PERSONNEL ALLOCATION IN MIDDLE SCHOOLS IN THE STATE OF NEW JERSEY: AN EXAMINATION OF SCHOOL CONTEXT, ACCOUNTABILITY PRESSURE, AND TEACHER ASSIGNMENTS

BY

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ABSTRACT OF THE DISSERTATION

The key focus of the No Child Left Behind Act of 2001 was to improve public education for all students in the United States, with an emphasis on closing the achievement gap between advantaged and disadvantaged students (Kantor & Lowe, 2006; Linn, Baker & Betebenner, 2002). The notion behind NCLB, to close the achievement gap, was praised, even by the Act's opponents (Kantor & Lowe, 2006; Hursh, 2007). However, the methods and systems mandated by the Act to meet this goal were met with controversy, as were the studies and data that supported the system of high-stakes testing for driving gains in student achievement (Ellis, 2007; Hursh, 2007; Jones, 2007; Karen, 2005; Linn, Baker & Betebenner, 2002; Nelson et. al., 2007; Nichols, 2007; Roach & Frank, 2007; Vasquez-Heilig & Darling-Hammond, 2008).

Many unforeseen consequences have occurred that are likely a result of the individual states adopting and enforcing high-stakes testing programs as mandated by NCLB. The narrowing of the curriculum (Dillon, 2006; Ellis, 2007; Hursh, 2007; Jones, Jones, & Hargrove, 2003; Kohn, 2000; Kozol, 2005; McNeil, 2000), an increased focus on basic-skills only education (Booher-Jennings, 2005; Ellis, 2007; Kohn, 2000), the reduction of attention and time devoted to non-tested subject areas (Dillon, 2006; Kantor & Lowe, 2006; Marx & Harris, 2006; Parsad & Spiegelman, 2012; Winstead, 2011) , and

the elimination of low-performing students from school (Kohn, 2000; Nichols & Berliner, 2008; Vasquez-Heilig & Darling-Hammond, 2008) have all been observed and documented. Some researchers have reported the extreme; that NCLB has led to a widening of the achievement gap between white and non-white students (Hursh, 2007) and has decreased the quality and availability of education to minority students, low-income students, and students in schools which struggle to meet federal NCLB benchmark scores (Kohn, 2000; Vasquez-Heilig & Darling-Hammond, 2008).

The results and implications of these findings are a cause for concern. This dissertation addresses the need for additional research into this area by adding to the knowledge base that currently exists relating to the study of personnel resource allocations of school districts in different "contexts", or demographic situations (Brent, Roellke, and Monk 1997; Monk and Hussain, 2000; Baker, 2003; Sipple & Killeen, 2004; Killeen & Sipple, 2005; Baker, 2012). The goal of this research was to uncover data trends in staff resource allocation patterns in the three hundred and two middle schools in the state of New Jersey. Descriptive statistics relating to staff resource allocation in sixteen different curricular areas in four socioeconomic status context groups and four accountability pressure context groups were examined. The data gathered for this study supports the above-stated claims that NCLB has negative unintended side effects which may actually decrease the quality and robustness of the public education offered to all students.

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CHAPTER I

INTRODUCTION

During the last decade, one of the most frequently discussed, and debated, topics in the field of education has been the No Child Left Behind Act of 2001. This Act is certainly the most widespread and detailed piece of legislation regarding education on a national level since the Elementary and Secondary Education Act of 1965 (Ellis, 2007).

The key focus of the No Child Left Behind Act (2001) was to improve public education for all students in the United States, with a focus on closing the achievement gap between advantaged and disadvantaged students (Kantor & Lowe, 2006; Linn, Baker & Betebenner, 2002). The notion behind NCLB, to close the achievement gap, was praised, even by the Act's opponents (Kantor & Lowe, 2006; Hursh, 2007). However, the methods and systems mandated by the Act to meet this goal were met with controversy, as were the studies and data that supported the system of high-stakes testing for driving gains in student achievement (Ellis, 2007; Hursh, 2007; Jones, 2007; Karen, 2005; Linn, Baker & Betebenner, 2002; Nelson et. al., 2007; Nichols, 2007; Roach & Frank, 2007; Vasquez-Heilig & Darling-Hammond, 2008).

