. Faculty attendance, two levels of faculty credentials, bachelor and doctor, and instruction by HQT each contributed some significant, but relatively small, influences to student achievement. There values, however, were inconsistent across and between curriculum content areas.

Policy and research recommendations are made that integrate social, economic and political, as well as teacher, influences on student achievement.
ACKNOWLEDGEMENTS

This dissertation has one author and that author has a lifetime of contributors.

In the most recent years that have been my life work in progress, I have had Dr. Anthony Colletta as mentor, guide, and friend. He was my first professor at Seton Hall and my most memorable. Dr. Richard Heffich, my superintendent at the Oakland Public Schools, has set the standard of educational vision and professional strength. Dr. Heffich encouraged my application to a doctoral program; he always held me to high standards of professional and academic performance. Most of all, he is the very best professional friend. (Thank you for the clause in my contract than provided study days.) As principal of Valley Middle School, Dr. Christopher Lane set a leadership standard that changed the lives of children, families, and staff. I learned from him every day. I have waited half a lifetime for the gift of attending Seton Hall University.

Dr. Daniel Gutmore, my advisor and teacher, is the personification of Seton Hall.

Professional friends of twenty years lend to this cumulative life authorship.

Superintendents, Dr. Gerilyn Caprio and Mr. Anthony Blasco, were each models of educational leadership that advances student learning while respecting student autonomy. Educators that were dearest, and so very respected by me, have been some of my fellow child study team members. Grace Crane, Maria Kostas, Veronica Madigan, Margaret DeRogatis, Sondra Shapiro, Gail Lee, Candice Shanks, and Eileen Graham each has been a part of my career, my education, and my life. And Delonis Putt, Janice Martin, Jean Stuka, and Lucy Cappello, best known as the Director’s Club, my personal psychoanalysis association, gave me comradeship, humor and spirit.

As I have gone in and out of different years, times and learning, the constant has been Ron. He is my husband, companion, friend ... he is my life. To keep me on path he has raised
the children, made dinner, cleaned the house, and done the shopping and the laundry. As I leave the house each morning, he kisses my goodbye, than he reminds me not to forget the cup of tea that I left on the counter. Ron asked me to marry him on the night we met, thirty-seven years ago. Back then he said that instead of Mr. and Mrs., he wanted us to be Mr. and Dr. Cabezas ... Ron, this is for you.

THANKS GANG
DEDICATION

To Nicole ... She hangs the stars in the night sky.

To Melisa ... She shows the sun how to shine.

To Ron ... He keeps the world going around.

To Jesus Christ ... Watch over us all.
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CHAPTER I
INTRODUCTION

In our society issues of relevance are defined within parameters of dynamic social, economic and political climates. Achieving a framework of educational excellence in our schools for the benefit of our children is one such relevant issue. Since the 1960's, a decade of social, economic and political redefinition, educational excellence has become increasingly more prominent on the American political agenda. In 1965, amid declaration by President Lyndon Johnson of a "Great Society" and a "War on Poverty", the Elementary and Secondary Education Act (ESEA), Public Law 89-10 (1965), federal policy directing education, was ratified. The intent of Titles I and II of ESEA was to provide federal funds to improve the educational opportunities for culturally and economically deprived children (Kansas City Public Schools, 2003). To ensure states' compliance with philosophy and directives, ESEA shifted from the previous general funding formula to a categorical aid model. Under ESEA federal funding was awarded to states based on compliance of the local districts with the federal mandates contained in Titles I and II of ESEA. Ushered by the provision of categorical aid, federal policy entered the classroom (Spring, 1993) and established a comptroller relationship overseeing state departments of education, the autonomy of the local public schools and classroom instruction.
Both the national agenda and ESEA have evolved since 1965. Decades of social change, economic focus and politics, however, have not brought the promise of excellence to our schools. Unprecedented national attention was directed to the condition of American education in 1983 when the National Commission on Excellence in Education presented to President Reagan A Nation at Risk: The Imperative for Educational Reform (1983). This document put the nation’s schools on notice by reporting, “The educational foundation of our society is presently being eroded by a tide of mediocrity that threatens our very future as a Nation and a people” (p. 2). Based on the findings cited in this report, the Commission offered recommendations that included adoption of “rigorous and measurable standards” for student achievement, strengthened instructional content and increased professional standards for teachers (National Commission on Excellence in Education, 1983, Recommendation B: Standards and Expectations, para. 1).

Six years later, recognizing the continuing political environment of concern and the lack of measurable progress toward the recommendations made by the Commission, President George H. W. Bush convened a summit of the nation’s governors. He challenged them to define the parameters that would be necessary to restructure our at risk schools and to develop an educational system that would allow the American student to lead the world into the twenty-first century. With Governor William Clinton as the vice-chair, the National Governors Association penned Goals 2000 (Austin, 1994). This document reiterated, redefined and expanded the recommendations previously made by the National Commission on Excellence. Echoing A Nation at Risk, eight educational priorities of the governors were intended to provide “clear and rigorous standards”

Our schools will have the highest standards in the world, igniting the spark of possibility in the eyes of every girl and boy. And the doors of higher education will be open to all. The knowledge of the Information Age will be within reach of not just the few, but of every classroom, every library, every child. (Clinton, 1997, p. 2)

The millennium approaching; and, despite continuing public concern, establishment of a national committee, a summit of governors, presidential directives and cycles of ESEA policy reauthorizations, the bipartisan National Education Goals Panel reported that none of the initiatives established by Goals 2000, or the recommendations of the National Committee on Excellence, has been reached (Fiske, 1999). Federal policy had clearly not translated into student excellence. Less than one hour into the next presidency, George W. Bush also prioritized education in his inaugural address as he promised the electorate that "Together, we will reclaim America’s schools, before ignorance and apathy claim more young lives" (Bush, 2001, p. 2). One year later, on January 8, 2002, President Bush repeated the policy practices of previous presidents, signed a reauthorization of ESEA, and attempted to legislate the risk out of education.
This current version of ESEA, P.L. 107-110, generally referred to as No Child Left Behind (NCLB, 2002), is intended to add specificity to the previous requirements of standards and assessment and also to direct comprehensive education reform. Ambitious directives are presented under 10 titles and 1,076 sections. The stated purpose of NCLB is "to close the achievement gap with accountability" (NCLB, 2000, p. 1). Evoking the philosophy of both A Nation at Risk and Goals 2000, Title I of NCLB established the seminal directive of the legislation as accountability (New Jersey Department of Education, 2003a). Title II underscores the necessities of teacher quality and ongoing professional development as the foundations for achieving student accountability.

NCLB has established a national curriculum achievement accountability demand that is inclusive of 100% of the nation's student body with a target implementation date of 2014. To demonstrate this accountability, or progress toward accountability, each state is now required to measure the curriculum achievement of each student through annual statewide assessment. The directive for inclusion of all students is substantially broader than the initiatives previously intended by either the A Nation at Risk or Goals 2000. Under NCLB policy sub-groups of students formerly exempt from accountability by earlier authorizations of ESEA, the Americans with Disabilities Act (ADA, 1990) or Individuals with Disabilities in Education Act (IDEA, 1997) (e.g., racial/ethnic minorities, economically disadvantaged, limited English proficient and students with educational disabilities) are now included in the district aggregate for accountability. By establishing this more inclusive frame, NCLB has introduced significant policy consequences for all students as well as for social, economic and political stakeholders.
The state of New Jersey has its own social, economic and political history affecting educational policy. As early as 1975 the state legislature adopted the Public School Education Act (1975) intended to "prepare [children] to function politically, economically and socially in a democratic society (New Jersey Department of Education, 2003b, p. 11). Since enactment of the Public School Education Act standardized measure has become increasingly more evident as the venue for demonstration of students accountability in New Jersey's public schools. In 1981 the award of a high school diploma required a passing score on the Minimum Basic Skills Test in both reading and mathematics. In 1983, a more vigorous measure, the High School Proficiency Assessment (HSPA), replaced the Minimum Basic Skills Test as the standard for high school graduation. The Early Warning Test (EWT), administered in Grade 8, was introduced to direct curriculum planning and instructional placement for students as they approached high school. A move toward standardized curriculum, the New Jersey Core Curriculum Content Standards (NJCCCS), was adopted in 1996. The NJCCCS are now considered to be the blueprint (United States Department of Education, 2002b) for curriculum excellence in the state. The following year, with a statewide, standardized curriculum established, annual standardized assessment at targeted grades became part of New Jersey's educational profile. The Elementary School Proficiency Assessment (ESPA) measured curriculum achievement accountability at Grade 4. The Grade 8 Proficiency Assessment (GEPA) replaced the EWT, and the HSPA continued to be the standardized measure used to assess high school juniors throughout the state (New Jersey Department of Education, 2003b).
Initially, New Jersey approached the 2001 federal policy demand for curriculum achievement accountability with its previously established NJCCCS and the corresponding standardized assessments that were already established educational practice. By NCLB demand, however, the original standards are now considered vague and narrow. Revisions to these standards, including curriculum differentiation by narrow grade clusters, enriched content, and expanded depth and breadth of each curriculum area, were adopted in 2003 (Doolan, 2003) and again in 2004 (New Jersey Department of Education, 2004a). The New Jersey Assessment of Skills and Knowledge (NJ ASK) (New Jersey Department of Education, 2004d) was specifically developed to measure curriculum achievement proficiency of Grade 4 students (Doolan, 2003; New Jersey Department of Education, 2004d). The NJ ASK has replaced the ESPA. In the 2003-2004 school year, the NJ ASK format was expanded to also include assessment of Grade 3 students (NJ ASK 3 and NJ ASK 4). The New Jersey Department of Education (NJDOE) has announced the 2005-2006 introduction of the New Jersey Proficiency Assessment of State Standards (NJ PASS). NJ PASS will be administered in grades 5, 6 and 7. The achievement of Grade 8 and Grade 11 students continues to be measured by the GEPA and the HSPA (United States Department of Education National Center for Education Statistics, 2003). Three directives predicate the implementation of the NJ ASK, the GEPA and the HSPA. First, these assessments must be valid and reliable measures of the NJCCCS at their respective grade levels. Second, assessment participation must minimally include 95% of each subgroup of students. Third, accommodations must be developed for qualified limited English proficient and special education populations of students.
Table 1

<table>
<thead>
<tr>
<th>Year</th>
<th>Grade 4</th>
<th>Grade 8</th>
<th>Grade 11</th>
<th>Grade 4</th>
<th>Grade 8</th>
<th>Grade 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lang Arts</td>
<td>68%</td>
<td>75%</td>
<td>82%</td>
<td>91%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>58%</td>
<td>66%</td>
<td>76%</td>
<td>87%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>73%</td>
<td>79%</td>
<td>85%</td>
<td>92%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Math</td>
<td>53%</td>
<td>62%</td>
<td>73%</td>
<td>83%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>39%</td>
<td>49%</td>
<td>62%</td>
<td>79%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>55%</td>
<td>64%</td>
<td>74%</td>
<td>86%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Beginning in the 2001–2002 school year, federal policy required each school to demonstrate incremental Adequate Yearly Progress (AYP) toward that goal of proficient curriculum achievement accountability for 100% of all students in the state. Table 1 presents the minimum scores, established by the NJDOE, required at each grade and for each subject to demonstrate expected AYP.

The policy directive of NCLB mandates schools that do not demonstrate AYP to be identified as at risk and subject to sanctions. These sanctions significantly impact broad levels of stakeholders and the sanctions incrementally increase with the number of years that the school continually fails to demonstrate AYP toward intended accountability. The first year that a school is identified as at risk, that school must develop a 2-year improvement plan. Students in the district are given the option to transfer to another, better performing school in that district. If a school continues to be
at risk for 3 consecutive years, provision of supplemental educational services becomes an additional sanction. A list of private supplemental educational providers must be made available to parents. The district is to assume all costs for these private educational services. Schools with 4 consecutive years of at risk determination will also be required to implement corrective actions that may include replacement of staff or revisions to curriculum. Schools that do not achieve accountability standards for 5 consecutive years will be identified for restructuring, a consequence that could result in alternate governance – state takeover or private management (New Jersey Department of Education, 2003a).

On January 31, 2003 documentation of the state’s accountability process, in the form of the Consolidated State Application, was submitted to the United States Department of Education (USDOE). The Application was revised on April 14 and the final submission date was April 30, 2003. Through this Application, the NJDOE provided assurances that a final policy of educational accountability had been developed by the NJDOE and approved by the State Legislature (United States Department of Education, 2002b). Referencing NJCCCS and the corresponding assessments, the Application assured that a single accountability system has been designed to measure student achievement in all schools and that no child in the state of New Jersey will be left behind. The NJDOE summarizes the philosophy of the 670 page NCLB document, and the focus of the State of New Jersey as this policy impacts on student achievement:

EVERY child can learn rigorous standards
EVERY child is expected to learn
EVERY school must demonstrate whether or not EVERY child is learning the standards.

EVERY district must demonstrate that EVERY school is meeting the standards.

(Doolan, 2003, slide 2)

Two policy directives of NCLB intended to affect student achievement are the provisions for highly qualified teacher (HQT) and the requirement of on-going professional development for certified instructional staff. NCLB is the first federal policy establishing mandates of HQT and professional development as contingencies for federal funding. Title I Part A, Section 1119 and the corresponding regulation 200.56 prescribes pre-certification credentials that ensure the provision of HQT. The components of this credentials directive include combinations of completion of a professional program, certification, and state assessment. Each of these components is content knowledge based. Research-based evidence has identified multiple criteria affecting teacher quality. NCLB, however, focuses on a single criterion, demonstration of content knowledge, as the qualification for designation as HQT.

The USDOE has embraced the HQT provision of NCLB. In a press release highlighting the Department’s position, former Secretary of Education, Rodkey Paige, lauded, “President Bush and I recognize that the highly qualified teacher requirements of the landmark, bipartisan No Child Left Behind Act are some of the law’s most important provisions” (United States Department of Education, 2003, p 1). In support of the USDOE commitment to the requirement, in that same press release, Secretary Paige introduced an extensive network of supports to assist states in meeting the HQT requirement. This network included the Teacher Assistance Corps, a panel of “experts,
researchers and practitioners\textsuperscript{4} (p. 1) to provide guidance and feedback in efforts toward compliance with the HQT requirement. The What Works Clearinghouse was introduced as new research-based collaborative for best practice in professional excellence. Publication of A Toolkit for Teachers was intended to be a user friendly clarification of iCLB and related materials to assist all teachers in achieving highly qualified status. Update of Guidance was targeted at specific levels of teaching professionals including middle school, rural and veteran teachers. Other supports identified broader levels of stakeholders. Collaboration and communication including multi-levels of stakeholders was encouraged to stimulate discussion, guidance and technical assistance. It was the position of former Secretary Paige that these initiatives would result in innovative projects developed by concerned stakeholders, including the American Board for Certification of Teacher Excellence, and for the benefit of advancement of programs for teachers (United States Department of Education, 2003).

Guided by a strong statement of endorsement from former Secretary Paige, and in compliance with the federal NCLB policy, New Jersey proceeded to develop a state policy to define and establish provisions for designation of HQT. New Jersey's policy initially required that by the 2005-2006 school year all teachers must achieve HQT designation. Designation would be successfully demonstrated by award of a bachelor's degree (minimum), receipt of full certification or license by the NJDOE, with no requirements waived, and demonstration of proficient content knowledge in core academic content area(s) of assigned instruction.

At the elementary level there is a generic qualification of elementary generalist. At middle and high school levels qualification is subject specific: language arts literacy,
math, science, social studies, visual and performing arts, and world languages.

Competence as an elementary generalist, or in subject specific areas, requires attainment of a bachelor's degree with a major in a core subject area, or a graduate degree, or holding a national certificate, and a proficient score on a "rigorous state test of content knowledge" (i.e., the Praxis) (New Jersey Department of Education, 2003i, p. 11). Teachers unable to qualify using these standards could achieve HQT designation by completing the High Objective Uniform State Standard of Evaluation (HOUSSE) (Librera, 2003) achieved by accruing points on a content matrix. In subsequent years the title of this matrix evaluation was changed to the High Objective Uniform State Evaluation (HOUSE).

Original policy recognized limited circumstances that would allow exceptions to the HQT requirement. Emergency certification could be considered for bilingual or English as second language instructors and for teachers of the handicapped. Substitute certification could also be considered for these areas of instruction without attainment of full certification.

As the 2003-2004 school year commenced each district began the process of collecting documentation from staff and determining individual teacher eligibility for HQT. Failure of a teacher to meet the criteria in the 2003-2004 school year would not result in loss of employment contract. An instructional supervisor could require continual progress, with prescribed time parameters, as part of the Professional Development Plan (PDP), for a teacher who failed to achieve highly qualified designation that school year (New Jersey Department of Education, 2003f).
As documentation collection proceeded, however, compliance for specific categories of districts, and subject areas of instruction, was not being met. It was apparent the strict HQT compliance parameters of NCLB placed small and rural school districts at disadvantage (United States Department of Education, 2004a). Many teachers in rural districts instruct in multiple content areas and could not achieve HQT designation in each content area. Policy revisions were introduced. Teachers demonstrating HQT designation in at least one content area were allowed an additional 3 years to achieve HQT status in other content areas of instruction. A revision was also made for teachers instructing in more than one field of science. Amended policy allowed qualification in science as a “broad field” or by individual science areas, i.e., biology, chemistry or physics (United States Department of Education, 2004). In February 2004 all districts were required to complete and submit to the NJDOE the Highly Qualified Teacher Survey. This survey was used to provide baseline data, establish annual targets and assess yearly progress toward intended 100% qualification of all teachers by school year 2005-2006.

NCLB establishes a narrow parameter, focusing on content knowledge, as the criterion for HQT (Southeast Center for Teaching Quality, 2005). The broad intent of the policy, however, is not only to implement high quality standards for teacher qualification, but also to require on-going professional development to maintain a quality teaching force. To meet the policy definition for high quality professional development, and be eligible for Title II funding, NCLB goes beyond the narrow content knowledge criterion determined for HQT to also include improving practices for behavioral interventions and strategies for advancing instruction for students with learning disabilities or limited
English proficiency. The common practice of one day workshops is not valued by the new definition of professional development. Models that include intense training sessions and follow-up activities requiring application of theory in the classroom (New Jersey Department of Education, 2003h) replaced the one day workshop. Participation in a one day workshop would only be considered part of high quality professional development when that workshop contributes to broader and more inclusive training experiences (United States Department of Education, 2003). To this end the new paradigm of professional development would encourage collaborative exchanges between teachers and administrators, consider the needs of all students, develop teacher strategies for positive behavior management, support parent participation in the education of their children, and give teachers the foundation knowledge necessary to review assessments and interpret data. The directed outcome of each of these activities is improved student academic achievement (United States Department of Education, 2002a). Funds for professional development are provided through Title II, Part A, Subpart 5, Section C. States may make application for available funds through submission of Improving Teacher Quality Grants.

New Jersey adopted a professional development policy initiative prior to the NCLB directive. In 1998 the NJDOE implemented a statewide mandate for on-going professional development. On May 6th of that year the New Jersey State Board of Education adopted the Required Professional Development for Teachers Regulations (N.J.A.C. 6:11-13). These regulations established the Professional Teaching Standards Board (PTSB), 12 standards for professional development and a directive for all certified staff to complete and document a minimum of 100 professional development hours every
5 years. General categories that qualify as professional development are identified in 
statue: formal course work, seminars, curriculum development, activities of professional 
enhancement (e.g., mentoring or committee participation), and independent professional 
study (National Board for Professional Teaching Standards, 2003).

Since ratification of NCLB the language of the state’s professional development 
directives has complied with federal policy. New Jersey now defines high quality 
professional development in language that addresses improved teaching proficiency and 
advanced student learning (New Jersey Department of Education, 2003e). The mission 
statement of PTSB reflects NCLB philosophical intent, to advance student achievement 
through standards-based, quality professional development (National Board for 
Professional Teaching Standards, 2004b). As documentation of on-going identification 
and implementation of quality, including in-service professional development programs, 
each district is required to annually submit to the NJDOE a Professional Development 
Plan. This plan is to include the district profile, review of the Plan from the previous 
year, a survey of current needs, a statement of goals and vision, identification of 
professional development activities, and evaluation of professional development within 
the district (New Jersey Department of Education, 2003g).

The relationship between teacher quality and student achievement appears to be 
intuitive. A 50 year progression of federal and state policies assuming the value of this 
relationship, and reflecting changing social, economic and political environments, 
however, has not replaced intuition with evidence that validates this relationship. 
NCLB’s mandate for HQT also assumes a relationship between teacher quality and 
student achievement. It defines student achievement as a measure of standardized
assessment: it defines HQT as a measure of content knowledge. A judgment of NCLB will be the demonstrated values of these assumptions and definitions.

Statement of the Problem

ESEA, A Nation at Risk, Goals 2000, and NCLB share a common philosophy for advancement of quality education for the nation’s children. Each presents similar recommendations to address student achievement and teacher quality. These recommendations, focused on establishing measurable and vigorous standards of achievement, development of substantial curriculum content, and advanced levels of professional qualifications, appear to be self-evident. Their intuitive nature has enjoyed wide philosophical acceptance by the education community. But philosophical acceptance is not substantiated outcomes. Quality education for all our children continues to be illusive.