Many unforeseen consequences have occurred that are likely a result of the individual states adopting and enforcing high-stakes testing programs as mandated by NCLB. The narrowing of the curriculum (Dillon, 2006; Ellis, 2007; Hursh, 2007; Jones, Jones, & Hargrove, 2003; Kohn, 2000; Kozol, 2005; McNeil, 2000), an increased focus on basic-skills only education (Booher-Jennings, 2005; Ellis, 2007; Kohn, 2000), the reduction of attention and time devoted to non-tested subject areas (Dillon, 2006; Kantor & Lowe, 2006; Marx & Harris, 2006; Parsad & Spiegelman, 2012; Winstead, 2011) , and the elimination of low-performing students from schools (Kohn, 2000; Nichols & Berliner, 2008; Vasquez-Heilig & Darling-Hammond, 2008) have all been observed and documented. Some researchers have reported the extreme; that NCLB has led to a widening of the achievement gap between white and non-white students (Hursh, 2007) and has decreased the quality and availability of education to minority students, low-income students, and students in schools which struggle to meet federal NCLB benchmark scores (Kohn, 2000; Vasquez-Heilig & Darling-Hammond, 2008).

The results and implications of these findings are a cause for concern. It is clear that there is a need for further research to explore these observations in more depth and from various angles. This dissertation partially addressed this need by adding to the knowledge base that currently exists in the area of studying personnel resource allocations of school districts in different “contexts”, or demographic situations (Brent, Roellke, and Monk 1997; Monk and Hussain, 2000; Baker, 2003; Sipple & Killeen, 2004; Killeen & Sipple, 2005; Baker, 2012).

The goal of this study was to uncover data trends in staff resource allocation patterns in the three hundred and two middle schools in the state of New Jersey. Descriptive statistics relating to staff resource allocation in sixteen different curricular areas in four socioeconomic status context groups and four accountability pressure context groups were examined. This served to identify any staffing trends that were common within certain context groups, as well as to discern if significant staffing differences exist between different context groups. The data gathered for this study from various socioeconomic status and accountability pressure context groups of schools supports the above-stated claims that NCLB has unintended side effects which may actually decrease the quality and robustness of the public education offered to all students. Ironically, the data may support the idea that high-stakes testing has been detrimental to the disadvantaged and poorly performing students that NCLB was designed to benefit the most.

Purpose of the Study

The purpose of this study was to examine the distribution of teaching staff personnel in the three hundred and two middle schools in the state of New Jersey. In addition to providing descriptive statistics relating to the average distribution of personnel statewide, the allocation of personnel in schools of various contexts were examined and compared to the state average, as well as to other context groups. The potential effects of federal and state accountability systems on personnel assignments were also investigated by examining personnel allocations to the various curricular areas and changes in these allocations over the twelve year period from 1999-2011, including a period of time both before and after the installation of the No Child Left Behind Act.

Unintended consequences of accountability systems are discussed, as are interesting trends regarding personnel allocations. The data reveal that although accountability systems were originally implemented to provide an equitable and higher quality education to all students, the inadvertent result seems to have been to provide a narrow and intensive study of standardized-test based concepts and curricula, particularly to schools in lower socioeconomic status communities and to schools with a history of poor performance on state mandated tests. The observation that the increased focus on tested subject areas is done at the expense of the science, social studies, arts, and world language areas leads to the argument that these accountability systems are actually limiting the quality and richness of the education offered to the very students that were targeted for the most improvement by NCLB.

Research Questions

1. How are personnel resources currently distributed in New Jersey middle schools, on average, within the following context groups?
    a) All New Jersey Middle Schools
    b) Low Socioeconomic Status Middle Schools
    c) High Socioeconomic Status Middle Schools
    d) Middle Schools Experiencing Low Pressure from No Child Left Behind
    e) Middle Schools Experiencing High Pressure from No Child Left Behind

2. When schools are disaggregated by the contexts listed below, are personnel resources distributed in a manner that is significantly different from the current New Jersey state average?
    a) Low Socioeconomic Status Middle Schools
    b) High Socioeconomic Status Middle Schools
    c) Middle Schools Experiencing Low Pressure from No Child Left Behind
    d) Middle Schools Experiencing High Pressure from No Child Left Behind

3. Over the last decade, was there a significant shift in average personnel allocation in New Jersey middle schools in the following subject areas?
    a) Mathematics
    b) English Language Arts and Literacy
    c) Science
    d) Social Studies
    e) World Language
    f) Visual and Performing Arts

4. In New Jersey middle schools, does a relationship exist between the socioeconomic context of a school and the changes in personnel allocation by subject area over time?

5. Do any relationships exist between personnel allocations in New Jersey middle schools and the schools' "No Child Left Behind" accountability pressure status?

CHAPTER II

REVIEW OF THE LITERATURE

Foundations of Accountability in Education

The basis for the development of accountability systems can be traced back to the ideas of scientific management originated by Max Weber and Frederick Taylor during the late 1800s and early 1900s.

Max Weber focused on the efficiency of organizations, and expressed that bureaucracy was the organizational manifestation of the rational spirit. Bureaucracy was driven mostly by competitive spirit, and a need to increase efficiency and organization towards the accomplishment of a shared goal (DiMaggio & Powell, 1983). True bureaucracies, according to Weber, existed based upon appointed, and not elected, hierarchical organization (Weber, 1978, p. 221) as is the case in the typical school district in New Jersey. Whether it was to create control over staff, citizens or religious followers, to increase marketplace efficiency, or to establish equal protection for citizens under the law, bureaucracy was not only the best way to accomplish this task; it was practically an infectious concept once it began to take hold (DiMaggio & Powell, 1983).

Frederick Winslow Taylor was one of the founding fathers of scientific management theory. Also a proponent of efficiency and rational organization, Taylor's model of scientific management included managers utilizing 'scientific' methods to determine the most efficient manner in which to complete factory tasks. The tasks were broken down to the individual worker level. Each worker was to accomplish their set of tasks in a prescribed manner and an exact order to maximize efficiency. This process came to be known as "Taylorism" (Noble, 1977).

The bureaucracy-based nature of school districts paired with a need for increased efficiency led to a marriage of the theories of Weber and Taylor: a system of testing for efficiency was created. Workers at all levels: students, teachers, administrators, and state officials would be tested and monitored to find the "one efficient way" to complete the task of educating a child. Close monitoring of "worker performance" would take place to ensure efficiency and the achievement of a set of shared goals and standards. Dr. Wayne Au (2011), argued that the increased pressures due to standardized testing have increasingly forced Taylor's model of scientific management into the classroom. Standardization and narrowing of the curriculum as well as the strict alignment of the curriculum with state-mandated tests have contributed to the factory-like teaching model that can be observed in certain schools nationwide (Au, 2011).

As stated by DiMaggio and Powell (1983), Weber believed that the concept of bureaucracy was infectious. We can certainly see the infectious nature of the bureaucracy of educational accountability systems when we examine the history of three of the most significant occurrences to shape modern education in the United States: The Elementary and Secondary Education Act of 1965, the Texas education reforms which began in the late 1980s and early 1990s, and the passage of the No Child Left Behind Act in 2001. The Elementary and Secondary Education Act (ESEA) of 1965 was born out of the post-Sputnik era concerns held by many in the United States government about the need for increasing the quality of education for all American students after the loss of the initial phase of the space race, and resulted in the first nationwide implementation of minimum competency tests for students in order to obtain a diploma (Nichols & Berliner, 2008). The Texas state legislature adopted their first minimum competency test requirements for graduation in 1987, and over time increased the accountability system to include a state-mandated curriculum as well as statewide standardized testing in multiple grade levels (Heilig & Darling-Hammond, 2008). It is widely accepted that the Texas model was the driving force behind President G.W. Bush's adoption of the No Child Left Behind Act of 2001, which created a nationwide accountability system and the need for oversight on the state and federal levels (Heilig & Darling-Hammond, 2008).

Prior to the ESEA, the first example of a widely utilized standardized testing procedure in public schools in the United States was in 1845 in the Boston Public Schools (Garrison, 2009). Horace Mann was interested both in increasing the efficiency of Boston's public schools, as well as in reforming what he viewed as a situation of failure to properly and thoroughly educate the students of the Boston schools (Garrison, 2009); thus, even more than 150 years ago, one can argue that the motivations behind designing a standardized testing system were the same as they are today. Garrison (2009) stated that the main driving force behind Mann's implementation of the citywide testing program was to increase the supervisory authority of the state over the public education system.

Another widely known standardized test, the Stanford-Binet Intelligence Scale, began its development in France by Alfred Binet and several colleagues in an effort to identify students by groups; an early form of "tracking" that was designed to separate students who were and were not capable of benefitting from "normal instruction" (Garrison, 2009). This test was then imported to the United States in 1916, adapted by Stanford psychologist Lewis Terman, and renamed the Stanford-Binet Intelligence Test (Garrison, 2009). Over the past century, this test has been widely used in the United

States to test grade-school children to determine their IQ score. Although generally low-stakes in terms of consequences for teachers, schools, or districts, the contrary is often true for students as a minimum score has widely and historically been required for acceptance or placement in certain course offerings or programs in elementary, middle, and high schools across the United States.