NCLB initiates policy demand beyond ESEA, A Nation at Risk or Goals 2000. For the first time student achievement accountability is not only quantified, it is established at the all-inclusive demand of 100%. Contributing to the attainment of this level of achievement accountability is the requirement that only HQTs educate all students. This federal policy focuses on a single variable, mastery of curriculum content, to establish a narrow criterion for HQT designation (Librera, 2003). Other variables, also identified by research-based evidence, however, are not identified in federal or state policy requirements. In compliance with federal policy demand that 100% of students will demonstrate achievement accountability, New Jersey has adopted state policy identifying a standardized curriculum and a corresponding sequence of standardized assessments that are used to measure AYP toward this demand. New Jersey has also
adopted state policy prescribing documentation of curriculum content mastery for designation of HQT. To maintain teacher excellence following demonstration of HQT status, New Jersey has established a definition of, and procedure for, on-going professional development.

Unfortunately, results of statewide assessments – NJ ASK, ESPA, GEPA, and HSPA - have not been promising. In the 2003-2004 school year, the second year of reporting accountability, 254 schools in New Jersey failed to demonstrate AYP compliancy and were considered in need of improvement (New Jersey Department of Education, 2003b). That same school year, while 254 schools were identified as in need of improvement, the NJDOE reported that their first survey found 96.3% of teachers in the state met the HQT criteria (New Jersey Department of Education, 2005). Although our teachers achieved the HQT standard, our schools continued to fail. Many schools that previously struggled with underachievement, and schools that have historically enjoyed a perception as advantaged, together, now share the warning of at-risk and are facing sanctions. These sanctions, ranging from development of an improvement plan to alternate governance, present significant consequences for students and educators as well as social, economic and political stakeholders. Critically, these sanctions can affect the future of public education as it is currently provided. There is an apparent discord between number of teachers with HQT designation, the level of AYP demonstrated by schools in New Jersey, and the achievement accountability demand established by federal policy. Given the significant implications for all stakeholders, considerations by the USDOE and NJDOE should be:

a. Why have so many schools failed to meet the achievement standard set by NCLB?
b. Is there a relationship between student achievement and instruction by HQT, as HQT is currently defined by federal and state policies?

c. Does the NCLB’s narrow criterion, mastery of content knowledge, fully address the research-based evidence and include all of the elements necessary to define a highly qualified teacher?

Purpose of the Study and Research Questions

The purpose of this study is to investigate the influence of teacher variables on student curriculum content achievement. The targeted variables are identified by the New Jersey School Report Card (New Jersey Department of Education, 2004e). These identified teacher variables are faculty attendance rate, faculty credentials, award of National Board Certification (NBC), and attainment of HQT designation as defined by NCLB. Student achievement will be measured as a function of performance on the NJ ASK 4 in the curriculum content areas of language arts literacy and mathematics. All data will be quantified by examination of pre-existing NJDOE documents. Specifically, this study will address the following research questions:

1. When controlling for DFG, what is the influence of the faculty variables identified by the New Jersey School Report Card on student achievement at the partially proficient level, in language arts literacy, as measured by the NJ ASK 4?

2. When controlling for DFG and faculty variables identified by the New Jersey School Report Card, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the partially proficient level, in language arts literacy, as measured by the NJ ASK 4?
3. When controlling for DFG, what is the influence of the faculty variables identified by the *New Jersey School Report Card* on student achievement at the proficient level, in language arts literacy, as measured by the NJ ASK 4?

4. When controlling for DFG and other teacher variables identified by the *New Jersey School Report Card*, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the proficient level, in language arts literacy, as measured by the NJ ASK 4?

5. When controlling for DFG, what is the influence of the teacher variables identified by the *New Jersey School Report Card* on student achievement at the advanced proficient level, in language arts literacy, as measured by the NJ ASK 4?

6. When controlling for DFG and other teacher variables identified by the *New Jersey School Report Card*, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the advanced proficient level, in language arts literacy, as measured by the NJ ASK 4?

7. When controlling for DFG, what is the influence of the faculty variables identified by the *New Jersey School Report Card* on student achievement at the partially proficient level, in mathematics, as measured by the NJ ASK 4?

8. When controlling for DFG and faculty variables identified by the *New Jersey School Report Card*, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the partially proficient level, in mathematics, as measured by the NJ ASK 4?
9. When controlling for DFG, what is the influence of the faculty variables identified by the New Jersey School Report Card on student achievement at the proficient level, in mathematics, as measured by the NJ ASK 4?

10. When controlling for DFG and faculty variables identified by the New Jersey School Report Card, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the proficient level, in mathematics, as measured by the NJ ASK 4?

11. When controlling for DFG, what is the influence of the faculty variables identified by the New Jersey School Report Card on student achievement at the advanced proficient level, in mathematics, as measured by the NJ ASK 4?

12. When controlling for DFG and faculty variables identified by the New Jersey School Report Card, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the advanced proficient level, in mathematics, as measured by the NJ ASK 4?

The NJDOE holds that student socioeconomic status (SES) affects educational outcomes. It has, therefore, developed the system of district factor grouping (DFG) to rank schools according to an identified series of SES determinants. Data released by the NJDOE is regularly grouped by, and makes comparisons between, districts of like DFG (New Jersey Department of Education, 2005). Consistent with the NJDOE practice, the effect of DFG will be considered on the outcome of this study.

The resulting findings and outcomes of this research are intended to contribute to a cumulative body of knowledge supporting future policy development. That policy development can advance teacher preparation programs, professional development and
teacher quality. Policy development in these venues is assumed to have coincidental
effects on student achievement, social equity, judicious use of financial resources and
political agenda for the advancement of education.

Hypotheses

The presented purpose of this study, and the twelve contributing research
questions, are the foundations of hypothesis #1 through hypothesis #12.

Hypothesis #1. When controlling for DFG, the faculty variables identified by the
New Jersey School Report Card do not have a significant influence on student
achievement at the partially proficient level, in language arts literacy, as measured by the
NJ ASK 4.

Hypothesis #2. When controlling for DFG and faculty variables identified by the
New Jersey School Report Card, designation of highly qualified teacher, as defined by
NCLB, does not have a significant influence on student achievement at the partially
proficient level, in language arts literacy, as measured by the
NJ ASK 4.

Hypothesis #3. When controlling for DFG, the faculty variables identified by the
New Jersey School Report Card do not have a significant influence on student
achievement at the proficient level, in language arts literacy, as measured by the NJ ASK
4.

Hypothesis #4. When controlling for DFG and faculty variables identified by the
New Jersey School Report Card, designation of highly qualified teacher, as defined by
NCLB, does not have a significant influence on student achievement at the proficient
level, in language arts literacy, as measured by the NJ ASK 4.
Hypothesis #5. When controlling for DFG, the faculty variables identified by the New Jersey School Report Card do not have a significant influence on student achievement at the advanced proficient level, in language arts literacy, as measured by the NJ ASK 4.

Hypothesis #6. When controlling for DFG and faculty variables identified by the New Jersey School Report Card, designation of highly qualified teacher, as defined by NCLB, does not have a significant influence on student achievement at the advanced proficient level, in language arts literacy, as measured by the NJ ASK 4.

Hypothesis #7. When controlling for DFG, the faculty variables identified by the New Jersey School Report Card do not have a significant influence on student achievement at the partially proficient level, in mathematics, as measured by the NJ ASK 4.

Hypothesis #8. When controlling for DFG and faculty variables identified by the New Jersey School Report Card, designation of highly qualified teacher, as defined by NCLB, does not have a significant influence on student achievement at the partially proficient level, in mathematics, as measured by the NJ ASK 4.

Hypothesis #9. When controlling for DFG, the faculty variables identified by the New Jersey School Report Card do not have a significant influence on student achievement at the proficient level, in mathematics, as measured by the NJ ASK 4.

Hypothesis #10. When controlling for DFG and faculty variables identified by the New Jersey School Report Card, designation of highly qualified teacher, as defined
by NCLB, does not have a significant influence on student achievement at the proficient level, in mathematics, as measured by the NJ ASK 4.

Hypothesis #11. When controlling for DFG, the faculty variables identified by the New Jersey School Report Card do not have a significant influence on student achievement at the advanced proficient level, in mathematics, as measured by the NJ ASK 4.

Hypothesis #12. When controlling for DFG and faculty variables identified by the New Jersey School Report Card, designation of highly qualified teacher, as defined by NCLB, does not have a significant influence on student achievement at the advanced proficient level, in mathematics, as measured by the NJ ASK 4.

Significance of the Study

This importance of this study is to investigate the value of targeted teacher variables identified by the New Jersey School Report Card, including HQT, as defined by NCLB, as predictors of student achievement. The policy implementation of NCLB has raised social, economic and political stakes for education. The direction of education and the autonomy of our public schools are at risk. Exacting social equity in the classroom, NCLB goes beyond access, the mandated standard of ADA and IDEA, and also demands accountability for all students including sub-populations of minority and disabled students. Broad social equity is expensive. The inclusive NCLB achievement compliance demand is 100%; NCLB financial appropriation, however, is far less inclusive. State and local budgets must address the remaining substantial finances needed to implement the policy directives intended to contribute to student achievement accountability.
Concern for funding is further heightened by issues of school governance.
District boards of education are disturbed by NCLB sanctions that are considered to be
"exceedingly punitive, including diversion of public resources to non-public providers
and agencies, reconstitution of school, privatization of school management, removal of
staff and state takeovers" (Bosworth, 2003, p. 3). The impact of these social and
economic issues and multi-interest stakeholders is not without notice. Blocks of
stakeholders with conflicting educational interests now drive political agendas.

ESEA, A Nation At-Risk and Goals 2000 each identified educational objectives.
The resulting efforts that were made by schools did not satisfy the intent of these
initiatives. NCLB shares social, economic and political histories with each of these
educational directives. Lacking quantification of the value of HQT, as defined by NCLB,
on student achievement, NCLB may also share a history of failure with ESEA, A Nation

The intent of this study is advancement of student achievement. As a society we
have spent the last half-century talking about our social, economic and political concerns
for improving education. These concerns, however, have not succeeded in substantial
academic excellence. At the end of the twentieth century assessment conducted by the
National Center for Education Statistics indicated that as a nation less than 40% of our
students could read on grade level. Mathematics achievement was lower with less than
25% percent of the national student body demonstrating on-grade achievement (United

With the 1965 adoption of ESEA, and categorical funding, federal policy entered
every public school classroom. The current authorization has the stated design intent of
"sweeping" (New Jersey Department of Education, 2003c) reform and redefinition of education. Student curriculum achievement accountability is now the seminal measurement of educational value. The intent of this study is not to provide a judgment of NCLB, rather it is to examine the value of one of the variables defined by NCLB, HQT, and the influence that this teacher variable may have on student achievement. Of particular concern is the narrow criterion of content mastery used to determine HQT designation.

It is important to note that the NCLB definition of highly qualified teacher is based solely on attainment of specific credentials that will soon be required of all teachers by the federal government. It has little to do with the quality of a teacher’s performance in the classroom. (New Jersey Department of Education, 2005, p. 1)

A review of the literature would include content mastery as one variable of a multi-criteria profile of variables contributing to a valid definition of HQT. NCLB recognizes the value of content mastery, however, it fails to address other research-based indicators.

Research is just beginning to examine the social, economic and policy outcomes of NCLB. Data quantifying percent of classes instructed by highly qualified teachers was reported as "not available" on New Jersey State Report Card 2002. In December 2003 The Education Trust reported the availability of basic information about HQTs can "provide schools, parents and policymakers with state-specific baseline measure of critical elements of each state's K-12 educational system" (Barth et al., 2003, p.1). It also concluded, "...many teachers have not been adequately prepared...This is what makes
collecting teacher quality data such a critical step…What states need is good data so they can channel those resources where they are most needed” (Barth et al., 2003, p. 1).

The NJDOE has recently adopted new policy for professional licensure. In a summary review of N.J.A.C. 6A-9, Professional Licensure and Standards (New Jersey Department of Education, 2004c), the NJDOE cited heightened concern for the demands of NCLB and teacher preparation. To that end the new standards are intended to provide the State with a professional teaching cohort that will effect both improved teaching and student performance standards (New Jersey Department of Education, 2003d). Although in development of these standards, the NJDOE had a stated purpose of considering the impact of NCLB, absent data examining the relationship between student achievement and HQT, their consideration may have been premature.

All outcomes of this research are intended to contribute to a cumulative body of knowledge supporting future policy development. That policy development can advance teacher quality, teacher preparation programs and professional development. Policy development in these venues is assumed to have coincidental effects on student achievement, social equity, judicious use of financial resources and political agenda for the advancement of education.

Definition of Terms

Annual Yearly Progress (AYP): State defined annual incremental advancement toward attainment of 100% student curriculum achievement accountability, in compliance with NCLB policy, to be accomplished by the 2013-2014 school year.
At Risk: NCLB designation for schools that have failed to demonstrate AYP and are subject to sanctions.

District Factor Grouping (DFG): An eight-point scale implemented by the NJDOE to indicate relative socioeconomic status of local school districts. Contributors include percent of non-high school graduate adults, percent of college graduates, occupation, population density, income, unemployment levels, and poverty rates.

Faculty Attendance Rate: This is a percentile representing the average daily attendance for faculty. It is a calculation resulting from dividing total number of days in attendance by total number of contracted days for the full faculty of each school. This data will be collected from the New Jersey School Report Card. For the purposes of this study faculty attendance rate and teacher attendance rate are equivalent terms.

Faculty Credentials: Faculty credentials will be reported in percentiles representing the total number of teaching staff who held a bachelor's, master's or doctoral degree, respectively. This data will be collected from the New Jersey School Report Card. For the purposes of this study faculty credentials and teacher credentials are equivalent terms.

Highly Qualified Teacher (HQT): The NCLB mandated designation for teachers achieved by demonstration of content knowledge criterion. Requirements established by NJDOE are: bachelor's degree (minimum education), valid teaching certificate awarded by the NJDOE (no requirements waived), and mastery level content knowledge demonstrated for each core academic subject that the teacher will instruct.

National Board Certification (NBC): This percentile will represent the number of staff in a school who has been awarded certification from the National Board for
Professional Teaching Standards. This data will be collected from the New Jersey School Report Card.

New Jersey Assessment of Student Knowledge 4 (NJ ASK 4): The standardized assessment designed to measure students' achievement, at the benchmark Grade 4 year, in language arts literacy, mathematics and science. The NJ ASK 4 is a standards-referenced assessment, a variation of criterion-referenced assessment. The New Jersey Core Content Curriculum Standards are the criterion of achievement for the NJ ASK 4.

New Jersey Core Content Curriculum Standards (NJCCCS): The state-wide standard of achievement, developed by the NJDOE, intended to define achievement for all students in New Jersey. The NJCCCS identifies what students should know and be able to do as the result of their public education. Benchmark years for assessment of student progress are Grades 4, 8 and 11.

New Jersey School Report Card: Introduced by legislative mandate in 1995, the New Jersey School Report Card is intended to provide the public with information on each of the state's public schools. Data is reported in the following fields: school environment, student information, student performance indicators, staff information, and district financial data.

Student Achievement: For the purposes of this study student achievement is defined as a function of the standardized test score achieved on the NJ ASK 4 in language arts literacy and mathematics. This variable is differentiated by partially proficient, proficient, and advanced proficient levels. This data will be collected from the New Jersey School Report Card.
Teacher Variables: The teacher variables used as the independent variables in this study are those identified by the New Jersey School Report Card as faculty variables: faculty attendance rate, faculty level of credentials – bachelor, master’s, or doctoral degree –, NBC and HQT designation.

Delimitations of the Study

Students and schools are fluid systems with inherent change and limitations to research. Some of the variables affecting the outcome of this research are:

1. This research study is limited to schools in the state of New Jersey.
2. This research study is limited to the number of schools that will report requested data.
3. This research study is limited to review of student achievement at the Grade 4 benchmark.
4. This research study is limited to review of student achievement in the areas of language arts literacy and mathematics.
5. This research study is limited by scope of data collected by the NJDOE.
6. This research study used pre-existing data and was limited to the veracity and accuracy of the reporter.
7. This research study will use pre-existing data and is subject to collection bias that may have been introduced.
8. This research study is limited to the theoretical framework and methodology selected by the researcher.
Significant Influences in Study Development

It is the purpose of this research to begin a substantive investigation of the influence of HQT, as defined by NCLB, on student curriculum content achievement in the state of New Jersey. Relevant contributors to this investigation are federal policy, federal and state legal decisions, and previous national and state research considering the influence of teacher variables on student achievement. This chapter addressed the most relevant federal report and policies—*A Nation at Risk, Goals 2000, ESEA* and its reauthorizations including the current federal mandate, NCLB— that have contributed to the construct, HQT. The seminal adjudications that will be presented, at the federal level, are *Brown v. Board of Education* (1954), and New Jersey State cases, *Robinson v. Cahill* (1972, 1973, 1975, 1976), and *Abbott v. Burke* (1985, 1990, 1994, 1997, 1998, 2000a, 2000b, 2002a, 2002b, June 2003, July 2003). Although there has been considerable research investigating a breadth of teacher variables, agreement on the relative predictive value of each, and what defines teacher quality, continues to be disputed. A historical review of profiles of quality teachers (Crueckshank & Haefele, 2001) included many variables not addressed by NCLP definition. When specific variables have been identified for study - faculty attendance, level of faculty credentials, and advanced certifications - researchers have failed to agree on the relative value of each as a determinant of student achievement. A formative challenge to the value of the teacher was first made by Coleman (1966) when he determined socioeconomic status (SES), not the teacher, to be the most influential determinant of student achievement. The more recent works of Anyon (1995, 1997) and Berliner (2005) continue to validate Coleman’s position. Opposing socioeconomic status as the seminal determinant of student
achievement, a persuasive endorsement supporting the value of the teacher has been made by Sanders and Rivers (1996). Some research outcomes appear to reflect the subjective position of the investigator rather than the objective value of the teacher variable. Researchers, L. Darling-Hammond (Darling-Hammond, 2001; Darling-Hammond & Sykes, 1993, 2003; Darling-Hammond & Youngs, 2002) and K. Walsh (2001), have assumed opposing, and highly critical, positions on the value of the certification and levels of teacher credentials. Former Secretary of Education C. Finn has presented strong opposition to the use of standardized assessment as a measure of student achievement and to the construct validity of the teacher credentials (Finn & Kanstroom, 2000). The only investigations of the advanced certification, NBC, have been made in states with vested interest in NBC (Amrein-Beardsley, Berliner, & Vandevoort, 2004; Cavalluzzo, 2004; Dethlefs et al., 2001; Goldhaber & Anthony, 2004). Although the NJDOE maintains an official position of support for NBC it does not provide teachers with the professional or financial incentives to gain certification that are offered by other states. Only 50 teachers in the state of New Jersey currently hold NBC.

One of the more influential studies contributing to the development of this investigation was the work of A. P. Michel (2004). In a study of similar research design, Michel considered the influence of several fields from the New Jersey School Report Card on student curriculum content achievement. Michel’s research, however, occurred one year prior to the publication of HQT data for teachers in the state of New Jersey. Consistent with her position of validation for teaching credentials, Darling-Hammond has reviewed previous research based study of teacher quality and his made suggestions of her own (Darling-Hammond & Sykes, 2003; Darling-Hammond & Youngs, 2002).
While the influence of the construct, HQT, lacks substantial research investigation, data from a recently completed study by P. W. Tuerk (2005) did demonstrated an inverse relationship between level of poverty and both student achievement and student access to instruction by HQT. With foundation in the works of both Michel and Tuerk, this current research will focus on the single New Jersey School Report Card field, staff information, and introduce investigation of the influence of the construct, HQT, on student achievement in New Jersey.

Organization of the Study

This study is presented in a traditional, five chapter organization. Chapter I provides an overview of the study including introduction, statement of the problem, purpose of the study and research questions, hypotheses, significance of the study, definitions, delimitations of the study and organization of the study. Chapter II is a systematic review of previous studies examining the historical, as well as current, perspectives on standardized assessment as a measure of student achievement, socioeconomic status, differentiated profiles of teachers, the New Jersey School Report Card and targeted teacher variables: faculty attendance rate, faculty credentials; award of NJC and award of HQT status as defined by NCLB. Chapter III identifies the methodology used in this study. It contains an introduction, data sources, data sample, data analysis tool, data collection and data analysis method. Chapter IV provides an analysis of the data. A discussion of model building, analysis of the variance in student achievement at each of the three proficiency levels, strength of each of the independent variables, and a summary of the results of each of the models is provided for the curriculum content areas of language arts literacy and mathematics. Chapter V presents
the conclusions and recommendations based on the outcomes of this investigation. The reader will find a summary of the research design, a review of the findings and interpretations, a summary of the findings for each independent variable – faculty attendance, faculty credentials, faculty NBC, faculty HQT designation – recommendations for policy and future research, and caveats.
CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this study is to investigate the influence of teacher variables on student achievement. For the purposes of this investigation, student achievement is measured as a function of performance on the NJ ASK 4 in the areas of language arts literacy and mathematics. The teacher variables are identified by the New Jersey School Report Card. These identified teacher variables are faculty attendance rate, faculty credentials, award of NBC and attainment of HQT designation as defined by NCLB. This literature review systematically considered relevant knowledge gained from previous research examining student achievement and teacher variables. This chapter includes the investigation of historical, as well as current, perspectives on standardized assessment as a measure of student achievement. When reviewing the teacher as a variable of student achievement, ten prototypes, each identified as a contributor to professional excellence, as well as the targeted teacher variables included in the New Jersey Report Card, were addressed. Primary and secondary sources of information reviewed and contained in this chapter and the other chapters of this study include letters, newspaper articles, Internet sites, Excel spreadsheets, PowerPoint presentations, government publications, professional reports, professional journals – including peer-reviewed journals, dissertations, books, statistical studies, and local, state and federal policies. Information was collected by study of written documents, attendance at presentation given by the author, or written or verbal communication with the sources.
Standardized Assessment

_Historical Perspective_

The history of standardized assessment as a measure of achievement dates back to ancient civilizations. Selective testing, an antecedent of standardized assessment, first appeared in historical writings around 2200 B.C. The ancient Chinese used a form of proficiency testing as a component of qualification for government service. The Chinese model persisted and evolved through the centuries. It is believed to have been the precursor of European systems of qualification for civil service and, later, educational access (Glaser & Silver, 1994). Selective assessment rather than birth order, the more common historical qualification for access to societies most valued institutions, was the method of student selection used by some of history’s most noted scholars and teachers: Alcuin (England, 8th century), Joan Celis (Netherlands 14th century), and the Jesuit ‘Ratio Studiorum’ (16th century) (Wilbrink, 1995). Universities, considered to be one of the oldest institutions in the western world, are subject to this history of selective assessment that they have inherited.

The university is an institution over 8 centuries old. This institution has strong traditions, among them traditions of assessment. It follows that the history of assessment is a prerequisite for a better understanding of today’s assessment practices. The long tradition indicates that these assessment practices will be highly resistant to change; they are embedded in Western intellectual culture. (Wilbrink, 1995, p. 4)

Events in turn of the century France led to the introduction of standardized assessment and achievement accountability in grade school. Parisian officials challenged
the researcher, Alfred Binet, to develop a measure to predict which young students were predetermined for school success. The assessment Binet developed, based on psychometric measure, became the accepted determinant of intelligence potential. This early twentieth century work of Binet continues to have an impact on world wide perception of intelligence and its measure. Prior to the work of Alfred Binet, assessment of intelligence was assumed to be intuitive. Given psychometric foundation, intelligence was now considered to be quantifiable (Gardner, 1993).

Binet's work (as cited in Gardner, 1993) on quantification of intelligence was accepted and embraced by American educators. America was quickly changing from the little school house model to education for the masses. Increasing numbers of European immigrants and compulsory school laws stressed the educational system. Broad diversity among these additional populations of students challenged educators. Referencing educational equity and social justice, selective testing became the venue of identification of students for differentiated levels of classroom instruction.

As the twentieth century progressed standardized assessment became common practice in the American classroom experience. Predicated by the 1965 Elementary and Secondary Education Act (ESEA) and categorical funding, federal public education policy focused on student achievement accountability. Ten years later P.L. 94-142, the Education for All Handicapped Children Act (1975), expanded educational access to populations of students with disabilities. In different ways, standardized assessment has been integral to the federal policy progression of both general and special education populations. While standardized assessment has increasingly become the criteria for general education achievement accountability, its primary application in special
education had been determination of student eligibility, or access, for services. The broad
and pervasion requirement of NCLB, that all students – general education and special
education - will have both access and accountability, has unified federal policy direction
for general and special education. As the decades have progressed and the policies have
evolved, the federal call for measurable and vigorous standards has become synonymous
with achievement accountability by standardized assessment. Standardized assessment is
now the high-stakes measure of education for all populations of public school students,
teachers and local districts.

Current Perspective

Federal direction over the last forty years - ESEA in 1965, A Nation at Risk
repeatedly and increasingly set a demand for student achievement accountability to be
determined by standardized assessment. As the role of standardized assessment in
education has escalated, so has the debate addressing the appropriateness of this high-
stakes judgment of student achievement. Researchers on each side of the debate present
persuasive arguments.

Twenty-five years ago Guba and Lincoln’s (1981) published their judgment of
standardized assessment as the measure of change in student performance and a
contributor in the decision making process for future instruction. Ten years later Luijten
(1991) provided support for Guba and Lincoln’s finding. In the article, The Pressure
Cooker in Education: Standardized Assessment and High-Stakes, Agrey (2004) reviewed
this earlier research and presented an assessment philosophy identifying standardized
testing as "indispensable for encouraging" serious commitment to learning by students and instruction by teachers.

Cross and Joffes (1997) added to the call for standardized assessment by identifying positive outcomes of the practice. They reported that standardized assessment sets clear and high expectations, holding both students and teachers accountable, and advancing educational equity. They concluded that the practice of standardized assessment was a reliable measure of student progress. The later work of Heubert and Hauser (1999) recognized these earlier perspectives, and also considered the high stakes impact on student promotion, graduation and scholarship determinants. The researchers considered that the high stakes nature of standardized assessment lends to dedication of the teachers and the students. These researchers further postulated that this high stakes nature also imposes a value on test taking that advances both student achievement and the public interest.

Semas (2001) later presented standardized assessment as a litmus test for coordination of curriculum and instruction. Semas's work was published in 2001, just one year before the authorization of NCLB and federal demand for 100% curriculum achievement accountability as measured by standardized assessment.

The case against standardized assessment, as the defining measure of student achievement, is equally well presented. Opponents argue that student achievement should be a measure independent of standardized assessment, that the imposition of standardized assessment by administration is counterproductive without the agreement and support of the broader school community. An outspoken critic against broad application of standardized assessment is Chester Finn, the former Assistant Secretary of
Education under President Reagan. Finn considers lack of standard is current high stakes standardized testing. He challenges the validity of one assessment methodology to meet the diverse needs of 50 autonomous states, with 15,000 local and regional districts, upward of 100,000 individual schools, 5 million staff and 50 million students (Finn & Kanstroom, 2000).

Criticism of standardized assessment includes the unprecedented instructional time dedicated to preparation and administration of standardized assessments and what this form of assessment actually measures. Are students 'taught to the test' has become an unsettling question for all levels of educational stakeholders. Curricula and instruction are now designed with consideration given to the impact of standardized scores. Conversely, standardized assessment has become a measure of the curriculum that it has generated. This manner of assessment does not provide a judgment of a student's insight, creativity or reflection. Rather, it is a statement of level of agreement between an assessment measure and the specific curriculum that has spawned that measure. Opponents considered that a federal mandate for standardized assessment that is not federally funded and does not share common parameters of both curriculum and measurement between states can not be implemented or regulated.

The seminal question is expressed in the title of Donlevy's article, The Dilemma of High Stakes Testing: What is School For? (Donlevy, 2000). Donlevy considered the negative effects of standardized assessment on instruction, students, and teachers. He concluded that standardized assessment resulted in instruction assuming a singular dimension, mastery of the appointed curriculum. Instructional efforts to achieve high scores on standardized assessment restrained the teacher reflection on student individual
educational strengths and needs. Student creativity, exploration, and imagination were subjugated to getting through the curriculum. Secondary negative outcomes for teachers and students, alike, were demonstrated. Qualified teachers were found to be more likely to resign from the profession as they recognized the reality of standardized instruction and curriculum over individualized education. Students, the group identified to receive benefit from standardized assessments, had identified secondary negative effects that included increased anxiety, diminished self-esteem, and increased identification as at-risk learners (Linn & Gronlund, 2000).

Notably, the historical rational for standardized assessment, educational equity and social justice, has also received challenge. Darling-Hammond (Darling-Hammond & Sykes 1993) voiced racial, ethnic and political biases as outcomes of wide spread use of standardized assessment. She began by describing Binet’s historical, interpreted inequities in performance on IQ tests between select populations. He presumed these differences to demonstrate a natural inequity in intelligence between races, ethnic and political groups, and gender. His personal biases were revealed by his select revision to the 1916 standardization population results. Responses to the items included in this assessment suggested Whites to be smarter than Blacks, higher socio-economic groups to have greater intelligence than lower groups, urban students to be brighter than rural students, and girls to have higher IQs than boys. Binet revised the test items to correct for the one apparent misrepresentation, that boys are smarter than girls.

Research investigations published subsequent to Darling-Hammond’s criticism continue to lend evidence to the position that standardized measures are biased to minorities and other subsets of student populations (Kohn, 1999, 2000a, 2000b).
Forty years of implementation and research of the effect of standardized assessment as the measure of student achievement in our modern schools have not adequately provided a judgment of the value of the process. Research has generated as many questions as answers. Investigators have provided any number of conflicting outcomes and ... "there is evidence to support claims that any or none of these things may be true" (Borsuk, 2001, p. 2) found evidence to support, and other evidence to negate, both the benefits and detriments of high stakes, standardized assessment.

The current reform movement assumes "all children can learn and that schools control the factors necessary to assure student mastery of a rigorous core curriculum" (Hertel & Teague, 2003). The New Jersey School Report Card presents student achievement relative to school, student and teacher variables. Past researchers have extensively, and more conclusively, investigated school and student variables. This study will proceed to investigate the effect of teacher variables on student achievement as measured by standardized assessment. A critical focus of this investigation will be on the construct, HQT. HQT is a current mandate of NCLB, the most recent teacher variable to be added to the New Jersey School Report Card. As this is the first year that the NJDOE has collected and published data identifying percentages for teachers with HQT designation and percentages of classes instructed by teachers with HQT designation, this construct lacks the judgment of substantial research based evidence.

Socioeconomic Status

The influence of socioeconomic determinants on student achievement has legal and research precedent. Brown v. Board of Education established precedent at the Supreme Court level in 1954 when Chief Justice Earl Warren voiced "the doctrine of
'separate but equal' has no place in just, public education" (as cited in American Civil Liberties Union, 2006, p. 1). With this assertion, American education acknowledged social inequity in its schools.

The courts of the State of New Jersey have traditionally attempted to address social inequity in education through formula funding. New Jersey Superior Court, by the Robinson v. Cakill (1972) finding, determined excessive inequity in educational outcomes for the children of New Jersey. The Court commented on the apparent discord between high local taxes and under-funded local schools. The Court severely chastised the practice of local control, the autonomous method of school governance preferred by the majority of New Jersey school districts. It was assailed by the Court as a system of inherent inequity, perpetuating an unfair class system within New Jersey schools.

A decade later rhetoric remained stronger than outcomes. Disparity in student achievement between different socioeconomic communities continued to grow. In 1981 under the class action title of Abbott v. Burke, the Rutgers University Law Center represented by Marilyn Moreheuser, challenged the state funding formula. The original settlement (1985) awarded $4.2 billion in state aid to the 28 districts then represented. An additional $25 million was designated for discretionary use by the state commissioner of education. Since this original decision ten additional adjudications (Abbott v. Burke, 1990,1994,1997,1998, 2000a, 2000b, 2002a, 2002b, June 2003, July 2003) have been heard, each continuing the award of parity funding to each of the now 30 districts that have come to be collectively known as the Abbots. Eleven law suits, twenty-five years, and multi-millions of dollars later, student achievement in the Abbots, however,
continues to remain below the achievement levels of students living and being educated in more affluent communities.

Research findings from national and state investigations do not fully support New Jersey's legal standing of attempting to mediate student underachievement, which is influenced by socioeconomic differences, by parity funding directly to the schools. The 1966 Coleman Report (Coleman, 1966), investigating 600,000 children and 4,000 schools in varied socioeconomic communities, found similarities between curriculum, teachers and schools attended by the majority of students. Gaps in school readiness and underachievement in primary grades, however, were identified for minority students. Achievement outcomes for minority children continued to decline through high school. Coleman concluded it was the socioeconomic environment outside the school, not conditions within the school, which ultimately determined student (under)achievement outcomes. Subsequent rational investigations, including research by the Civil Rights Commission and Sandia National Laboratories, have lent support to Coleman's findings. Forty years after its release, a powerful endorsement of the Coleman Report comes from D. Berliner (2005). Summarizing data from research investigations and other sources, Berliner concludes ... "that poverty restricts the expression of genetic talent at the lower end of the socioeconomic scale. Among the lowest social classes environmental factors, particularly family and neighborhood influences, not genetics, is strongly associated with academic performance" (p. 1).

Other research conducted within the state of New Jersey identified issues broader than the parity school funding position of the New Jersey Supreme Court. Following extensive research and personal experiences in one of the Abbott districts, J. Anson's
(1995, 1997) writings were highly critical of reform efforts... “It has become increasingly clear that several decades of educational reform have failed to bring substantial improvement to schools in America’s inner cities.” (1995, p.1). Further, Anyon identifies “isolated educational, regulatory, or financial aspects of reform from the social context of poverty and race” (1995, p. 1) as prohibitive of true reform.

Other researchers have considered the elements of success evidenced by the Abbotts. In 2000, Gutmore and Walker (2000) released results of their system-wide survey of the Abbotts. In their summarized findings the authors identified leadership, teacher professionalism, and a culture of caring to be evidenced in the Abbott districts studied. The authors concluded parity funding alone, however, is not sufficient, rather...

“Strengthening the link between community and school and tapping into the resources both materially and symbolically that exist in the communities should be pursued” (p. 12).

The Teacher as a Variable of Student Achievement

Profiles of Teachers

The effect of the teacher as a determinant of student performance has been the subject of research investigation. Following their study of the Tennessee Value-Added Assessment System, Sanders and Horn concluded:

The effectiveness of the teacher is the major determinant of student academic progress. Teacher effects on student achievement have been found to be both additive and cumulative with little evidence that subsequent effective teachers can offset the effects of ineffective ones (Sanders & Horn, 1998).
While Sanders and Horn added to the evidence of previous study (Jordan, Mendro, & Weersinghe, 1997; McLean & Sanders, 1984; Sanders & Rivers, 1996), the resulting cumulative body of evidence has not provided a definitive or quantifiable definition of an effective teacher.

Research outcomes by other investigators described teachers by multiple definitions. A historical review of the evolution of 10 definers of effective teachers was presented in the work of Cruickshank and Haefele (2001). In the 1950's school administrators and college faculty considered checklists of personal attributes to be an appropriate measure of the ideal teacher. Dwight Beecher and Arvil Barr (as cited in Cruickshank & Haefele, 2001) developed two of the more popular checklists of that time. The Teaching Evaluation Record, developed by Dwight Beecher, rated teacher traits including: professional attitude, sensitivity to students, understanding of students, behavior management, creativity and student participation. Early the following decade, Barr expanded the attributes used by Beecher to include buoyancy, emotional stability, personal ethics, and charisma as part of the ideal teacher check list profile. Although Beecher and Barr brought attention to the need for defining the ideal teacher, the arbitrary nature of these traits and subjective criteria for judgment did little to establish a quantifiable determination of an ideal teacher.

As subjective rating of teacher traits fell into disfavor, the concept of analytic teacher gained acceptance. The analytic teacher systematically reflected on, and recorded, his/her classroom practices. A popular protocol for recording reflection was the Flanders System of Interational Analysis. Teachers were encouraged to improve
instructional practice based upon this self-analysis. This format, however, was an intensive, tedious activity that was soon rejected by teachers.

When the Coleman Report (Coleman, 1966) discounted teacher effect and identified student socioeconomic background to be the most significant determinant of student achievement, educational researchers became energized. Setting out to disprove this finding of the Coleman Report and to define teachers' professional worth, Rosenshine and Furst (as cited in Cruickshank, 1990) conducted a series of studies using test scores to identify teachers whose students consistently achieved higher scores than control group students. They considered these teachers to be outliers or effective teachers. Common characteristics of effective teachers included teachers who clearly defined student expectation, who accepted individual student characteristics, and who supported student initiatives. The effective teacher was also consistently monitoring learning, and had the ability to both engage and challenge students. Rosenshine and Furst used multiple studies to support their results. Validity of their methods and conclusion, however, has been challenged by subsequent investigators.

The Rosenshine and Furst (as cited in Cruickshank, 1990) construct of effective teacher was critically examined as schools increasingly accepted standardized assessment as the measure of student achievement. Their construct of effective teacher, and standardized assessment as the measure of student achievement, focused on the outcome of instruction. Process was not a variable in the equation. Curriculum and instruction were more often directed toward the assessment tool, not broader definitions of learning. Standardized assessment effectively reduced teacher quality and student achievement to a paper and pencil test score.
As Rosenhine and Furst were studying the relationship of effective teacher characteristics on student outcomes, other researchers were considering the role of the teacher as defined by performance of the tasks inherent in their job description. Research investigating the dutiful teacher explored knowledge of content within the instructional area, instructional delivery, facility for development of assessments, determination of grades, support and encouragement of student learning, and professional service (Scriven, 1990).

Determining teacher characteristics or performance of tasks within job description to be narrow in scope, other researchers considered broader areas of process attributes that defined the competent teacher. In 1972 Dodl, DIfner, Becker, Halstead, Jung, Nelson, Pirution and Wegele (Dodl et al., 1972) published a catalogue of teacher competencies that included lesson plans, instructional practices, student achievement monitoring, communication skills and facility for administrative tasks. This early identification of competencies areas established the foundation for expectation of high academic knowledge and profession application for teachers.

Following the release of the 1983 A Nation at Risk, teachers, as a professional community, assumed greater self-reflection. Definitions of ideals, analysis, effect, duty and competence were paled in the shadow of the daunting language ... "a tide of mediocrity" (National Commission on Excellence in Education, p. 1) ... used in the report to describe the educational foundation of our society. Academic scholars looked to dissuade the image of teacher mediocrity and establish a level of teacher professional expertise. This expert teacher exemplified the teaching profession by being well versed in his/her discipline and having the ability to readily use knowledge in an instructional
format. The expert teacher was well organized intellectually and instrucationally. This organization resulted in maximum use of instructional time and activities. Finally, the expert teacher was an expert problem solver. Teaching was an evolving and dynamic process. Expert judgment was part of the process (Horvath & Sternberg, 1995).

Research at Ohio State University in the latter part of the 1970’s identified a profile of teacher that has come to be known as the reflective teacher. Considering teaching an art and a science, the reflective teacher was a perpetual student of teaching (Cruickshank, 1991). The reflective teacher was introspective, attempting to modify and improve his/her own professionalism by application of what s/he learned about teaching. Self-modification and self-improvement resulted through on-going self-study, and by reading professional journals, biographies and autobiographies of acclaimed teachers.

In the article, Seeking Customer Satisfaction, (Janner, 1997) Janner described still another teacher profile, the satisfying teacher. The satisfying teacher considered excellence to be a judgment of how well s/he pleased stakeholders including students, parents and school administrators. The school district of Rochester, New York identified the satisfying teacher by having parents complete a rating profile that included teacher traits such as optimism, clarity and accessibility. This rating system was reminiscent of the check lists designed by Beecher and Barr to assist in identification of the ideal teacher. Scales to identify both the ideal teacher and the satisfying teacher were subjective. While stakeholders may acknowledge traits that they subjectively consider to be ideal or satisfying, research evidence has not identified a significant relationship between subjective traits and good instructions (Cruickshank & Haefele, 2001).
While the intent of the satisfying teacher was to please as many different stakeholders as possible, the diversity-specific teacher targeted a single stakeholder population. Some of the more common populations of students instructed by diversity-specific teachers would be bilingual, special education, or culturally different children. Diversity-specific teachers targeted their lesson plans, instructional presentation, methods and activities toward a limited, identified profile of student. Diversity-specific teachers recognized that their students' differences affect areas of their lives both in and out of the classroom. It was common for the diversity-specific teacher to consider his/her role to extend beyond the school and into the community.

The profile of respected teacher was researched and presented by Richard Traina (Traina, 1999). Traina identified the three qualities that Americans most respected in teachers: expertise in subject, caring for the child, and exemplary personal character. Secondary traits identified were honesty, fairness, and selflessness. As with the ideal teacher and the satisfying teacher profiles, there was subjective quality to the determination of respected teacher. Teachers in this category would include LouAnne Johnson, Jaime Escalante and Marva Collings.

The New Jersey School Report Card

The New Jersey School Report Card was developed and introduced in 1995. It is an instrument designed to provide educational stakeholders with pertinent data about each of New Jersey's local schools. Each school is issued an individual Report Card. Data is presented in fields profiling school environment, student performance indicators, student information, staff information and district financial data. The inclusion of each of these fields on the Report Card implies value attributed to that field by the NJDOE.
Providing research-based evidence of the value of each field is beyond the parameter of this study. School environment, student information, and district financial data are variables that have been the subject of substantial research and are without change on the Report Card. They will not be readdressed by this study. This was the first year, however, that the variable HQT was included in the file, staff information. Substantial research investigating the predictive value of instruction by a HQT on student achievement, however, has not yet occurred. It is intended that data collected from this research will contribute to a determination of the value of HQT as a predictor of student achievement.

Teacher Variables

The influence of targeted teacher variables identified by the New Jersey School Report Card - faculty attendance rate, level of faculty academic degree, award of NBC, and designation of HQT as defined by NCLB - on student achievement, as measured by the NJ ASK, will be investigated in this study.

Faculty Attendance

The inclusion of faculty attendance rate in the New Jersey School Report Card presumed a value of faculty attendance as a predictor of student success. This presumption was consistent with the theories of learning and developmental psychology attributed to Jean Piaget. Piaget's philosophy valued the organization of the external environment as a contributor to the learning experience (Piaget, 1957). Piaget considered an interruption in the external environment to be an interruption in the learning experience. The introduction of a substitute teacher is a change in the external environment and a disruption to the learning experience.
Research investigation has been presented examining the effects of a substitute teacher on student learning. The New York Metropolitan School Study Council Report (New York State Office of Educational Performance Review, 1974) cited research suggesting that instruction by a substitute teacher was significantly less effective than instruction delivered by the regular classroom teacher. This ineffectiveness was a result of a perception of ambiguity on the part of students, teachers and administrators when a substitute teacher was introduced to the established classroom environment.