Garrison (2009) believes that standardized tests are, and always have been, a reform tool utilized by those in a more politically powerful class to shape the future generations of a particular society into their chosen model for civilization. He also believes that when done incorrectly, utilizing standardized testing to mark public schools as failures are both an attack on the public schooling system itself and on those people who work in the public schools. In regards to current testing mandates in America, Garrison (2009) states: "it is an effort, among other things, to assimilate Americans to a lower standard of education, not a higher one" (p.113).

Garrison (2009) put forth the following:

> "The thesis is that the standards used to judge the success of schools have changed, and that this change in standards is about shifts in power and purpose, not 'school improvement'" (p.4).

Limitations of Standardized Testing

Although there are certainly data collection benefits to standardized testing, and the correct type of testing may be valuable in testing students' comparative skills in certain academic areas, the model of standardized testing does possess inherent limitations. One such limit is that the tests are not very good at measuring the entire curricula that are presented during the course of the school year (Nichols & Berliner, 2008). Another limit of standardized testing, referred to as "Campbell's Law" is the suggestion that due to its wide usage and the weight given to the practice, standardized testing itself is inherently susceptible to corruption and distortion. Campbell's Law is quoted as "the more any quantitative social indicator is used for social decision-making, the more subject it will be to corruption pressures and the more apt it will be to distort and corrupt the social process it was intended to monitor" (Madaus & Clark, 2001; Nichols & Berliner, 2008). As early as 1975, Campbell warned of the problems that would be associated with an excessive focus on one primary indicator of success or failure when observing or monitoring a complex social phenomena, such as education (Nichols & Berliner, 2008).

One of the key limitations of standardized testing has been the historical correlation between socioeconomic status and student scores. A study conducted in 1992 found that four variables not associated with classroom learning, namely: number of parents living at home, level of parental education, community type, and state poverty rates accounted for most of the variation observed in students' standardized test scores (Robinson & Brandon, 1994). Kohn (2000) points out that in addition to the very high correlation of test scores to family income, many test questions contain references or situations that are familiar to middle-class or higher white students, leaving students of lower socioeconomic status or of particular racial or ethnic heritage at a disadvantage.

The multiple-choice format of the standardized test has also been associated with a lack of ability to measure "more complex cognitive abilities" (Frederiksen, 1984). Darling-Hammond (2006) also discussed the limitations of the multiple-choice format utilized in the United States when compared with oral and essay assessments implemented in countries in Europe and Asia. Frederiksen (1984) also cautions that what is most economically and easily tested becomes what is taught, therefore executing bias against concepts that are not easily evaluated via the economical multiple-choice format. Also discussed by Frederiksen is the fact that most problems encountered in real-life settings are “ill-structured” and all questions on a multiple-choice standardized test are “well-structured” by design. The differences in these types of questions results in that each type requires a different set of problem-solving skills. Unfortunately, when a greater importance is placed on standardized test performance, the “well-structured” problem solving skills are stressed, thereby reducing classroom time spent on more “ill-structured” problem solving skills that are actually more relevant to real life situations.

Another limitation of standardized testing is that there is the possibility of students who do understand a concept answering incorrectly, and students who do not understand a concept thoroughly choosing the correct response. Kohn (2000) mentioned the fact that students without a thorough understanding of a concept, say division, but who had correctly memorized the necessary formulas could in some instances respond correctly on a standardized test, whereas a student with a thorough understanding of the concept but who had made a simple calculation error would be marked as answering incorrectly. Kohn (2000) stated that in this case, it was possible to misclassify students who did in fact understand concepts as not understanding, and to also errantly identify students as having a mastery of a concept when they may have simply made a lucky guess or have a minimal understanding of a basic mathematical skill. This once again may be a case in which a student with minimal depth of understanding could actually score higher than a student with a greater depth of understanding.

Unintended Consequences of High-Stakes Testing

The main goal of the NCLB Act of 2001 was to ensure that all students received a high-quality and equitable education that met basic standards of achievement. The beginning of the Statement of Purpose of No Child Left Behind Act of 2001 reads as follows:

> "The purpose of this title is to ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic assessments."

The well-meaning goal of accountability for educational and school district personnel was developed in an effort to ensure the success of all students. The current wide-reaching implementation of standardized testing is a direct result of the passage of NCLB (Kohn, 2000). It is NCLB which requires states to adopt an accountability system by which students are tested frequently by statewide standardized tests, and low scores or insufficient gains in student achievement often result in significant negative consequences for teachers, schools, or school districts (Nichols & Berliner, 2008). Legislators most likely intended to utilize legislation such as No Child Left Behind as a way to guarantee that teachers and school administrators would work harder to meet the needs of all students, resulting in every child having a high quality education, and therefore more high-achieving, well-rounded, and well educated young people. Nichols and Berliner (2008), however, argue that NCLB is a flawed piece of legislation that does not meet the goals that it initially set out to obtain, does not decrease the achievement gap, and actually results in an increase in dropout rates.