Piaget’s theory was also supported by Elliott’s learning model of student-teacher interaction (Elliott, 1979). Elliott reported that when either the student or the teacher was not available for instruction, there was a negative impact on learning. In 1981, several years after Elliott presented his learning model, Lewis (1981) reported that annually 75,000,000 hours of student-teacher interaction were lost due to teacher absenteeism. Lewis also noted that these lost hours were disproportionately higher in urban districts. When combined with other negative variables inherent in many urban districts, the impact of teacher absenteeism on student achievement has greater negative effects.

Other research conducted throughout the 1970s further explained the effects of substitute instruction on student learning. In 1977, Manlove and Elliott (1977) concluded that faculty attendance affected the overall school performance. Using a rating scale of dimensions of school performance, the authors demonstrated an inverse relationship between both academic performance and administrative productivity, and the percent of faculty absenteeism. The following year, the Pennsylvania School Board Association (Pennsylvania School Board Association Inc., 1978) cited the lack of continuity inherent in substitute instruction as a contributor to ineffective instruction.
In the 1980's, however, research investigation addressing faculty attendance changed focus, typically considering the financial impact of substitute instruction on a school budget. While this research contributed to development of fiscal policy, it did not consider the impact of faculty attendance on student achievement. In 1991 Ehrenberg, Ehrenberg, Ehrenberg, and Rees (1991) did investigate faculty attendance as a predictor of student achievement. Although Ehrenberg, et al. can be credited with readdressing this important topic, their method of data collection has met challenge. Their results were considered to be inconclusive and do not contribute to cumulative, research-based knowledge of the subject.

Mantagno and Woods (1997) reviewed the limited works of earlier investigators. They summarized the effects of faculty attendance, identifying impact on both student achievement and school budget. They presented the critical outcome of their study to be the importance of continuity of instruction by the classroom teacher. "When a qualified educator is absent from the classroom, student achievement is negatively affected. Teachers are the educational leaders in the classroom and their roles cannot be compromised" (Mantagno & Woods, 1997, p. 314).

A Flash Research Report, published by the New York City Public School Division of Assessment and Accountability, appeared to contradict the finding of Mantango and Woods. The report presented a regression analysis used to determine the variance in student achievement that could be explained by a series of variables including, but not limited to, teacher absence rate. In Key Findings the report concluded, "Teacher attendance does not add to the explanation of test scores" (New York State Office of Educational Performance Review, 1974, p. 1).
A recent dissertation presented by P. A. Michel, a doctoral candidate at Seton Hall University, also used multiple regression to investigate the effect of identified variables on student achievement (Michel, 2004). Specifically, Michel used model building to examine the predictive value of fields identified by the New Jersey School Report Card on achievement as a measure of NJ ASK 4. Michel concluded that faculty attendance rate was not a statistically significant determinant of student achievement as measured by the NJ ASK 4.

Research conducted throughout the 1970's failed to establish a statistically significant relationship between student achievement and faculty attendance. The more current works of Eberberg, et al, Mantango and Woods, Michel and studies conducted by the New York City Public Schools also presented inconsistent and contradictory findings. Final judgment of the value of faculty attendance as a predictor of student achievement remains to be determined.

*Faculty Credentials*

There is intuitive perception, and research-based evidence, that there is a quality teacher preparation effectiveness improved student learning (Wenglinsky, 2000). The question of what qualities define a well prepared teacher, however, continues to be debated and researched. Each state has adopted a version of certification or licensure requirements. Yet each state's award of certification generally requires specific undergraduate or graduate level course work. In the state of New Jersey, following completion of course work, teacher competency is typically assessed by the Educational Testing Service (ETS). The first ETS test, or Praxis I, is an assessment of basic skills. The second ETS test, the Praxis II, considers content area specific knowledge.
Depending on the state, an emergency or provisional certificate may be awarded when a candidate does not meet all requirements of full certification.

When college coursework specific to teacher credentials is lacking, a candidate may be awarded certification via alternate route. Alternate route was designed to attract candidates from outside of the teaching profession to enter teaching service without meeting all academic requirements. Alternate route typically requires a bachelor's degree, competency assessment and prescribed classroom preparation. Teach for America is a currently popular alternate venue for access to the teaching profession. Through this competitive program, non-certified, high-achieving, liberal arts graduates may be awarded instructional positions, most often in troubled urban or rural schools. Categories of schools that can not attract traditionally prepared teachers support recruitment of staff from alternate programs. There is, however, a growing body of evidence suggesting that the careers of non-traditionally trained teachers are relatively short lived (Fletcher, Luque, & Raymond, 2001; Fowler, 2002). Researchers are now beginning to investigate the wisdom of investing financial resources and temporal efforts into staff who will likely not remain in the profession.

Using the paper and pencil format of the Praxis has been questioned as a valid assessment of teacher effectiveness. In a well-designed study, Laczkto and Berliner (2001) matched emergency certified and regularly certified teachers in the same urban school or school district by grade of instruction and academic degree attained. Using this model, the authors selected a sample of 23 pairs of teachers for study during the 1998-1999 school year and 29 pairs of teachers for study during the 1999-2000 school year. Student achievement was measured by the Stanford Achievement Test-Version 9.
Correlated t-tests were used to interpret the data: the Normal Curve Equivalent (NCE) scale was used to report results. In the 1998-1999 school year students instructed by certified teachers outperformed the students taught by non-certified teachers by 14 NCE points in reading. The following year the students instructed by certified teachers repeated the significant gain, this time achieving 9 points higher than their counterparts. Laczko and Berliner calculated this out-performance was the equivalent of 0.50 standard deviation or 5 months grade equivalent growth in reading.

The content areas of mathematics and language arts also benefited from instruction by a certified teacher. In mathematics the students instructed by certified teachers achieved higher scores, 2.5 months in grade-equivalent, than their cohort instructed by non-certified staff. In language arts the achievement discrepancy was larger, 4 months grade equivalent. “Other things equal, students of regularly licensed teachers achieve at higher levels than students of emergency certified teachers” (Glass, 2002, p. 13).

Researchers studying the New York City public school also concluded that:
Teacher certification is related to student outcomes; the correlations are both statistically significant and educationally meaningful. At the school level, higher percentages of certified teachers are positively related to the percentage of students showing high achievement in reading and mathematics, and inversely related to the percentage showing low achievement (New York State Office of Educational Performance Review, 1974, p.3)

As an outcome of this study, researchers are now investigating the impact of certified teachers on student achievement at the classroom level.
Not all researchers, however, share agreement on the value of certification. Chester Finn and Marci Kanstroom (2000) argued that attention to teacher credentials, rather than student performance, is a flawed process. They rebuked the position of support for certification specifically challenging the work of researcher, Linda Darling-Hammond, executive director of the National Commission on Teaching and America's Future (NCTAF). They argued that the regulatory proposals supported by Darling-Hammond “continue down this failed path of regulating teacher inputs (credentials) rather than teacher outputs (student performance)” (Finn & Kanstroom, 2000, p. 1).

Supporting the argument against the rigors of certification, Walsh wrote “A particularly unfortunate consequence of certification is that it is counterproductive, discouraging those individuals who are more likely to produce greater student achievement from entering the profession” (Walsh, 2001, p. 8). Referencing the works of Lutz and Hutton, Bradshaw and Hawk, Stodart, Bliss, Miller, McKenna and McKenna, Goldhaber and Brewer, and Raymond (as cited in Walsh, 2001), she concluded, “New teachers who are certified do not produce greater student gains than new teachers who are not certified” (p. 8).

Walsh argued that both the NCTAF and the National Council on the Accreditation of Education (NCATE) were biased in their support for the certification requirement. Criticizing the support for certification as intuitive, rather than research-based, Walsh criticized, “The theory that teacher certification leads to teacher quality is predicated more on what we think ought to be true than on controlled experimentation. It is a leap of faith taken without benefit of support” (Walsh, 2001, p.15). Walsh rebuked the work
of Darling-Hammond and NCATE, charging that Darling-Hammond’s conclusions were flawed by selectivity, inaccurate evidence, absence of evidence, misleading citation, lack of peer review, invalid measurement, questionable methodology and statistical errors.

Darling-Hammond has responded to the Abell Foundation Report, the document that stated Walsh’s findings, as “a stunning exercise in misrepresentation” (Darling-Hammond, 2001, p. 1.). Darling-Hammond counter-charged that the flawed research that Walsh cited supporting the benefits of certification “more aptly describes her (Walsh’s) paper, which consistently misrepresents the statements of researchers, the findings of studies, and the evidence base for her claims” (p. 3). Validating her response, Darling-Hammond proceeded to criticize each of the seven studies that were contained within the Abell Foundation Report. Darling-Hammond asserted that six of the studies did not support Walsh’s interpretation. She further charged that five of the studies actually supported the value of teacher certification. Five of the studies used alternative certification, not non-certificated teachers, as a variable. Three of the studies were discredited for not providing student achievement data.

Darling-Hammond (1994) summarized research investigations of the effect of teacher certification on student achievement by writing, “reviews of research of the past thirty years, summarizing hundreds of studies, have concluded that even with the shortcomings of current teacher education and licensing, fully prepared and certified teachers are...more successful with students than teachers without this preparation” (Darling-Hammond & Wise, 1984).

Studies have also investigated the value of teacher attainment of an advanced degree on student outcomes. Denton & Lacina (1984) published research suggesting a
positive relationship between teacher level of educational attainment and student achievement. Three years later their findings were supported by Ashton & Crocker (1987). Publishing their findings in the Journal of Teacher Education, Ashton & Crocker concluded that course work completed by the teacher has a positive impact on classroom instruction. The following year, Denton & Peters (1988) considered the impact of instruction by teachers with master level credentials on student outcomes. A significant positive effect was reported.

Andrew & Schwab (1995) published their findings comparing 11 different teacher training programs. They compared teachers who had graduated from 5 year master's programs to teachers having attained the more traditional, 4 year bachelor's degree. The results presented the 5 year master's program teacher as more confident and effective than his/her bachelor's degree counterpart. The results of Andrew & Schwab supported findings published by Denton & Peters (1988) seven years earlier.

The validity of investigation intended to address the effect of teacher attainment of an advanced degree, however, has sometimes been compromised by design error. One such study, reported by Goldhaber & Brewer (1996), included teachers who had been awarded a master's and/or subject specific degree. In this ambitious, longitudinal study the curriculum achievement of 24,000 students was surveyed at the end of Grade 8 and, again, at the end of Grade 10. The resulting data was interpreted to demonstrate no effect of instruction by a teacher with a master's degree on student outcomes. Following a more vigorous review of teacher qualification, however, the data was re-interpreted to demonstrate a significant positive relationship between instruction by a teacher with a subject specific degree in math or science and student achievement in each of those
curriculum content areas. Conversely, a significant inverse relationship was demonstrated for instruction by a teacher with a subject specific degree in English or history and student achievement in each of those content areas.

National Board Certification

The National Board of Professional Teaching Standards (NBPTS) was established in 1987 by prestigious educational stakeholders including the National Educational Association, the Carnegie Corporation and North Carolina Governor, James Hunt. The website for the NBPTS (2004a) describes the organization as “an independent, nonprofit, nonpartisan organization” (2004a, p. 1). The NBPTS identifies “the single most important action this country can take to improve schools and student learning is to strengthen teaching”. The mission of the NBPTS is threefold: to implement “high and rigorous standards” for teacher knowledge and performance, to establish a voluntary certification award for teachers meeting this standard and to advance educational reform that reflects the standards of the organization (National Board for Professional Teaching Standards, 2003).

NBC shares the requirement of demonstration of content knowledge with other certification or licensing qualification models. NBC goes beyond other models with the additional requirements of assessment of the candidate’s application of instructional skills and assessment of facility for good judgment in the classroom. A baccalaureate degree and three years experience as a teacher are prerequisites for application for NBC. The two primary venues of candidate assessment are portfolio review and assessment center exercises. The portfolio, to be developed over a 5 month period, is intended to be a demonstration of the candidate’s classroom practices and the resulting student
achievement. This may be demonstrated by work samples, videos of performance or other artifacts documenting professional competency. The portfolio must also demonstrate the candidate's impact on student learning resulting from active participation with colleagues, families and the community. At the assessment center of the NBPTS, candidates respond to computer generated exercises that are designed to evaluate their content and pedagogical knowledge. A $2300.00 fee must accompany the candidate's application for NBC in one of 24 instructional fields (National Education Association, 2003). Data released by the NBPTS indicates that over 30,000 teachers have achieved NBC since the 1995 inception of this process (National Board for Professional Teaching Standards, 2004b).

Despite the relatively recent implementation of NBC, there is a growing body of research investigating its value. Between 1992 and 1995 the University of Northern Iowa, in conjunction with the NBPTS, participated in field test activities that led to development of the NBC. In 1998 Iowa took part in the National Board Certification Project. Vested in the process, the Iowa legislature subsidized candidates one-half of their application fees and offered a $50,000 bonus, paid over five years, to teachers who were awarded NBC. In 2001 Iowa Department of Education investigated the effects of its investment in NBC on professional development, professional services to the schools, levels of teacher induction and retention, and teacher quality (Dethlefs et al., 2001). This survey included 564 teachers and 287 principals. Based on the data, the Iowa Department of Education presented research suggesting that NBC teachers in Iowa were more likely than their non-NBC counterparts to take part in professional development activities and to provide professional services to their schools.
Another state with a vested interest in NBC is North Carolina. North Carolina's Governor, Jim Hunt, was a founding member of NBPTS and North Carolina has remained an advocate of NBC. Currently, 20% of NBC membership is based in North Carolina. North Carolina was the site of the 2003 investigation of the demographic profile of teachers with NBC (Goldhaber, Perry, & Anthony, 2003). The 3 year study, 1997 – 2000, contributed to data bases that included over 7,000 teachers. Data was collected from administrative records, student achievement scores, NBPTS assessment results, district/community characteristics, and district incentives for NBC. Based on the data collected from this sample, the researchers concluded: African-American and/or female teachers were more likely to do well using standardized test format, African-American and/or female, or younger teachers comprised the highest percentage of teachers applying for NBC, the groups less likely to achieve the NBC were African-Americans or males. The study also identified a positive, significant relationship between teachers achieving high scores on standardized tests and teachers awarded NBC.

As this demographic study was in progress, two of its contributing researchers concurrently examined the effect of NBC and student achievement in Grade 3, Grade 4 and Grade 5 (Goldhaber & Anthony, 2004). Over a 3 year period, data representing teacher variables was matched with the records for over 600,000 students. Using a value-added production function design, student academic growth was assessed as a function of student variables, teacher variables and school/district/community variables. The authors concluded that students of NBC teachers demonstrated greater achievement gains in both reading and math than their counterparts instructed by non-NBC teachers. Magnitude of the effect, however, differed by student variables of grade and socio-economic factors.
Students in Grade 3 presented stronger positive effects than students in Grade 4 or Grade 5. The strongest effects in all grades were demonstrated by low-income students.

As Goldhaber et al. (2003, 2004) were investigating the impact of NBC teachers on student achievement in North Carolina, similar research questions were being considered by investigators in Arizona. From 1999 through 2003, Arizona State University researchers, Amrein-Beardsley, Berliner, and Vandevoort (2004), examined the achievement gain of students in Grade 3, Grade 4 and Grade 5, attending 14 Arizona school districts. Comparisons of Stanford-Achievement Test scores indicated greater achievement gains in reading, language arts and mathematics for students instructed by NBC teachers. The authors calculated student achievement gains to be equivalent to 25 additional days of instruction.

Similar results were reported for Miami-Dade high school math students (Cavalluzzo, 2004). The Miami-Dade study included 100,000 students in Grade 9 and Grade 10. The Florida Comprehensive Assessment Test was used to identify student gains in mathematics. Controlling for student, teacher and school characteristics, data demonstrated significant gains in mathematics achievement for students instructed by NBC teachers. Data also suggested stronger effects for the subgroups of special needs, Black and Hispanic students.

Acceptance of the merit for NBC, however, has not been universal. Critics argue that research examining NBC has been flawed by design: they contend that there is no evidence to demonstrate that obtaining NBC improves teacher quality or student achievement. They challenge the NBPTS and its certification as advancing "progressive"
theory and "mirror the education establishment's fixation on educationally questionable doctrines such as constructivism and multiculturalism" (John Locke Foundation, 2003).

In 2000, five years after the first NBC was awarded, researchers from the University of Carolina attempted to investigate its construct validity (Bond, Smith, Baker, & Hattie, 2000). The examiners posed two research questions. First, was there agreement between the standards established by the NBPTS and quality teaching as defined by previous research? Second, does instruction by a NBC teacher have an effect on student achievement? The sample included 65 teachers; 31 teachers in the sample were NBC, 34 teachers were not. The teachers were compared against 15 attributes of quality teaching. Measures of teaching quality included examination of instructional objectives identified in the teachers' lesson plans, observations of classroom instruction, student work samples, and interview of students and teachers. Based on these measures, NBC teachers significantly outperformed non-NBC teachers in every identified attribute. Highly significant out-performance was demonstrated in 11 of the 15 attributes. Despite NBC teacher demonstration of statistically greater student developmental awareness, content knowledge, response flexibility, and instructional strategies that support for student achievement, generalization to improved student achievement was not a finding of the study.

In that same year, Finn and Knostrom published Improving, Empowering, Dismantling. (Finn & Knostrom, 2000) an unkind criticism of the teacher certification processes. They discussed three approaches to assessment of teacher quality: regulatory, reformist and spending. Finn and Knostrom argued that the regulatory approaches, requiring credentials and certifications, have not only failed to identify quality teachers,
they have also dissuaded quality candidates from becoming teachers. They specifically
cited the NBPTS as having devised a process that is elaborate, costly and time-intensive.
Finn and Kanstroom discredited the highly touted standards established by the NBPTS as
empty slogans and measurement of these slogans as absurdity. They supported their
position against credential based judgment of teacher quality with research beginning
with the 1966 Coleman Report (Coleman, 1966), identifying the verbal ability, not
certification, as the teachers most reliable contributor to student curriculum achievement.

As an alternative to regulatory agencies defining teacher quality, Finn and
Kanstroom presented a combination of the reformist and spending approaches. This
paradigm would empower principals to make building based decisions including the
hiring/firing of staff based on teacher qualities that best serve student needs.
Administrative accountability measures for staff would include a level of student
performance as a judgment of teacher quality; community accountability would include
support for a salary guide that would attract and retain quality teachers.

Finn and Kanstroom concluded by suggesting that the valued added model, a
prescribed statistical analysis, should be considered as a valid judgment of teacher
quality. The value added model, develop by Dr. William Sanders (1998) provides a
teacher effect score as the measure of annual student achievement attributed to the
impact of the individual classroom teacher. (A similar value-added design was used by
Goldhaber et. al (2004) and discussed earlier in this chapter.)

A recent study conducted at East Tennessee State University (Stone, 2004) also
used this value added model to investigate the impact of instruction by 16 teachers with
NBC in Tennessee on the academic growth of their students. Results obtained by this
research team concluded that, using the value added model, there were no significant
differences in gains made by the students instructed by NBC teachers. Addressing the
academic and financial implications of NBC, Stone recommended ... "that public
expenditures on NBPTS certification and teacher bonuses should be suspended until it can
be clearly and independently established that the NBPTS certification delivers what it
promises" (2004, p. 3).

Wendy McColskey, another researcher at the University of North Carolina, is
currently investigating broader implications of NBC than have previously been
addressed. Her research questions have been designed to consider: NBC effects at
specific grade level, the longitudinal achievement impact of NBC teacher instruction on
student achievement, and differences in teacher effect pre and post NBC. McCloskey is
also considering the comparisons of instruction by NBC teachers and non-NBC teachers
of high achieving students, of low achieving students, and of the effects on student
curriculum achievement of instruction by non-NBC teachers receiving high performance
evaluation (National Board for Professional Teaching Standards, 2004a). McCloskey's
work is expected to influence North Carolina's policy position that currently encourages
teachers to seek NBC and provides financial incentives to successful candidates.

Highly Qualified Teacher

NCLB established a demand and guideline criteria for HQT: a college degree,
state certification and demonstration of subject competence. The value of this
certification and agreement of uniform criteria between states, however, has not been
achieved. Differences in requirements and proficiency demand between higher education
institutions, state departments of education and testing publishers result in interstate
differences in standards for award of the title. Further, national surveys demonstrated
disagreement between public opinion, USDOE interpretation of the directive, and NCLB
federal mandate.

The Public Agenda has published a hierarchy of characteristics profiling quality
teaching as identified by public school teachers, principals and superintendents (Farkas,
Johnson, & Folino, 2000). Characteristics that rated higher than 50% by both teachers
and administrators included: classroom management, enjoyment of children, technical
application of teaching methods, high achievement expectation, ability to inspire student
achievement, respect for cultural differences, effective relationships with parents and
knowledge of subject. Contrary to the requirements identified by NCLB, pedagogy was
rated above subject knowledge.

Also addressing public opinion, the Educational Testing Service released a survey
of stakeholders including parents, educators and policy makers (Educational Testing
Service, 2002). In accord with the Public Agenda report, this public opinion survey also
identified pedagogy as a priority. In ranked order, the survey profiled a highly qualified
teacher as one who could design learning activities that would inspire students, has a
passion for the profession, has insight into the subject, is responsive to parents and holds
an advanced degree from an esteemed university. It was the public’s opinion that current
colleges and the current certification system effectively provide qualified teaching
professionals. This survey cited low salaries, poor working conditions and lack of
administrative support for staff as contributors of teacher attrition.

In its publication, Meeting the Highly Qualified Teachers Challenge: The
Secretary’s Annual Report on Teacher Quality, (Paige, 2002) the USDOE offered an
alternate standard for teacher quality. The indicators of teacher quality most valued by this report were: teacher verbal skills, teacher cognitive skills, and agreement between holding a degree with a major in a particular subject area and instructing in that subject area. Contrary to the qualities valued by the Public Agenda survey, the USDOE report concluded that there is not evidence to support a positive relationship between a teacher’s demonstration of pedagogy, education beyond a bachelor’s degree or teaching experience, and student achievement. Challenging the teacher certification practice, the report also chided the current system of certification for deterring more qualified candidates from entering the teaching profession. It concluded that academically superior candidates prefer professions that are less rigid in certification demand and more intellectually stimulating. A review of certification requirements for other professional areas, however, does not support the conclusion presented by the USDOE. When comparing certification/licensing requirements for teachers to requirements for other professions - architects, certified public accountants registered nurses and engineers - level of education, years of experience, license examination requirements and examination format are least demanding for the teaching profession (Haycock, Huang, & Yun, 2002).

Darling-Hammond and Youngs (2002) presented an uncomplimentary critique of the Secretary’s Report. They rebuked the Secretary’s claim that the findings of his report were based on solid research. Rather, Darling-Hammond and Youngs charged that the body of evidence, represented by 44 footnotes to the report, was not solid research. They discredited 43 of the footnotes as newspaper articles or materials developed by advocacy
organizations. Further, they asserted that the single study that was published in a peer-reviewed journal was misrepresented in the report (Darling-Hammond & Youngs, 2002).

It is apparent that the HQT mandate of NCLB has directed the attention of many levels of educational stakeholders toward considerations for policy development prescribing teacher quality. Darling-Hammond and Sykes surveyed broad state and local policies to determine parameters for establishment of unified policy prescribing teacher quality and definition of HQT. Their conclusions suggested three policy directives:

1. successful completion of a traditional or alternate route professional program,
2. candidates entering the profession by alternate route should be required to demonstrate high entrance standards, proficiency in instruction, management, curriculum, assessment, student diversity, and lesson planning
3. well versed in both content knowledge and pedagogy (Darling-Hammond & Sykes, 2003).

Controversy over NCLB and HQT has become the nation’s ‘dirty laundry’. In his article, The Perverse Incentives of the No Child Left Behind Act, Ryan (2004) rebuked NCLB as arbitrary and unrealistic. His article was intended to provide evidence of establishment of arbitrary achievement standards that ignore current or past achievement levels and student facility for academic growth. Ryan concluded that it is probable that schools that have a history of low achievement may now demonstrate relatively greater achievement progress than traditionally high achieving schools, yet, still not meet the criteria for AYP. Ryan also argued that this policy demand of NCLB will result in states developing scoring systems designed to make the state look better as opposed to accurately measuring the progress of the students. "Specifically, the Act unintentionally
encourages states to lower their academic standards, promotes school segregation and the pushing out of poor and minority students, and discourages good teachers from taking jobs in challenging classrooms” (Ryan, 2004, p. 2).

Data from the first scientifically based investigation that considered the influence of instruction by HQT was conducted by P.W. Tuerk (2005) and released in June 2005. Tuerk’s investigation included 1,450 secondary schools in Virginia, with cross-populations of geographic and socioeconomic environments. Interpreting the resulting data, Tuerk established an inverse relationship between increased levels of poverty and both student achievement at the Grade 8 level and student access to instruction by HQT. Basing his conclusion on a typical Virginia school with 400 students, Tuerk demonstrated a 1% increase in HQT would influence nine to 20 additional students receiving a passing score on the state assessment. The influence of poverty on decreased levels of student achievement and student access to instruction by HQT was most pronounced in large cities and more remote rural areas.

Summary

The intent of this literature review was to identify and discuss research evidence investigating the influence of targeted teacher variables, those identified by the New Jersey School Report Card, on student achievement. Documents included primary and secondary sources of information included letters, newspaper articles, Internet sites, Excell spreadsheets, PowerPoint presentations, government publication, professional reports, professional journals, including peer reviewed journals, dissertations, books, statistical studies, and local, state, and federal legislation. Research evidence is not in agreement on the predictive value of each of these targeted variables. NCLB legislation,
however, has identified only one of these targeted variables, mastery of content knowledge, as the seminal qualifier for the designation of HQT. NCLB requirement of HQT has recently been implemented. The first data identifying HQT teachers in New Jersey has just been released; there is limited research investigating the value of this variable. It is an intent of this study to consider this newly introduced variable and its relative predictive value on student achievement in relation to other identified teacher variables with previous research history.
CHAPTER III

METHOD

The purpose of this study is to investigate the influence of teacher variables on student achievement. Quantifiable data will be collected through examination of pre-existing NJDOE documents. The resulting findings and outcomes of this research are intended to contribute to a cumulative body of knowledge supporting future policy development. That policy development can advance teacher quality, teacher preparation programs and professional development. Policy development in these venues will have coincidental effects on student achievement, social equity, judicious use of financial resources and political agenda for the advancement of education.

The methodology that was used to examine the data was quantitative design using inferential statistical analysis. Data used for this research was collected from the NJDOE (2005b) Office of the Chief of Staff, Office of Public Information, and Office of Standards and Professional Development, and from the NJDOE website, http://www.state.nj.us/education.

Internet searches, using basic directories and meta-search engines, were used to research documents and to collect and retrieve contributing sources. The Educational Research Information Center (ERIC) (2004) database, http://www.eric.ed.gov, was an important source of identification of journal articles researching both the dependent and independent variables. The web sites for ProQuest Digital Dissertations (2004), http://www.library.umi.com/dissertations and the Seton Hall Library, Dissertations/Theses
were used to investigate dissertations addressing related studies. Web sites reviewed to retrieve government documents, United States Department of Education, Promoting Excellence for all Americans (2004b) (http://www.ed.gov), United States Census Bureau (2004) (http://www.census.gov), and Federal Statistics (2004) (http://fedstats.gov) contributed to the collection of statistical data for the research. Each of these sites provided considerable literature review investigating the effects of three of the four targeted variables - faculty attendance rate, faculty credentials, and award of NBC - on student achievement. Substantial research-based evidence investigating the effect of the fourth targeted variable, attainment of HQT as defined by NCLB, however, was not uncovered.

All data collected for this study from letters, newspaper articles, Internet sites, Excel spreadsheets, PowerPoint presentations, government publications, professional reports, professional journals - including peer reviewed journals, dissertations, books, statistical studies, and local, state and federal policies, was pre-existing. Data was collected by study of written documents, attendance at presentations given by the author, or written or verbal communications with the sources.

Data used for statistical analysis was imported using Microsoft Excel format. Statistical Package for the Social Sciences (SPSS) was the software tool used to organize descriptive data and to develop inferential analysis examining the influence of the identified variables on student achievement. The outcomes from this investigation were used to answer the stand research questions:
1. When controlling for DFG, what is the influence of the faculty variables identified by the *New Jersey School Report Card* on student achievement at the partially proficient level, in language arts literacy, as measured by the NJ ASK 4?

2. When controlling for DFG and faculty variables identified by the *New Jersey School Report Card*, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the partially proficient level, in language arts literacy, as measured by the NJ ASK 4?

3. When controlling for DFG, what is the influence of the faculty variables identified by the *New Jersey School Report Card* on student achievement at the proficient level, in language arts literacy, as measured by the NJ ASK 4?

4. When controlling for DFG and other teacher variables identified by the *New Jersey School Report Card*, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the proficient level, in language arts literacy, as measured by the NJ ASK 4?

5. When controlling for DFG, what is the influence of the teacher variables identified by the *New Jersey School Report Card* on student achievement at the advanced proficient level, in language arts literacy, as measured by the NJ ASK 4?

6. When controlling for DFG and other teacher variables identified by the *New Jersey School Report Card*, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the advanced proficient level, in language arts literacy, as measured by the NJ ASK 4?
7. When controlling for DFG, what is the influence of the faculty variables identified by the New Jersey School Report Card on student achievement at the partially proficient level, in mathematics, as measured by the NJ ASK 4?

8. When controlling for DFG and faculty variables identified by the New Jersey School Report Card, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the partially proficient level, in mathematics, as measured by the NJ ASK 4?

9. When controlling for DFG, what is the influence of the faculty variables identified by the New Jersey School Report Card on student achievement at the proficient level, in mathematics, as measured by the NJ ASK 4?

10. When controlling for DFG and faculty variables identified by the New Jersey School Report Card, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the proficient level, in mathematics, as measured by the NJ ASK 4?

11. When controlling for DFG, what is the influence of the faculty variables identified by the New Jersey School Report Card on student achievement at the advanced proficient level, in mathematics, as measured by the NJ ASK 4?

12. When controlling for DFG and faculty variables identified by the New Jersey School Report Card, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the advanced proficient level, in mathematics, as measured by the NJ ASK 4?
Data Sources

The Fall Survey (New Jersey Department of Education, 2004b) documents vital educational statistics in the fields of enrollment, graduates, dropouts, certified staff and non-certified staff. Data is representative of each district as of October 15 of the previous school year. A 5 year review of data is presented allowing review of the districts current status as well as a historical profile for each field. The NJDOE web page, at http://www.state.nj.us/njdoe/data/, was accessed to review the Fall Survey.

New Jersey School Report Card

In 1995 the New Jersey School Report Card (New Jersey Department of Education, 2004e) was introduced by legislative mandate, N.J.S.A. 18A:7E 1-5. The Report Card was designed to provide the public with information about individual schools in the fields of school environment, student information, student performance indicators, staff information, and district financial data. Specific to this study, data was collected from the fields of student performance indicators and staff information. The web site for this collection was http://education.state.nj.us/ncrc/rc04/. The student performance indicators field of the Report Card provided a differentiated summary of student achievement. The standardized assessment used to assess Grade 4 achievement in each of the two targeted curricula areas was the NJ ASK 4. The NJ ASK 4 is a criterion referenced, standardized assessment designed to measure attainment of skills identified by the NJCCCS. The NJ ASK 4 was administered to Grade 4 students between March 16 and March 19, 2004. The Report Card presents differentiated charts of student performance in the curriculum areas of language arts literacy and mathematics. Demographic data include local school, district, number of
students assessed and DFG index. Student achievement for each grade and subject is reported as partially proficient (scores from 100 – 199), proficient (scores from 200 – 249) and advanced proficient (scores from 250 – 300). The inclusion of state wide data for each field allows broad comparisons of district to state totals.

The NJDOE announced that the 2003-04 Report Card would contain HQT data. When the Report Card was published, however, HQT data was limited to description of requirements and venues for demonstration of competence. Statistical data for HQT, therefore, was collected from the Highly Qualified Teacher Survey Results found at http://www.nj.gov/hi/hi/hi/hiq/03/04, not the individual school Report Cards. The Highly Qualified Teacher Survey presented data in three formats: percent of teachers who meet the NCLB definition of a HQT for at least one subject taught, percent of teachers who meet the NCLB definition of HQT for every subject taught, and percent of all core academic subject classes in the school taught by HQTs. To best reflect the intent of this study, the second format, percent of teachers who meet the NCLB definition of a HQT for every subject taught, was used.

NCLB Highly Qualified Teachers State Baseline Data Survey. 2003-2004 School Survey Form

In the fall of 2003, the NJDOE developed the NCLB Highly Qualified Teachers State Baseline Data Survey. Internet transmission distributed the Survey to each school district in the state. The Survey was completed by individual schools, organized by district and returned to the NJDOE in February 2004. This was the first year this documentation was required. The collected information provided a baseline investigation of the state’s compliance with the HQT demand of NCLB. The Survey required each
school to identify organization by grade: elementary, intermediate, middle or junior, or secondary. Each school provided a non-duplicative count of the number of staff teaching core academic subjects. The Survey required differentiation of this count by number of individual teachers meeting the federal requirement for HQT for multiple core academic subjects taught by that teacher, for individual teachers meeting the requirement for one of the multiple core academic subjects taught by that teacher, and individual teachers who did not meet the requirement in any core academic subject taught by that teacher. A count of the number of classes provided by the school for each of the core academic subject areas was also included. This document was used by the NJDOE to provide baseline identification of New Jersey’s compliance with the federal policy directive for HQT, establish annual targets and assess yearly progress toward federal compliance.

Data Sample

Population and Sample Method

There are currently 2527 public elementary schools in the state of New Jersey. In the 2003–2004 school year, 1297 of these elementary schools provided Grade 4 instruction and their NJ ASK 4 scores were reported on the NJDOE web site. The population for this study was the teachers who provided instruction in those 1297 schools and the students who were in Grade 4 and participated in administration of the NJ ASK 4. From these 1297 schools, a stratified random sample was developed. Stratified random sampling was selected to allow differentiation of the influence of identified demographic subgroups (2005). The demographic subgroups that were differentiated in this study were each of the individual DFGs, the NJDOE’s index of socioeconomic status (New Jersey Department of Education, 2000). DFG ranks New Jersey’s schools by SES. The
NJDOE introduced DFG model in 1975 in response to research supporting a relationship between SES and student achievement. The original intent of DFG was to avoid inaccurate inference by considering educational practice and outcomes in the absence of SES. Appropriate application of DFG could contribute to a more judicious development of educational policy. The NJDOE believes DFG reduces variability when reporting test scores between dissimilar districts and the NJDOE regularly includes DFG as part of the data they develop and distribute. Consideration of DFG, however, is not a legal requirement.


Revisions to the original 1975 DFG index occurred in 1984, 1990 and, most recently, in 2000. The 2000 most recent model reflects statistical data from the 2000 Census. This study used the 2000 DFG model to introduce a control for the effects of SES, thereby, improving the inferential power of the resulting outcomes.

New Jersey has a self-contained model for instruction in elementary schools (New Jersey Department of Education, 2005). The teacher sample, therefore, was the teachers in the elementary schools that included Grade 4 instruction that were selected by stratified random sampling. The student sample consisted of all Grade 4 students in those same schools who participated in administration of the NJ ASK 4. Administration of the
ASK 4, the measure used to demonstrate student curriculum achievement in this study, by NCLB policy mandates a minimum participation of ninety-five percent of the student population in each school. The actual percentage of the Grade 4 student population that participated in each school differed as a result of student absences and unscoreable protocols. Additionally, the NJDOE suppressed data from select subgroups (major racial or ethnic groups, economically disadvantaged, disabilities under IDEA, and limited English proficiency) that comprised less than the minimum required students. This is a policy attempt to reduce the probability of personal identification of students in those small groups.

An on-line stratified random sample calculator made available from CustomInsight (2005) (http://www.custominsight.com/articles/random-sample-calculator.asp) was used to determine 585 schools, 95% confidence with 3% error level, were required to represent the population of the study. The percent of each DFG within the population was used to calculate the number of schools in each DFG that comprised the sample subsets. Excel spreadsheets were developed for each DFG. The randomization feature of Microsoft Excel was used to select which of the schools in the population would be included in each of the subsets of the sample. The stratification of the sample, by number of school in each DFG, is presented in Table 2.
<table>
<thead>
<tr>
<th>DFG</th>
<th># of Schools</th>
<th>% of Total</th>
<th># of Schools in the Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>238</td>
<td>18%</td>
<td>105</td>
</tr>
<tr>
<td>B</td>
<td>149</td>
<td>12%</td>
<td>70</td>
</tr>
<tr>
<td>CD</td>
<td>129</td>
<td>10%</td>
<td>59</td>
</tr>
<tr>
<td>DE</td>
<td>177</td>
<td>14%</td>
<td>82</td>
</tr>
<tr>
<td>FG</td>
<td>174</td>
<td>13%</td>
<td>76</td>
</tr>
<tr>
<td>GH</td>
<td>174</td>
<td>13%</td>
<td>76</td>
</tr>
<tr>
<td>I</td>
<td>217</td>
<td>17%</td>
<td>99</td>
</tr>
<tr>
<td>J</td>
<td>39</td>
<td>3%</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>585</strong></td>
</tr>
</tbody>
</table>

Data Analysis Tools

Data was collected and organized using the electronic spreadsheet format, Microsoft Excel. Excel uses a design of row-and-column math to organize data. A series of Microsoft Excel electronic spreadsheets were generated to differentiate the population by DFG, identify the sample, stratify the sample by DFG, organize the variables, and to collect the data. Excel is part of the Microsoft Office package and is available from Microsoft Corporation, One Microsoft Way, Redmond, Washington, 98052-6599.
Following collection and organization of data using electronic spreadsheet format, the Statistical Package for Social Sciences (SPSS) was used for more sophisticated regression, model building, and analysis. SPSS uses interface and underlying databases to generate statistical tables — variables entered/removed, model summary, ANOVA, coefficients, and excluded variables — that are required for inferential analysis of the data. SPSS generated the ANOVA tables that were used to develop the series of tables representing each regression model that appear in Chapter IV. SPSS software is published and distributed by SPSS Inc. Headquarters, 233 S. Wacker Drive, 11th floor, Chicago, Illinois 60606.

Data Collection

All data sources used in this investigation are public domain and available via the Internet using the web sites contained in Methodology and Data Sources sections of this chapter. Separate NJDOE downloads needed to develop the spreadsheets used in the investigation included: an alphabetical listing of elementary schools, each school's DFG designation, individual school Report Cards, and the percent of teachers who have obtained HQT designation in each school.

The initial spreadsheet for this investigation identified the 1297 schools in the population by four fields: county, district, school, and DFG. Codes replaced actual school names. Stratifying the sample consistent with the demographic subgroup of DFG introduced a control for the effects of SES, thereby, improving the inferential power of the resulting outcomes. After the entire population was identified by code and DFG, the population was differentiated by DFG resulting in eight separate spreadsheets. Beginning with the spreadsheet identifying the population of 236 elementary schools in DFG A, and
using the data analysis random sample feature of Excel, the population of DFG A was randomized. Since DFG A represents 18% of the 1297 elementary schools in the population, the first 105 samples identified by data analysis random sample were eliminated from the DFG A population spreadsheet and moved to a new spreadsheet representing the sample subset DFG A. Some of these 105 random samples, however, were duplicates. Duplication occurred because random sample selection does not eliminate schools as they are identified, rather each school in the population is considered each time a sample is selected. To complete the selection of 105 samples needed for the stratified sample subset DFG A, three separate randomizations of population DFG A were required. This randomization process was completed for each of the remaining DFGs. The process resulted in percent of each DFG in the population consistent with percent of each DFG in the stratified sample. No further data was collected for schools in the population that were not selected for the sample.

With the sample selection completed, additional fields, or columns, were added to the spreadsheets. The first additional field reflected the dependent variable, student achievement. This field was differentiated to include scores in both language arts and mathematics. Then, the field was further differentiated to include level of student achievement: advanced proficient, proficient, and non-proficient. Subsequent additional fields provided data representing the independent variables - teacher attendance rate, level of teacher academic degree, attainment of NBC, and attainment of HQT status as defined by NCLB. Empty cells were completed as data became available from NJDOE publications. After all cells were completed, the eight separate DFG sub sets were combined into one spreadsheet representing the 585 schools in the sample.
Data Analysis Method

Quantitative research design was used to examine the effects of targeted teacher variables on student achievement. These targeted teacher variables are faculty attendance rate, faculty credentials, award of National Board Certification (NBC), and attainment of HQT status as defined by NCLB. The first three of these targeted teacher variables were selected because literature review identified research-based evidence that each of these variables has an impact on student achievement outcomes. Review of the literature, however, indicated that research does not agree on the level of impact of each of these targeted variables. HQT is included to introduce investigation the value of this construct as a predictor of student achievement. This is the first year that New Jersey published data identifying HQT, and substantial research-based evidence of its predictive value on student curriculum achievement has not been established.

An inferential statistical method, regression analysis, was used to analyze the data. A forward selection approach established a hierarchical linear model building. The variables were considered for parsimonious research values. The data analysis method was selected for its precision in measurement of these targeted variables and its general robust interpretative quality.

Multiple regression, model building, was used to increase the predictive power of the independent variables on student achievement. Models 1 and 2 identified the isolated predictive values of HQT and DFG, respectively. Models 3, 4, and 5 were sequentially expanded to consider the impact of each of the targeted teacher variables identified by the New Jersey School Report Card – faculty attendance, level of faculty credentials, and faculty NBC - that has an established research-based impact on student achievement.
The resulting data identified the total variance in student achievement that can be predicted by the individual and combined effects of this three research validated variables. Model 6, while controlling for the combined variance of the previous targeted variables, introduced the independent variable lacking research based evidence. Instruction by HQT, to the regression equation. Models 3 through 6 also included the independent variable, DFG, to control for SES and improve the inferential power of the resulting outcomes. Model 7 considered the combined influence of DFG and HQT (see Figure 1.).

As each subsequent model provided additional information, the resulting ANOVA tables were analyzed to determine the predictive value of each independent variable in isolation and in combinations with other independent variables. The order of predictive influence, from least to greatest, of the targeted teacher variables was also considered. Finally, the ANOVA tables were examined to determine if there was a significant change in the variance ($R^2$) in student curriculum content achievement that could be accounted for by instruction by HQT.

In a final review of the tables resulting from each of the seven models, the $F$ statistic from each model was examined to determine if each individual model was significant. The interpretation of $R^2$ in each model provided a percentage representing the variance in achievement scores that can be attributed to the individual independent variables included in each of that model. Changes in $R^2$ between models reflected changes in percent of variance in achievement scores that could be attributed to the change in combinations of independent variables in each subsequent model. The
resulting data was analyzed to develop responses to the 12 research questions, consider
the efficacy of HQT, and to develop implication for future policy development.
Figure 1. Multiple Regression Model
CHAPTER IV
ANALYSIS OF THE DATA

Beginning with the 1965 Elementary and Secondary Education Act (ESEA) and culminating with its current 2002 reauthorization, known as No Child Left Behind (NCLB), federal educational policy directives through these five decades, to varying extent, share a common philosophy of increased student achievement through advanced teacher quality.

The current authorization of NCLB fully enact this phenomenon at the partially proficient level, in language arts literacy, as measured by the NJ ASK 4?

2. When controlling for DFG and faculty variables identified by the New Jersey School Report Card, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the partially proficient level, in language arts literacy, as measured by the NJ ASK 4?

3. When controlling for DFG, what is the influence of the faculty variables identified by the New Jersey School Report Card on student achievement at the proficient level, in language arts literacy, as measured by the NJ ASK 4?

4. When controlling for DFG and other teacher variables identified by the New Jersey School Report Card, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the proficient level, in language arts literacy, as measured by the NJ ASK 4?
5. When controlling for DFG, what is the influence of the teacher variables identified by the New Jersey School Report Card on student achievement at the advanced proficient level, in language arts literacy, as measured by the NJ ASK 4?

6. When controlling for DFG and other teacher variables identified by the New Jersey School Report Card, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the advanced proficient level, in language arts literacy, as measured by the NJ ASK 4?

7. When controlling for DFG, what is the influence of the faculty variables identified by the New Jersey School Report Card on student achievement at the partially proficient level, in mathematics, as measured by the NJ ASK 4?

8. When controlling for DFG and faculty variables identified by the New Jersey School Report Card, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the partially proficient level, in mathematics, as measured by the NJ ASK 4?

9. When controlling for DFG, what is the influence of the faculty variables identified by the New Jersey School Report Card on student achievement at the proficient level, in mathematics, as measured by the NJ ASK 4?

10. When controlling for DFG and faculty variables identified by the New Jersey School Report Card, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the proficient level, in mathematics, as measured by the NJ ASK 4?
11. When controlling for DFG, what is the influence of the faculty variables identified by the New Jersey School Report Card on student achievement at the advanced proficient level, in mathematics, as measured by the NJ ASK 4?

12. When controlling for DFG and faculty variables identified by the New Jersey School Report Card, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the advanced proficient level, in mathematics, as measured by the NJ ASK 4?

The NJDOE website (http://www.nj.gov) lists 2527 public schools with elementary designation. A cross-reference with each local school’s Report Card indicated 1297 of these schools included Grade 4 instruction. Stratified random sampling calculation, 95% confidence with 3% error, required 585 of these 1297 schools to be included in this study. Sample sizes were stratified based on the percent of each DFG in the population. (The actual numbers of schools in each DFG, the percent of total schools in the population/sample that each DFG represents, and the number of schools in each DFG that were included in each sample subset are represented in Chapter III, Table 2.)

The identification of schools for each DFG population required separate Excel spreadsheets to be developed listing each school and its corresponding DFG. On the spreadsheets, schools were listed by number code rather than name. The data analysis random sample feature of Excel was then use to generate a random list of schools for each DFG sample subset spreadsheet. Random selection does not eliminate previously identified schools. Each school is considered each time a sample is drawn. Duplication, therefore, of selection of some schools occurred. Additionally, some of the schools selected were eliminated because they did not report data on all of the variables included
in this study. To obtain the required number of samples for each subset, the schools selected from the first randomization were included in the identified subset. The codes of those schools and the schools with insufficient data were then removed from the original spreadsheet. The population spreadsheet, with the remaining school codes, was again randomized to identify additional schools required to complete each DFG subset. To identify sufficient number of samples for most DFG subsets, three separate randomizations were required.

The final spreadsheet contained 585 rows listing each of the identified local schools. There were 12 columns of variables: student achievement in language arts: non-proficient, proficient, advanced proficient; student achievement in mathematics: non-proficient, proficient, and advanced proficient; faculty attendance rate; faculty credentials: bachelor of arts/bachelor of science, master of arts, doctor of philosophy/doctor of education; National Board Certification; and Highly Qualified Teacher. This previously existing data was collected online from the local School Report Cards (New Jersey Department of Education, 2004e) (http://education.state.nj.us/rrc/rc04/) and the Highly Qualified Teacher Survey (New Jersey Department of Education, 2005a) (http://www.nj.gov/njdeq/data/hqf/05a). The Highly Qualified Teacher Survey presented data in three formats: percent of teachers who meet the NCLB definition of a HQT for at least one subject taught, percent of teachers who meet the NCLB definition of HQT for every subject taught, and percent of all core academic subject classes in the school taught by HQTs. To best reflect the intent of this study, the second format, percent of teachers who meet the NCLB definition of a HQT for every subject taught, was used.
Linear regression, the inferential statistical method used to analyze the data in this study, assumes that there is a straight line relationship between dependent and independent variables; that is, as the value of the independent variable increases (positive influence) or decreases (negative influence) there is a similar influence on the dependent variable. When using model building, linear regression analysis provides statistical data that allows comparison between individual linear regression models to predict the variance in the dependent measure, as well as comparisons of the influence of the individual independent variables within each model.

When interpreting data, the $F$ statistic is first considered to establish the fit or value of each model. For this study $p = .05$ level was used to determine model significance. Following determination of significance for each model the $R^2$ and adjusted $R^2$ were reviewed. These statistics represent the variance, or change, within the dependent variable that can be predicted by the combined influence of all the independent variables within the model. $R^2$ and adjusted $R^2$ are each reported as percents ranging from 0 to 1. For this study the adjusted $R^2$, the statistic that also factors the number of independent variables in the model, was used to represent the predictive value of the model.

The individual impact of each of the independent variables is indicated by the Beta statistic. The Beta is a coefficient that reflects the relative value of each of the independent variables to prediction variance in the dependent variable. The positive or negative sign of the Beta coefficient indicates the direction of impact of that independent variable. The predictive significance of each Beta is reported as a $t$ score. Consistent with the $F$ statistic, significance for $t$ was $p = .05$. 
<table>
<thead>
<tr>
<th>Model</th>
<th>$F$</th>
<th>Sig.</th>
<th>Adj R2</th>
<th>Beta</th>
<th>$t$</th>
<th>Sig.</th>
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*Significant at the .05 level.
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*Note. *p = <.05

Model Building: Analysis of the Variance in Student Achievement at the Partially Proficient Level, in Language Arts Literacy, as Measured by the NJ ASK 4

Table 3 represents the data that resulted from each of seven models of regression analysis. Variance in the dependent variable - student achievement, in the curriculum area of language arts literacy, as measured by partially proficient scores on the NJ ASK 4 - was measured in each model. Model 1 considered the predictive value of HQT. The influence of DFG was examined in Model 2. Models 3, 4, 5, and 6 were combinations of DFG and the identified faculty variables. The independent variables used in Model 7 were the combination of DFG and HQT.
The resulting ANOVA table revealed that each of the seven models was a significant predictor of variance in student achievement, language arts literacy, partially proficient scores on the NJ ASK 4. Faculty HQT, when considered separate from the other variables, accounted for only 6% of the variance in partially proficient language arts literacy scores (Model 1: $F = 40.062, p < .000$, adjusted $R^2 = .063$). When considered separate from the other variables, DFG accounted for 47% of the variance in achievement (Model 2: $F = 510.095, p < .000$, adjusted $R^2 = .466$). The addition of faculty attendance, faculty credentials and faculty NBC with DFG did not increase the predicted variance (Model 3: $F = 255.284, p < .000$, adjusted $R^2 = .468$; Model 4: $F = 103.134, p < .000$, adjusted $R^2 = .467$; Model 5: $F = 85.845, p < .000$ adjusted $R^2 = .466$). Predictive value increased 1%, from 47% to 48%, when faculty HQT was combined with all the other variables (Model 6: $F = 77.749, p < .000$, adjusted $R^2 = .479$). Combining the two variables, DFG and faculty HQT, Model 7, with 48% accountability (Model 7: $F = 269.876, p < .000$, adjusted $R^2 = .479$), equaled the predictive strength of Model 6. Although Model 6 and Model 7 resulted in the same predictive value, Model 7, with only two variables, was the more parsimonious equation.

*Strength of the Variables: DFG, Three Levels of Faculty Credentials – Bachelor, Master, Doctor – Faculty NBC, Faculty HQT*

Each of the three levels of faculty credentials, and faculty NBC were found to have insignificant predictive value on student achievement, language arts literacy, partially proficient scores. Faculty attendance was not found to have a significant influence on student achievement when this variable was included with faculty credentials and faculty NBC. When analyzed in combination with DFG, or in
combination with all other faculty variables identified by the New Jersey School Report Card and faculty HQT, however, higher faculty attendance rates influenced a reduction in the percent of students scoring at the partially proficient level in language arts (Model 3: Beta = -.061, t = -1.980, p = < .000; Model 6: Beta = -.065, t = -2.092, p = .037) When its influence was isolated, increased faculty HQT resulted in decreased language arts partially proficient scores (Model 1, Beta = -.9254, t = -6.329, p = <.000). Although continuing to be significant, impact of faculty HQT decreased when DFG was controlled (Model 6, Beta = -.0126, t = -2.987, p = <.000: Model 7, Beta = -0.123, t = -4.036, p = <.000). The strongest impact on scores in each model was DFG (Models 2 through 7: Beta coefficients across the six models ranged from -.642 to -.683, respective t scores ranged from -18.476 to -22.585, significance was consistent at p = < .000). The negative relationship between DFG and student achievement indicated that as SES increased, percent of language arts literacy partially proficient scores decreased. DFG was suggested to have a greater impact on student achievement, language arts literacy, NJ ASK 4 partially proficient scores than the identified teacher variables.

Summary of the Seven Models that Regressed DFG and Identified Teacher Variables on Student Achievement at the Partially Proficient Level, in Language Arts Literacy, as Measured by the NJ ASK 4

1. When controlling for DFG, what is the influence of the faculty variables identified by the New Jersey School Report Card on student achievement at the partially proficient level, in language arts literacy, as measured by the NJ ASK 4?

When controlling for DFG, the faculty variables identified by the New Jersey School Report Card – three levels of faculty credentials: bachelor, master and doctor, and
faculty NBC were not found to have a significant influence on student achievement at the partially proficient level in language arts literacy, as measured by the NJ ASK 4. The identified variable, faculty attendance, was not found to consistently have a significant influence on student achievement. When analyzed in combination with DFG, or in combination with all other faculty variables identified by the New Jersey School Report Card and faculty HQT, however, higher faculty attendance rates were found to influence a small, but significant, reduction in percent of students achieving at the partially proficient level in language arts literacy, as measured by the NJ ASK 4.

2. When controlling for DFG and faculty variables identified by the New Jersey School Report Card, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the partially proficient level, in language arts literacy, as measured by the NJ ASK 4?

When controlling for DFG and teacher variables identified by the New Jersey School Report Card, the designation of highly qualified teacher, as defined by NCLB, was found to have a small, but a significant, negative influence on student achievement at the partially proficient level, in language arts literacy, as measured by the NJ ASK 4.
Table 4

Analysis of the Variance in Student Achievement at the Proficient Level, in Language

**Arts Literacy, as Measured by the NJ ASK 4**

<table>
<thead>
<tr>
<th>Model 1</th>
<th>F</th>
<th>Sig.</th>
<th>Adj R2</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
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</table>

Note: *p < .05

Model Building: Analysis of the Variance in Student Achievement at the Proficient Level, in Language Arts Literacy, as Measured by the NJ ASK 4

The preceding data was developed from the regression of student achievement on faculty HQT, DFG and faculty variables identified by the New Jersey School Report Card. The measure of student achievement was proficient performance, in language arts literacy, as measured by NJ ASK 4. Model Summary, ANOVA and Coefficient tables are summarized in Table 4.
The data indicated that the regression equation used in each of the seven models was significant for prediction of change in student achievement, language arts literacy, proficient achievement on the NJ ASK 4.

Faculty HQT, considered absent of all other independent variables, had an explanatory power of 6% of the variance in student proficient achievement in language arts literacy (Model 1: \( F = 37.024, p = < .000, \text{adjusted } R^2 = .058 \)). Absent of all other independent variables, 30% of change in student achievement could be explained by DFG (Model 2: \( F = 256.112, p = < .000, \text{adjusted } R^2 = .304 \)). Model 3 was an analysis of the influence of DFG and faculty attendance on proficient achievement. Model 4 included DFG, faculty attendance, and three levels of faculty credentials. Model 5 included all previous variables plus faculty NBC. Each of these three models accounted for 31, of the change in student achievement scores. The addition of these teacher variables, therefore, only expanded the explanatory power of the equation by 1% (Model 3: \( F = 130.025, p = < .000, \text{adjusted } R^2 = .306 \); Model 2, \( F = 52.598, p = < .000, \text{adjusted } R^2 = .306 \); Model 5, \( F = 43.777, p = < .000, \text{adjusted } R^2 = .305 \)). An addition 1%, or 32% of the total variance, could be explained by combining DFG, the faculty variables identified by the New Jersey School Report Card, and faculty HQT (Model 6: \( F = 40.588, p = < .000, \text{adjusted } R^2 = .322 \)). When DFG and faculty HQT were analyzed absent the five other teacher variables, the explanatory power of the equation continued to be 32% (Model 7: \( F = 139.563, p = < .000, \text{adjusted } R^2 = .322 \)). Although both Model 6 and Model 7 each explain 32% of the variance in scores, Model 7 is the more parsimonious equation.
Strength of the Variables: DFG, Three Levels of Faculty Credentials – Bachelor, Master, Doctor – Faculty NBC, Faculty HQT

The identified teacher variables, faculty attendance, levels of faculty credentials, and faculty NBC were not found to have a significant impact on student achievement scores. Faculty HQT was found to have a significant, positive impact on scores. The impact was relatively stronger when the effect was isolated, rather than in combination with other variables (Model 1, Beta = .244, t = 6.086, p = .000; Model 6, Beta = .140, t = 3.881, p = .000, Model 7, Beta = .140, t = 4.037, p = .000). A stronger impact on student proficient achievement was suggested for DFG. DFG had a significant, positive impact in each of the models; its strongest impact was presented when DFG was isolated, rather than in combination with the identified teacher variables (Model 2: Beta = .527, t = 13.385 – 16.003, p = .000). The positive relationship between both faculty HQT and DFG, and student scores indicated that increases in faculty HQT or increases in DFG may result in increases in proficient scores. DFG, however, was suggested to have a greater impact on student achievement, language arts literacy, NJ ASK 4 proficient scores than any of the teacher variables.

Summary of the Seven Models that Regressed DFG and Identified Teacher Variables on Student Achievement at the Proficient Level, in Language Arts Literacy, as Measured by the NJ ASK 4

3. When controlling for DFG, what is the influence of the faculty variables identified by the New Jersey School Report Card on student achievement at the proficient level, in language arts literacy, as measured by the NJ ASK 4?
When controlling for DFG, the teacher variables identified by the *New Jersey School Report Card* were not found to have a significant influence on student achievement at the proficient level, in language arts literacy, as measured by the NJ ASK 4.

4. When controlling for DFG and other teacher variables identified by the *New Jersey School Report Card*, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the proficient level, in language arts literacy, as measured by the NJ ASK 4?

When controlling for DFG and teacher variables identified by the *New Jersey School Report Card*, the designation of highly qualified teacher, as defined by NCLB, was found to have a small but significant, positive influence on student achievement at the proficient level, in language arts literacy, as measured by the NJ ASK 4.
Table 5

Analysis of the Variance in Student Achievement at the Advanced Proficient Level, in Language Arts Literacy, as Measured by the NJ ASK 4

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*Note. *p = <.05*

Model Building: Analysis of the Variance in Student Achievement at the Advanced Proficient Level, in Language Arts Literacy, as Measured by the NJ ASK 4

Seven multiple regression models were used to increase the ability to explain variance in student achievement. Student achievement was a measure of advanced proficient scores, in language arts literacy, on the NJ ASK-4. The independent variables considered in these models were faculty HQ, DFG and the faculty variables identified by the New Jersey School Report Card. The resulting data is presented in Table 5.
Each of the seven models was found to be significant for prediction of change in student achievement at the advance proficient level, in language arts literacy, as measured by the NJ ASK-4.

The weakest model, explaining just 1% of the variance, regressed student achievement on the single variable, faculty HQT (Model 1: $F = 8.577, p = .004$, adjusted $R^2 = .013$). The six models that contained DFG as the only independent variable, or DFG in combination with the identified teacher variables or in combination with faculty HQT, each explained 31% of the change in student achievement (Models 2, 3, 4, 5, 6 and 7: $F$ scores ranged from 38.900 to 261.512, all six models were significant at $p = .000$, adjusted $R^2$ ranged from $.507 - .314$). Model 2, the equation that regressed student achievement on DFG absent all teacher variables, equaled or exceeded the explanatory power of the other six models and was the most efficient equation.

Strength of the Variables: DFG, Three Levels of Faculty Credentials – Bachelor, Master, Doctor – Faculty NBC, Faculty HQT

In each model faculty attendance, faculty credentials at the master and doctoral levels, and faculty NBC were found to be insignificant for explanation of student advanced proficient achievement, in language arts literacy, as measured by the NJ ASK-4. There was, however, a small but significant negative influence on advanced proficient scores when instruction was provided by faculty at the bachelor level (Model 4: Beta = -.115, $t = -2.152, p = .032$; Model 5, Beta = -.115, $t = -2.155, p = .032$; Model 6: Beta = .115, $t = -2.151, p = .032$). (It is noted that although a significant influence was suggested, this influence was not strong enough to increase the explanatory power of the equations.) Instruction by HQT, when considered in isolation, resulted in a small, but
significant, positive influence on student achievement (Model 1: Beta = .120, t = 2.929, p = < .004). The influence of instruction by HQT, however, diminished and became insignificant when HQT was considered in combination with the identified teacher variables or in combination with DFG. The variable representing socio-economics, DFG, was found to have a significant, and consistent across models, influence on student advanced proficient achievement (Models 2, 3, 4, 5, 6, and 7: Beta coefficients ranged from .501 to .556, t scores ranged from 12.555 to 16.171, p for each of the six models = < .000).

Summary of the Seven Models that Regressed DFG and Identified Teacher Variables on Student Achievement at the Advanced Proficient Level, in Language Arts Literacy, as Measured by the NJ ASK 4

5. When controlling for DFG, what is the influence of the teacher variables identified by the New Jersey School Report Card on student achievement at the advanced proficient level, in language arts literacy, as measured by the NJ ASK 4?

When controlling for DFG, the teacher variables identified by the New Jersey School Report Card – faculty attendance, faculty credentials at the master and doctoral levels, and faculty NBC – were not found to have a significant influence on student achievement at the advanced proficient level, in language arts literacy, as measured by the NJ ASK 4. Instruction by faculty with credentials at the bachelor level, however, was found to have a small, significant, negative influence on student achievement at the advanced proficient level, in language arts literacy, as measured by the NJ ASK 4.

6. When controlling for DFG and other teacher variables identified by the New Jersey School Report Card, does designation of highly qualified teacher, as defined by
NCLB, have a significant influence on student achievement at the advanced proficient level, in language arts literacy, as measured by the NJ ASK 4?

When controlling for DFG and teacher variables identified by the New Jersey School Report Card, highly qualified teacher, as defined by NCLB, was not found to have a significant influence on student achievement at the advanced proficient level, in language arts literacy, as measured by the NJ ASK 4.
### Table 6

#### Analysis of the Variance in Student Achievement at the Partially Proficient Level, in Mathematics, as Measured by the NJ ASK 4

<table>
<thead>
<tr>
<th>Model</th>
<th>$F$</th>
<th>Sig.</th>
<th>Adj R²</th>
<th>Beta</th>
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*Note. *p* < .05

Model Building: Analysis of the Variance in Student Achievement at the Partially Proficient Level, in Mathematics, as Measured by the NJ ASK-4

The influence of DFG and identified teacher variables on student achievement was explored through linear regression, model building. Partially proficient achievement in the area of mathematics on the NJ ASK 4 was used as the measure of achievement. The resulting data is presented in Table 6.

Each of the seven models represented a linear equation that was significant in its ability to predict the variance in student NJ ASK 4 partially proficient mathematics scores.
The model that accounted for the smallest change in student scores, 8%, regressed achievement on the single independent variable, instruction by HQT (Model 1: $F = 49.574, p < .000$, adjusted $R^2 = .077$). The model that regressed achievement on the single independent variable, DFG, account for 40% of the variance in student achievement (Model 2: $F = 395.719, p < .000$, adjusted $R^2 = .403$). DFG has five times greater predictive value than HQT. Interpretation of the data suggested that combining DFG with teacher attendance added 1% explanatory power, and accounted for 41% of the variance in achievement (Model 3: $F = 203.719, p < .000$, adjusted $R^2 = .410$).

Combining DFG and faculty attendance with additional teacher variables identified by the New Jersey School Report Card resulted in equations that did not add to explanatory power of the equation (Model 4: $F = 82.771, p < .000$, adjusted $R^2 = .412$; Model 5: $F = 69.090, p < .000$, adjusted $R^2 = .412$). Two models considered combinations of faculty HQT. The first included the variables DFG, all faculty variables identified by the New Jersey School Report Card, and faculty HQT; the second was limited to DFG and faculty HQT. Each of these models predicted an additional 2%, for a total of 43%, of the change in student partially proficient achievement, in mathematics, measured by the NJ ASK 4 (Model 6: $F = 64.985, p < .000$ adjusted $R^2 = .434$; Model 7: $F = 218.596, p < .000$ adjusted $R^2 = .429$). Considering the number of variables in each model of the models, Model 7, with a combination of DFG and faculty HQT, was the strongest, and most parsimonious model, for explaining change in student partially proficient achievement, in mathematics, as measured by the NJ ASK 4.
Strength of the Variables:  DFG, Three Levels of Faculty Credentials – Bachelor, Master, Doctor – Faculty NBC, Faculty HQT

A significant impact was not suggested for any of the three levels of faculty credentials or faculty NBC. As the percent of faculty attendance increased, however, the percent of mathematics partially proficient scores decreased (Model 3: Beta = -.089, t = -2.717, p = .007; Model 4: Beta = -.084, t = -2.571, p = .010; Model 5: Beta = -.084, t = -2.557, p = .000; Model 6: Beta = -.091, t = -2.817, p = .005). Increased instruction faculty HQT also resulted in a decrease in percent of partially proficient scores. The influence of faculty PQT was strongest in isolation than when HQT was combined with DFG or the other teacher variables (Model 1: Beta = -.280, t = -7.041, p = .000; Model 6: Beta = -.161, t = -4.891, p = .000; Model 7: Beta = -.160, t = -5.811, p = .000). In each of the models increased DFG was found to result in the greatest reductions in partially proficient scores (Models 2 through 7: Beta coefficients = -.562 to -1.636, t scores = -1.500 to -19.893, significance was consistent at p = <.000).

Summary of the Seven Models that Regressed DFG and Identified Teacher Variables on Student Achievement at the Partially Proficient Level, in Mathematics, as Measured by the NJ ASK 4

7. When controlling for DFG, what is the influence of the teacher variables identified by the New Jersey School Report Card on student achievement at the partially proficient level, in mathematics, as measured by the NJ ASK 4?

When controlling for DFG the teacher variables identified by the New Jersey School Report Card – faculty credentials at the bachelor, master, and doctoral levels, and faculty NBC – were not found to have a significant influence on student achievement at
the partially proficient level, in mathematics, as measured by the NJ ASK 4. Increased faculty attendance, however, was found to have a significant negative influence on student partially proficient achievement, in mathematics, as measured by the NJ ASK 4.

8. When controlling for DFG and other teacher variables identified by the New Jersey School Report Card, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the partially proficient level, in mathematics, as measured by the NJ ASK 4?

When controlling for DFG and other teacher variables identified by the New Jersey School Report Card, the designation of faculty HQT, as defined by NCLB, was found to have a small, significant, negative influence on student achievement at the partially proficient level, in mathematics, as measured by the NJ ASK 4.
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Model Building: Analysis of the Variance in Student Achievement at the Proficient Level, in Mathematics, as Measured by the NJ ASK 4

Linear regression model building was used to investigate the explanatory power of teacher variables and DFG on student achievement. The measure of student achievement was NJ ASK-4, mathematics, proficient scores. The resulting data is presented in Table 7.

Seven linear regression models were compared. Each of the seven models was significant for explanation of change in NJ ASK 4, mathematics proficient achievement.
The model with the least explanatory power, 4%, regressed the single independent variable, faculty HQT on student achievement (Model 1: F = 26.455, p = < .000 adjusted R² = .042). The model that regressed the single independent variable, DFG, on student achievement had an explanatory power of 6% (Model 2: F = 38.194, p = < .000 adjusted R² = .060). Combining DFG with faculty attendance increased the explanatory power of the model by only 1%, resulting in an explanatory power of 7% (Model 3: F = 22.413, p = < .000, adjusted R² = .068). Adding faculty credentials, or faculty credentials and faculty NBC, to the equation added another 2%, for a total of 9%, explanatory power (Model 4: F = 12.731, p = < .000, adjusted R² = .091; Model 5: F = 10.596, p = < .000, adjusted R² = .090). The combination of DFG and faculty HQT, a more parsimonious model, also had an explanatory power of 9% (Model 7: F = 28.029, p = < .000, adjusted R² = .085). The model that best explained change in student achievement included both DFG and all other teacher variables. This model had an explanatory power of 11%, adding 2% more explanation of variance (Model 6: F = 10.954, p = < .000, adjusted R² = .107).

**Strength of the Variables:** DFG, Three Levels of Faculty Credentials – Bachelor, Master, Doctor – Faculty NBC, Faculty HQT

Faculty credentials at the bachelor and master levels, and faculty NBC were not found to have a significant influence on student achievement. In each model that included faculty attendance, increases in that variable were found to influence increased student achievement (Model 3: Beta = .103, t = 2.507, p = < .012; Model 4: Beta = .094, t = 2.407, p = .017; Model 5: Beta = .098, t = 2.401, p = < .017; Model 6: Beta = .104, t = 2.570, p = < .010). Conversely, increased instruction by faculty with doctoral credentials
influenced a significant decrease in mathematics proficient scores (Model 4: Beta = -.150, 
t = -3.709, p = < .000*; Model 5: Beta = -.150, t = -3.708, p = < .000*; Model 6: Beta = -.115, t = -2.784, p = < .006). Increased instruction by faculty HQT influenced a significant, positive impact on mathematics proficient scores. The power of the influence of faculty HQT was strongest in isolation; the power of the influence of faculty HQT decrease when considered in combination with DFG or other identified faculty variables. (Model 1: Beta = .208, t = 5.143, p = < .000; Model 6: Beta = .143, t = 3.450, p = < .001; Model 7: Beta = .166, t = 4.102, p = < .000). Of the independent variables considered in each of the seven models, the strongest, and most consistent influence on increased student proficient achievement in mathematics was DFG (Beta coefficients across the six models ranged from .214 to .248, t scores ranged from 4.490 to 6.180, p = < .000 for each model.)

Summary of the Seven Models that Regressed DFG and Identified Teacher Variables on Student Achievement at the Proficient Level, in Mathematics, as Measured by the NJ ASK 4

9. When controlling for DFG, what is the influence of the faculty variables identified by the New Jersey School Report Card on student achievement at the proficient level, in mathematics, as measured by the NJ ASK 4?

When controlling for DFG the faculty variables – faculty credentials at the bachelor and master levels, and faculty NBC – were not found to influence student achievement at the proficient level, in mathematics, as measured by the NJ ASK 4. When controlling for DFG, increased faculty attendance influenced a very small,
< 1%, significant, increase in proficient math scores. Conversely, when controlling for DFG increased instruction by faculty with doctoral credentials was found to influence decreases in student achievement at the proficient level, in mathematics, as measured by the NJ ASK 4.

10. When controlling for DFG and faculty variables identified by the New Jersey School Report Card, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the proficient level, in mathematics, as measured by the NJ ASK 4?

When controlling for DFG and faculty variables identified by the New Jersey School Report Card, the designation of highly qualified teacher, as defined by NCLB, was found to have a small, positive influence on student achievement at the proficient level, in mathematics, as measured by the NJ ASK 4.
Table 8

Analysis of the Variance of Student Achievement at the Advanced Proficient Level, in Mathematics, as Measured by the NAEP 84

<p>| Model 1 | 8.199 | .004* | .012 | .118 | 2.863 | .004* |
| Model 2 | 74.227 | .000* | .111 | .336 | 8.615 | .000* |
| Model 3 | 37.276 | .000* | .111 | .330 | 8.220 | .000* |
| Model 4 | 16.398 | .000* | .116 | .282 | 6.314 | .000* |
| Model 5 | 13.732 | .000* | .116 | .284 | 6.343 | .000* |</p>
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Note. *p = <.05

Model Building: Analysis of the Variance in Student Achievement at the Advanced Proficient Level, in Mathematics, as Measured by the NJ ASK 4

Table 8 represents seven linear regression models. The models were developed to investigate the influence of teacher variables and DFG on student achievement. The measure of student achievement was advanced proficient scores in mathematics on the NJ ASK 4.

All seven regression equations were significant for prediction of variance in advanced proficient mathematics scores.
Faculty HQT, when not combined with other independent variables, accounted for only 1% of the variance in advanced proficient mathematics scores (Model 1: \( F = 8.199, \ p = .004, \) adjusted \( R^2 = .012 \)). DFG, when not combined with other independent variables, accounted for 11% of the variance in scores (Model 2: \( F = 74.227, \ p < .000, \) adjusted \( R^2 = .111 \)). When DFG was combined with faculty HQT, the explanatory power of the equation remained at 11% (Model 3: \( F = 38.059, \ p = .000, \) adjusted \( R^2 = .113 \)). The equation that combined DFG with faculty attendance also had an explanatory power of 11% (Model 1: \( F = 37.276, \ p < .000, \) adjusted \( R^2 = .111 \)). Subsequent equations that added combinations of other identified faculty variables from the New Jersey School Report Card contributed < 1% additional explanatory power, for a total of 12%, to the equation (Model 4: \( F = 16.398, \ p < .000, \) adjusted \( R^2 = .115 \); Model 5: \( F = 13.732, \ p < .000, \) adjusted \( R^2 = .116 \). The predictive power of the equation remained consistent when faculty HQT was added to the Model (Model 6: \( F = 12.082, \ p < .000^*, \) adjusted \( R^2 = .117 \)).

*Strength of the Variables: DFG, Three Levels of Faculty Credentials – Bachelor, Master, Doctor – Faculty NBC, Faculty HQT*

Faculty attendance rate, faculty credentials at the master and doctoral levels, and faculty NBC were not found to have a significant influence on advanced proficient mathematics scores. When considered absent DFG or other teacher variables, faculty HQT significantly influenced scores (Model 1: \( \text{Beta} = .118, t = 2.863, p = .004 \)). When controlling for DFG or other identified teacher variables, the influence of faculty HQT was no longer significant. Instruction by faculty with credentials at the bachelor level had an inverse influence on advanced proficient scores (Model 4: \( \text{Beta} = -.123, t = - \)
2.034, \( p = .042 \); Model 5: Beta = -.124, \( t = -2.041, p = .042 \); Model 6: Beta = -.123, \( t = -2.034, p = .042 \). DFG was suggested to have the strongest, and most consistent significant, positive influence on NJ ASK 4 advanced proficient mathematics scores (across the six models Beta coefficients ranged from .274 to .336, \( t \) scores ranged from 6.046 to 8.615, significance was consistent at \( p = .000 \)).

**Summary of the Seven Models that Regressed DFG and Identified Teacher Variables on Student Achievement at the Advanced Proficient Level, in Mathematics, as Measured by the NJ ASK 4**

11. When controlling for DFG, what is the influence of the faculty variables identified by the *New Jersey School Report Card* on student achievement at the advanced proficient level, in mathematics, as measured by the NJ ASK 4?

   When controlling for DFG the faculty variables identified on the *New Jersey Report Card* – faculty attendance, faculty credentials at the master or doctoral levels, and faculty NBC – were not found to influence student achievement at the advanced proficient level, in mathematics, as measured by the NJ ASK 4. Instruction by faculty with credentials at the bachelor level was found to have a small, but significant, inverse influence on student achievement.

12. When controlling for DFG and faculty variables identified by the *New Jersey School Report Card*, does designation of highly qualified teacher, as defined by NCLB, have a significant influence on student achievement at the advanced proficient level, in mathematics, as measured by the NJ ASK 4?

   When controlling for DFG and faculty variables identified by the *New Jersey School Report Card*, the designation of highly qualified teacher, as defined by NCLB, was not
found to have a significant influence on student achievement at the advanced proficient level, in mathematics, as measured by the NJ ASK 4.

Summary

Table 9 represents the two curriculum areas, language arts literacy and mathematics, the three levels of proficiency for each of the curriculum areas—partially proficient, proficient, and advanced proficient—and the beta coefficients for each significant independent variable in each of the models. Although individual significance levels are not reflected in the table, the corresponding t scores were considered significant at $p < .05$. The beta coefficients for independent variables that were considered but not found to have a significant influence on student achievement are reflected as XXXXXX.

The Table suggests DPG had a consistent and significant influence on student achievement across and between curriculum areas.

In the curriculum area of language arts literacy, when controlling for DPG, faculty variables were found to have inconsistent influence on student achievement. Instruction by faculty at the master or doctoral levels, or instruction by faculty who have been awarded NBC was not found to have a significant influence on achievement at any measure of proficiency. As faculty attendance increased, however, there was a decrease in partially proficient achievement. Instruction by faculty at the bachelor level was also found to influence fewer students scoring at the advanced proficient level. Increased instruction by faculty HQT was found to influence reduction in partially proficient achievement and increase proficient achievement. When controlling for DPG instruction by HQT was not found to influence advanced proficient scores. It is noted that the
influence of any of the significant faculty variables was small relative to the impact of
district socioeconomic factors.

Findings in the curriculum area of mathematics also identified inconsistent and
small significant influences of faculty variables. Instruction by faculty with master-level
credentials or NBCT certification was not found to influence achievement at any
proficiency level. Increased instruction by faculty with doctoral credentials was found to
result in fewer students achieving at the proficient level. Increased instruction by faculty
with bachelor credentials resulted in fewer students achieving at the advanced proficient
level. Increased faculty attendance and increased instruction by faculty HQT each
reduced the percent of students achieving at the partially proficient level and increased
percent of students achieving at the proficient level. In agreement with language arts
literacy outcomes, district socioeconomic status was found to have the most consistent
and powerful influence on student achievement.
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CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Social, economic and political climates of the last half century continue to advance a philosophy of student achievement determined by teacher quality. Our schools are reflections of the social status of their communities. Economic climates within a community, especially those expressed through the local school tax levy, are statements of the value that community places on its schools. Federal and state politics now drive policy that influences instruction at the local school level. High stakes testing has become the judgment of student achievement, teacher quality, and school value. Each revision of the 1965 Elementary and Secondary Education Act (ESEA) has been an affirmation of a collective national trust that teacher excellence is the determinant of student excellence. The current authorization of ESEA, No Child Left Behind (NCLB), mandates 100% national trust by requiring 100% of the nation’s teachers to demonstrate Highly Qualified Teacher (HQT) status. The outcome of 100% HQT status is intended to be 100% student achievement proficiency. This policy has placed all of the nation’s collective academic achievement ‘eggs in one HQT basket’.

Criterion for designation of HQT falls within the narrow parameter of content knowledge. The construct of HQT is recently introduced. It does not have the benefit of substantial research investigation. As part of the literature review for this study, however, content knowledge, as well as broader variables of measure of teacher quality, were considered. There is a breath of research considering the influence of these
identified teacher variables on student achievement. There is not, unfortunately, broad agreement among researchers on which teacher variables have the greatest effect on student outcomes.

There is, however, research agreement that socioeconomic environment has a significant influence on student achievement outcomes. The Coleman Report (1966) introduced socioeconomic status (SES) as a viable, and perhaps controversial, influence on student performance. Nine years later the New Jersey Department of Education (NJDOE) developed and implemented the construct, district factor grouping (DFG), to represent levels of different socioeconomic status between school districts. When evaluating data, the NJDOE regularly consider DFG to reduce the variance between districts that results from socioeconomic differences. The Robinson v. Cahill (1972, 1973, 1975, 1976), and Abbott v. Burke (1985, 1990, 1994, 1997, 1998, 2000a, 2000b, 2002a, 2002b, 2003a, 2003b) judicial decisions have contributed to revised state school funding formulas in New Jersey. DFG was a foundation construct in each of these litigations.

Interpretation of data and policy decisions in New Jersey clearly acknowledge the influence of socioeconomic factors on student achievement outcomes. The New Jersey School Report Card, the annually published report of student outcomes, also identifies faculty variables that New Jersey considers relevant to student outcomes. When considering student achievement current national policy, however, does not required consideration of socioeconomic conditions or teacher variables beyond HQT, the construct introduced by NCLB.
Summary of Research Design

A linear multiple regression model building examination of equations that investigated the influence of teacher variables on student achievement. The teacher variables were faculty attendance, three levels of faculty credentials—bachelor of arts/bachelor of science, master of arts/master of science, and doctor of philosophy/doctor of education—faculty attainment of National Board Certification (NBC), and faculty designation as Highly Qualified Teacher. All the teacher variables except faculty HQT were selected because of their identification by the New Jersey School Report Card. HQT was selected because of the implied influence on student achievement outcomes given to this construct by recent federal legislative mandate. The measure of student achievement was scores on the NJ ASK 4 in the curriculum areas of language arts literacy and mathematics. Scores in each curriculum area were reported as percent partially proficient, percent proficient, and percent advanced proficient.

Model 1 identified the isolated influence of faculty HQT designation on student curriculum content achievement. The isolated predictive value of DFG was considered in Model 2. This predictive value of DFG was controlled for when considering the faculty variables that were introduced in subsequent models. Using hierarchical design, Models 3, 4, 5, and 6 sequentially added the teacher variables of faculty attendance, faculty credentials, faculty NBC, and faculty HQT designation to the linear equation. The last model, Model 7, studied the combined influence of DFG and faculty HQT designation.

The model designs were repeated for each of the curriculum areas at each of the three levels of achievement proficiency. This resulted in a total of 42 linear equations.
Review of Findings and Interpretations

In agreement with previous research, data resulting from the 42 linear regression equations supported significant influence of socioeconomic environment on student achievement. This significant influence of socioeconomic environment on student achievement was demonstrated across the two curriculum areas of language arts literacy and mathematics, and the three achievement levels of partially proficient, proficient and advanced proficient. At the partially proficient level an inverse influence was found, as student socioeconomic environment improved percent of partially proficient scores decreased. At the proficient and advanced proficient levels the direction of the influence was positive; enriched socioeconomic environments influenced improved student achievement.

In each curriculum domain the most powerful influence was evidenced at the partially proficient achievement level: improved socioeconomic environments resulted in relatively large decreases in the percent of students scoring at the partially proficient level in both language arts literacy and mathematics. Although significance was consistently demonstrated in both curriculum areas, strength of influence of socioeconomic environment was relatively more powerful in the language arts literacy domain than in the curriculum content area of mathematics.

In the curriculum content area of language arts literacy, the influence of enriched socioeconomic environment on achievement at both the proficient and advanced proficient levels was almost as strong as at the partially proficient level. At each of these achievement levels students from enriched socioeconomic environments demonstrated large achievement advances.
Students from enriched environments also achieved significantly higher levels of proficient and advanced proficient achievement in mathematics. Advances in mathematics achievement would be considered moderate, however, when compared to the stronger influence suggested for language arts literacy.

Having isolated the power of socioeconomic environment, the influence of teacher variables was next considered. When investigating the curriculum area of language arts literacy, there was some evidence suggesting schools with higher faculty attendance rates had fewer students achieving at the partially proficient level. This influence was inconsistent across the regression models and, when present, the influence of faculty attendance was ten times weaker than the predictive value of socioeconomic environment. The other teacher variables identified by the New Jersey Report Card, three levels of faculty credentials and faculty NBC, did not influence student achievement in language arts literacy at the partially proficient level.

When controlling for socioeconomic environment and investigating student achievement in language arts literacy at the proficient level, neither faculty attendance, the three levels of faculty credentials, nor faculty NBC were found to affect change in student scores. A relatively small inverse effect on achievement at the advanced proficient level, however, was suggested when students were instructed by faculty with credentials at the bachelor’s level. Faculty attendance, faculty credentials at the master’s or doctoral levels, and faculty NBC did not influence student achievement at this advanced proficient level in language arts literacy.

With the influence of socioeconomic environment and other faculty variables controlled, language arts literacy achievement of students instructed by teachers with
HQT designation was also considered. As instruction by teachers with HQT increased there were small decreases in students scoring at the partially proficient level and equally small increases in students achieving proficient level scores. Instruction by teachers with HQT designation did not result in change in scores for students at the advanced proficient level in language arts literacy.

Within the mathematics curriculum area, after controlling for socioeconomic environment, increases in faculty attendance were found to influence small decreases in student partially proficient scores. Instruction by faculty at any credential level or faculty NBC did not influence a change in student achievement. These results were consistent with results for language arts literacy at the same proficiency level.

When controlling for socioeconomic environment, increased faculty attendance also influenced small increases in student achievement in mathematics at the proficient level. Conversely, when instructed by faculty with doctoral credentials, there was a small reduction in proficient scores. Instruction by faculty at the bachelor’s or master’s levels, or by faculty NBC did not influence proficient mathematics scores.

In the curriculum area of mathematics, after considering socioeconomic environment, relatively fewer students instructed by faculty at the bachelor’s level achieved advanced proficient scores. Faculty attendance, instruction by faculty at other credential levels, or instruction by faculty NBC did not influence a change in student levels of achievement. These results were consistent with results for language arts literacy at the same proficiency level.

Continuing in the content area of mathematics, when controlling for socioeconomic environment and other faculty variables, instruction by faculty with HQT
designation influenced small decreases in partially proficient scores and small increases in proficient scores. Faculty HQT designation was not found to influence student achievement in mathematics at the advanced proficient level. After controlling for socioeconomic environment these findings for the influence of faculty HQT designation were consistent across the curriculum areas of language arts literacy and mathematics.

Summary of Findings

After controlling for the powerful influence of socioeconomic environment, there were several teacher variables that resulted in small, significant influences on student achievement.

In the curriculum content areas of both language arts literacy and mathematics, schools with higher faculty attendance rates had relatively fewer students achieve at the partially proficient levels, and relatively more students achieving proficient scores. At the proficient level of achievement in mathematics, faculty attendance continued to have a small, positive influence. Faculty attendance, however, did not influence scores at the proficient level of achievement in language arts literacy. Data indicated that faculty attendance did not influence student achievement at the advanced proficient level in either language arts literacy or mathematics.

Instruction by faculty holding bachelor’s credentials did not influence student achievement at the partially proficient or proficient levels in either language arts literacy or mathematics. Instruction by faculty with bachelor’s credentials, however, influenced fewer students achieving advanced proficient scores in both curriculum content areas of language arts literacy and mathematics. Instruction by faculty holding doctorial credentials influenced fewer students achieving proficiency scores in mathematics. The
remaining faculty variables identified by the New Jersey School Report Card were not found to influence student achievement in either curriculum content area. When teacher variables did influence achievement in either curriculum content area or at any proficiency level, the strength of that influence paled in comparison to the powerful influence of socioeconomic environment.

When controlling for DFG, instruction by faculty with designation of HQT, as defined by No Child Left Behind, influenced small reductions in percent students scoring at the partially proficient level and small increases in students achieving proficient scores. Instruction by faculty with designation of HQT did not influence student achievement at the advanced proficient level in either language arts literacy or mathematics. Consistent with the weak influential power of the other teacher variables, when compared to the powerful influence of socioeconomic status on student achievement, instruction by faculty with designation of HQT also had a relatively weak influence.

District Factor Group

Data from this study provided robust support for the powerful influence of socioeconomic environment on student achievement. This finding, most certainly, is not unique to this study. Establishing legal directive in the Brown v. Board of Education (1954) ruling, Supreme Court Chief Justice Earl Warren asserted, “In the field of public education, the doctrine of ‘separate but equal’ has no place. Separate educational facilities are inherently unequal.” Twelve years later research evidence supported barrister Warren’s claim. The Coleman Report (Coleman, 1966) concluded the large majority of children had similar school profiles; most children attended schools with other children of similar ethnicity and SES. Coleman also established school parity in the
areas of both teacher variables and instructional curriculum between schools with diverse ethnic majorities/SSES. Achievement profiles between children, however, were not similar. Despite parity between schools, children from lower socioeconomic environments did not achieve as well as children from enriched environments who attended similar schools. Further, this gap in achievement advanced with grade and age. Coleman concluded de facto educational segregation was the outcome of disparate socioeconomic environments, not differences in teacher variables, instructional curricula or schools. Since this 1966 report researchers have continued to contribute evidence to support Coleman’s conclusions. The courts in the state of New Jersey, as evidenced by both Robinson v. Cahill (1972, 1973, 1975, 1976) and Abbott v. Burke, (1985, 1990, 1994, 1997, 1998, 2000a, 2000b, 2002a, 2002b, 2003a, 2003b), have attempted to reconcile this de facto segregation through fiscal reform. Since the initial Abbott decision in 1985, New Jersey school districts with Abbott designation have received priority funding awards. This attempt for reconciliation has not resulted in the intended outcome of curriculum content achievement parity. Current research based in New Jersey (Anyon, 1995, 1997) and data from this study continue to identify socio-cultural conditions, not finances, as the more reliable and robust predictor of student outcomes.

Faculty Attendance

The learning and developmental theories proposed by Jean Piaget valued external organization as a contributor to the learning experience (Piaget, 1957). Piaget considered a change in teacher to be a disruption to external organization and a deterrent to the learning experience. Subsequent research has attempted to determine the validity of this theory. Studies by Elliott, Lewis, Manlove and Elliott, Ehrenberg and Rees, Morcango
and Woods, the New York Metropolitan School Study Council, and the Pennsylvania School Board Association (Ehrenberg et al., 1991; Elliott, 1979; Lewis, 1981; Manlove & Elliot, 1977; Mantagno & Woods, 1997; New York State Office of Educational Performance Review, 1974; Pennsylvania School Board Association Inc., 1978) provided some support for the value of teacher consistency. Recent studies by the New York Public Schools (New York City Public Schools Division of Assessment and Accountability, 2000) and another by A. P. Michel (2004) more specifically investigated the influence of teacher attendance rate on student curriculum content achievement. Their separate findings, however, did not support a significant impact on student achievement resulting from teacher attendance.

Previous studies defined student achievement in broad terms; this current study investigated the influence of teacher attendance on two distinct curricula and at three specific achievement levels. This differentiation of both curriculum and achievement levels contributes to the explanation of dissonance between previous research and the outcomes of this study. Data from this study suggested improved teacher attendance can influence a small reduction in partially proficient scores in both language arts literacy and mathematics. Improved teacher attendance also influenced a small increase in proficient achievement in the area of mathematics. Significant effects were not found for teacher attendance rate on student achievement at the proficient level in language arts literacy, or at the advanced proficient level for either language arts literacy or mathematics.

This study suggested influence of teacher attendance was curriculum area and achievement level specific, a consideration not made by previous research.
Data from this study demonstrated small and isolated influences resulting from level of faculty credentials on student achievement. Specifically, instruction by faculty with bachelor’s credentials influenced small reductions in student achievement at the advanced proficient level in both language arts literacy and mathematics. Also, instruction by faculty with doctoral credentials influenced small reductions in student achievement at the proficient level in mathematics. These small and isolated influences of faculty credentials on student achievement did not substantiate the intensity of debate for and against credentials currently engaged by other researchers.

At the center of the current debate over the value of teacher credentials are researchers L. Darling-Hammond, executive director or the National Commission on Teaching and America’s Future (Darling-Hammond, 2001), and K. Walsh, writing for the Abell Foundation (Walsh, 2001). Citing review of thirty years of research and her own investigations, Darling-Hammond aggressively supported the position that the level of teacher credentials influenced student achievement. Walsh, in disagreement, countered with her own research and review of previous study. Her interpretation of the research data was that teacher credentials did not equate to gains in student achievement. Counter-charges between the two are heated, each accusing the other of bias, misrepresentation, selectivity, inaccuracy, invalid measurement, questionable methodology and statistical errors. More precise attention to investigation, rather than the efforts that have gone into accusation, would benefit the research community.

Not all of the research addressing teacher credentials has sparked such controversy. Denton and Larcina, Ashton and Crocker, Denton and Peters, and Andrew
and Schwab (Andrew & Schwab, 1995; Ashton & Crocker, 1987; Denton & Lacina, 1984; Denton & Peters, 1988) were in agreement that instruction by teachers with advanced credentials influenced improved student achievement.

This current investigation supported influence of differentiated levels of teacher credential for specific curriculum and at defined achievement levels. This type of differentiation was not attempted by previous study.

**Faculty National Board Certification**

Interpretation of data resulting from broad scale research projects conducted in North Carolina, Arizona, and Miami-Dade County, Florida (Amrein-Beardsley et al., 2004; Cavalluzzo, 2004; Goldhaber & Anthony, 2004; Goldhaber et al., 2003) suggested improved student achievement when instruction was provided by teachers who held NBC. Results were strongest at the lower grade levels and for students from less affluent socioeconomic environments. This current research investigation did not find instruction by teachers with NBC to influence student achievement for either of the two curriculum areas or any of the three proficiency levels. A mitigating consideration may be the vested interest of the departments of education in North Carolina, Arizona, and Miami-Dade County in the NBC process. The departments of education in these geographic areas professionally and financially encourage teachers to obtain NBC. This study was limited to the state of New Jersey, a state that does not professionally or financially award teachers for NBC. Although faculty NBC is included on the New Jersey School Report Card, and thereby given tacit value, only 50 teachers in the state currently hold this certification. This small number of teachers was not sufficient to impact the resulting data.
Faculty Highly Qualified Teacher Designation

As previously stated, the construct of HQT is newly introduced by NCLB and lacking benefit of previous substantial research investigation. Although absent of substantial research investigation, HQT is not absent of controversy. The Public Agenda reported education professionals—teachers, principals, and superintendents—as valuing pedagogy above content knowledge. Support for pedagogy as the seminal value for instruction was also shared by parents, policymakers, and other stakeholders outside of the education profession (Parkes et al., 2000). Former Commissioner of Education, Rodney Paige, disagreed with pedagogy as the determining value of student curriculum content achievement (Paige, 2002). He suggested teacher verbal skills, teacher cognitive skills and agreement between subject area of teacher degree and subject area of teacher instruction as the determinants of teacher excellence. Consistent with her strong position on teacher credentials and her willingness to aggressively critique the dissenting position of others, Darling-Hammond was most uncomplimentary of the former Commissioner’s position (Darling-Hammond & Youngs, 2002). Darling-Hammond has charged that the report presenting Paige’s position misrepresented the cited findings, was not based on research evidence, and lacked the credibility of peer review.

P. W. Tupek (2003) recently published outcomes of the first robust investigation that included the influence of instruction by HQT on student achievement curriculum. Tupek’s population included 1,450 schools providing Grade 8 instruction in the state of Virginia. The measure of student achievement was the standardized assessment used by the state of Virginia. Tupek determined an inverse relationship between level of poverty and both student curriculum achievement and student access to instruction by HQT. Data
from this research, investigating a population of 1297 schools providing Grade 4
instruction in the state of New Jersey and using the state’s standardized assessment as the
measure of student curriculum achievement, lend support to Tuerk’s conclusions.

The data collected from this research suggested instruction by teachers with HQT
designation does influence a relatively small decrease in partially proficient scores and a
relatively small increase in proficient scores in the curriculum areas of both language arts
literacy and mathematics. No influence was evidenced for either curriculum area at the
advanced proficient level. It is expected that research later to be conducted will further
develop, augment, and support these findings.

Recommendations

An underlying premise of this investigation is that NCLB has powerful
implications for education, as well as for social, economic and political stakeholders.
Although most educators, and other stakeholders, may hesitate to argue the rhetoric of the
policy’s title and sound bites, there is no hesitation to argue against soundness of
practices resulting from the mandates of the policy. Attempting to reform student
achievement, teacher quality, and school practice, NCLB has taken on systemic change in
education. While this seems like a broad endeavor, I would argue that it is not broad
enough. Evidenced by the works of Coleman (1966), Anyon (1995, 1997), and Berliner
the robust data supporting the influence of socioeconomic environments, meaningful
systemic change in education must also consider the contributing social, economic and
political systems.
In a recent study with some similarities of research design and variables, A. P. Michel also considered the influence of socioeconomic environments and teacher variables on student achievement in New Jersey. Consistent with data from this study, Michel also concluded socioeconomic environment to be a more robust influence than teacher variables on student achievement. Michel (2004) postulated that "public schools have little, if any, control on the socioeconomic status of the communities they serve" (p. 145). He proceeded, therefore, to make recommendations exclusively addressing teacher variables. It has become increasingly more evident, however, that considering teacher variables independent of social, economic, and political milieu does not adequately address the pervasive learning environment of the student. This researcher will, therefore, make recommendations that integrate social, economic, and political, as well as teacher, influences on student achievement.

Policy Recommendations

Data resulting from the 42 regression equations examined by this study robustly identified socioeconomic environments as the seminal variable in determination of student achievement. Socioeconomic environment demonstrated consistent, powerful influence across the two curriculum areas and between the three levels of achievement. Teacher variables of attendance, level of credentials, and instructions by HQT, as defined by NCLB, each contributed a small influence on student achievement. Unlike socioeconomic environments, teacher variables including teacher HQT were not consistently significant between curriculum areas and within achievement levels. While the effects of socioeconomic environments must be considered, it would be imprudent to dismiss the influence of the teacher. When schools are in impoverished communities it is
“teacher professionalism” and a “culture of caring” (Getmore & Walker, 2000) that can contribute to the difference between school failure and student success.

The citizens of the state of New Jersey overwhelmingly prefer home rule to regionalization of school districts. While this imposes natural parameters of autonomy on local school governance, it also imposes natural parameters of segregation by community social, economic, and political delimiters. It is this segregation that defines the differentiated profiles of New Jersey’s 593 local school districts. Local school districts are not a random cross-representation of state-wide social, economic, and political environments; rather, the 593 local school districts are each community specific. Children born into the lower DFG districts are at health, housing, cultural, and financial disadvantage. By the time children from disadvantaged communities enter kindergarten they have spent their most formative first five years assimilating language, attitudes, and expectations that may be counter-productive to school, and possibly life, success. Most notably, they lack the school readiness experiences evidenced by their more affluent school aged counterparts. Even when disadvantaged children attend quality schools, the influences of their impoverished environments are not easily mitigated. Berliner (2009) reminded us that a student in a primary grade spends about 1000 hours a year in school and about 5000 waking hours a year in his or her neighborhood. Even after the child enters school the force of the community remains consistent, pervasive, and powerful.

districts. Federal policy, represented by HQT, presumes student achievement to be predicated by teacher quality; state policy, represented by *Abbott v Burke* (1985, 1990, 1994, 1997, 1998, 2000a, 2000b, 2002a, 2002b, 2003a, 2003b), presumes student (under)achievement to be predicated by parity funding. Six years after authorization of *NCLB* first mandated instruction by HQT and twenty years after the original *Abbott v. Burke* (1985) court order, New Jersey remains a state where socioeconomic environment continues to have a more powerful influence over student achievement than quality of teachers or sums of money provided to the district. The shared history between ESEA, *A Nation At-Risk, Goals 2000* and *NCLB* was previously discussed. Focusing on the classroom with indifference to the socioeconomic environment, *NCLB* now unfortunately shares the same narrow and flawed view of enriched, pervasive, learning environment as its failed policy predecessors.

Based on the findings of this study, and supported by New Jersey’s current profile of socioeconomic environment as the seminal influence on student achievement, the following policy considerations are proposed:

1. **Assume a reflective policy review practice toward *NCLB***. A reflective practice is necessary to consider the objective value of HQT. The initial authorization of *NCLB* mandated full implementation by 2006. As we face that deadline, we have not sufficiently surveyed HQT implementation or outcomes. Reflection is considered a best practice in education; reflection should also be a practice of educational policy.

2. **Assume a reflective policy review practice toward parameters and outcomes of *Abbott v Burke* funding**. By court order, Abbott districts receive parity funding to
implement quality school programs. But parity funding has not provided parity outcomes. Educational influences occur in school, equal or greater educational influences occur in the community and environments. Parity outcomes require parity influences in each of these environments.

3. Consider policy and practice that would comprehensively unify school and community environments. Initiating separate school reform and community development projects have proven to be counter-productive. Pre-existing Abbott funding may more effectively be used to develop parity, pervasive, child-centered environments. Parity reform initiatives would integrate education as well as health care, child care, family services, affordable housing, neighborhood infrastructure, careers development, wage equity, library and cultural events.

In this fully integrated model service providers would be jointly housed in school and community facilities. The school would assume a broader reform role by opening its doors to community services after instructional hours. School staff, initially those who are knowledgeable of health, family, housing, careers and cultural development would partner with community service providers. A successful small scale demonstration of this model is currently in practice in some school districts. Local YMCA's or other similar organization, provide before or after care services in the local schools. Employment for staffing this service is open to community members as well as school staff. Given the physical environment of the school building and knowledgeable personnel on staff, this model could initially be expanded to include parent training workshops, child health and safety seminars, adult career training, financial planning and cultural
events. Long term projects could address housing, commercial development, and infrastructure improvement.

4. Immediate reflection on instructional practice is recommended. At the school level, practices that reward teacher attendance should be implemented. Faculty with the highest level of academic credentials should provide instruction to the lowest achieving classes. Teachers with HQT designation would most effectively be assigned to classes of underperforming students. Incorporating the regulation of these practices in contractual negotiations would designate clear parameters for their implementation. This recommendation for practice is consistent with previous research investigating the influence of teacher variables on student achievement, and the data addressing faculty HQT that is suggested by this study.

5. Assume reflective policy and practice toward teacher training, teacher employment, and teacher professional development requirements. Outcomes of this investigation identified attendance, level of credentials, and HQT designation as the teacher variables that influence student achievement. Teacher training programs should consider expanding opportunities to earn HQT and advanced credentials, either in conjunction with original teacher certification or by providing more teacher friendly opportunities for currently certified professionals to obtain HQT designation and to advance their level of accreditation. The ND DOE or local districts may consider policy and practice of setting higher standards for initial employment to include holding an advanced degree or obtaining an advanced degree as a requirement for continued employment.
Professional development initiatives by the NJDOE, state associations and local professional development committees should include more options for achieving not only HQT designation and advanced credentials, but meaningful, quality and on-going professional development. Since HQT is evidenced by accruing credits from course work, workshops or other professional development activities that represent content knowledge, then those activities must be high quality. High quality course work, workshops and professional development activities would then by evidence of meaningful professional growth. Professional development certificates that validate engagement, not document attendance, would contribute to the advancement of highly qualified teaching professionals.

Initial review of these five recommendations may appear overly ambitious and fiscally unrealistic. I remind the reader of our history of extensive, expensive and unrealized school reform. We should not continue to tread the less resistant policy simply because it is less resistant. Further, two seminal and achievable paradigm reorganizations are necessary for implementation of these recommendations.

The first paradigm reorganization requires meaningful unification of school and community reform. Separate school and neighborhood initiatives are occurring to varying extents in most districts and communities. A philosophical reorganization from independent to unified reform is a reasonable prerequisite for implementation of these recommendations. The second paradigm is a philosophical reorganization of fiscal resources to provide foundation funding to initiate these recommendations. Federal, state, and local appropriations already designated for separate school and community
projects could be reallocated for unified recommendation implementation. This reallocation should include Abbott funds already designated for education reform. The elements for implementation of the five recommendations are available; their systems require reorganization.

Research Recommendations

1. This study should be replicated annually to validate current outcomes and to consider possible longitudinal changes in teacher and student achievement profiles.

   This is an initial study in the state of New Jersey to address teacher HQT designation. All data was available from NJDOE data bases. It was necessary, however, to collect data from several data bases and reorganize data into one spreadsheet. This process was time intensive and, considering current technology, inefficient. NJDOE reorganization of these data bases into a single data base that contains all HQT data would allow for efficient, on-going, longitudinal study of influence of HQT on student achievement.

2. Similar studies investigating influence of teacher variables including HQT on student achievement within each of the DFGs should be considered.

   Studies that are DFG specific would allow identification and examination of unique difference within DFG. The broad questions to be considered are: Why do some schools in less affluent DFGs do well?, and Why do some schools in privileged DFGs under-perform? Identification of schools that achieve as outliers within their DFG should be further studied.

3. This study should be expanded to consider the influence of teacher variables,
including HQT designation, on student achievement in other curriculum areas and at other grade levels.

This current study was limited to the curriculum areas of language arts literacy and mathematics in Grade 4. Initially state-wide standardized achievement was assessed at Grades 4, 8, and 11. It is the intent of the NJDOE to expand state-wide assessment to other curriculum areas and grade levels. Knowledge of differences within curriculum areas and between grade levels would allow specificity when planning professional development, diagnostic assignment of teaching staff, and implementation of prescriptive instruction designed to improve student achievement.

4. It is recommended that further research in New Jersey more exactly consider the outcomes found by Tuerk in Virginia. Specific research questions to address Tuerk’s findings would be:

   a. Does DFG influence differential access to instruction by HQT in New Jersey?
   b. If DFG does influence differential access to instruction by HQT in New Jersey, is that differential access influence student curriculum content achievement?

Caveats

From initial implementation of the 1965 Elementary and Secondary Education Act through its current 2002 reauthorization as No Child Left Behind, federal education policy has advanced an apparently admirable philosophy, to advance student achievement through advanced teacher quality. To insure compliance with federal philosophy and directives, ESEA replaced the previous general funding formula with a
categorical aid model. This federal comptroller provision inflicted a forced compliance on state and local school districts. At the state and local levels, admirable philosophy is inevitable lost to forced compliance. It is the threat of lost revenue, not a shared vision, which directs state and local compliance. This is not a productive approach to authentic reform. One hundred percent accountability and Highly Qualified Teacher replaced previous policy compliance jargon: rigorous and measurable standards/strengthening instructional context and increased professional standards, clear and rigorous standards for student achievement and quality of teaching. A basic tenet of successful implementation of change is to include all stakeholders in development of the process. Vested stakeholders at state and local levels continue to be excluded from meaningful federal education policy development. Vested stakeholders, therefore, maintain a sense of alienation from the process and its outcomes. Despite impressive rhetoric and soundbites the directives of NCLB are not accepted by state or local stakeholders. Legal challenges to NCLB, initiated by the states of Connecticut, Virginia, Maryland Oregon and Texas, manifest the pervasive resistance to, and resentment of, this federal policy. Compliance is driven by categorical aide. A more reflective philosophy toward policy development and implementation, one that replaces funding driven compliance with initiatives resulting from shared vision, would promote community systems vested in student achievement, social equity, judicious use of financial resources and political agenda that advances education.
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