Unfortunately, several negative consequences of the high-stakes testing mandated by NCLB have been observed. Some such consequences have been: narrowing of the curriculum (Dillon, 2006; Ellis, 2007; Hursh, 2007; Jones, Jones, & Hargrove, 2003; Kohn, 2000; Kozol, 2005; McNeil, 2000), increased basic-skills only education (Booher-Jennings, 2005; Ellis, 2007; Kohn, 2000), the reduction of attention and time devoted to non-tested subject areas (Dillon, 2006; Kantor & Lowe, 2006; Parsad & Spiegelman, 2012; Winstead, 2011), decreased teacher morale particularly when deemed to be in a "failing" school (Booher-Jennings, 2005), an increase in drop-out rates (Booher-Jennings, 2005; Heilig & Darling-Hammond, 2008), and subsequently an overall decrease in educational opportunity especially for those students in lower performing schools (Darling-Hammond, 2006; Kantor & Lowe, 2006). Booher-Jennings (2005) cited a case in Texas where resources and teacher efforts were purposely shifted away from "hopeless" students – those without a chance to pass the state test – and redirected towards "bubble kids" (those on the cusp of passing the test) and other "accountables" (students whose scores would count for the state). "Passers" (students with a relative certainty of passing the test) were not given much focus or an enriched curriculum as they were mostly guaranteed to pass the test with little assistance, and special education students, who were exempt from the school's score ratings, were virtually ignored.

Multiple cases have also been cited where the students with learning challenges or with historically low standardized test performance become seen as a "liability" to the school or the teacher (Apple, 2001; Booher-Jennings, 2005; Kohn, 2000; Nichols & Berliner, 2008). Apple (2001) states the evolving problem clearly: "the emphasis shifts from student needs to student performance and from what the school does for the student to what the student does for the school" (p. 71).

Jones (2007) noted that high-stakes testing can limit a teacher's creativity and self-determination, limit their intrinsic motivation for teaching, lower their morale, and turn schools into a "drudgery for teachers and students alike" (p.73). This may eventually be associated with a decrease in both teacher effectiveness and student attendance. Also important to mention is the increased drop-out rates that have been observed in states such as Texas, where high-stakes testing results in many students being retained and subsequently dropping out of high school once their age requirement is met (Heilig & Darling-Hammond, 2008). Nichols and Berliner (2008) also cite increased dropout rates as a side effect of NCLB.

Booher-Jennings (2005) also noted a decrease in teachers' cooperation and collaboration with their peers when working in environments of high pressure to increase test scores. A loss of trust, collegiality and goodwill amongst colleagues was also observed in high accountability pressure school environments (Booher-Jennings, 2005). Teachers with lower performing students were often seen as inferior by their colleagues (Booher-Jennings, 2005; Kohn, 2000), and sometimes viewed as not being team players or as believing strongly enough in the mission or goals of the school (Booher-Jennings, 2005).

Several researchers have also identified incidents of cheating on the test, either by altering the pool of tested students in an unethical manner (Booher-Jennings, 2005; Nichols & Berliner, 2008), manipulating data on a district or state level (Nichols & Berliner, 2008), or altering, directly or indirectly, student responses prior to the submission of the test for scoring. Nichols and Berliner (2008) cited a study in Chicago completed by Jacob and Levitt (2002) in which a minimum of 4% to 5% of teachers were determined to be cheating to some extent on the Iowa Test of Basic Skills being administered in their classrooms. Another survey conducted by a newspaper in Tennessee, also cited by Nichols and Berliner (2008), found that nearly 9% of teachers surveyed reported witnessing acts that were ethically questionable relating to the statewide high-stakes exam, including adults altering student answer documents, lower performing students being prevented from taking the assessment, and teachers prompting students during the exam to rethink responses to specific questions (Edmondson, 2003). Nichols and Berliner (2008) also cite incidents of adults preparing the students by providing test questions ahead of time illegally, teachers directing students toward correct responses during testing, and adults within the school (including teachers, principals, and school counselors) altering the student responses on the official testing documents.

Perhaps some of the most regrettable unintended consequences of standardized testing are those that result in direct emotional stress or damage to the students themselves, many of whom are tested as early as third grade nationwide. Nichols and Berliner (2008) state that in their research, they have evidence of "hundreds of reports" indicating cases of student anxiety or stress. An article in the New York Times by Herzenhorn (2006) stated that test anxiety amongst students in New York schools had risen to a level that which it became necessary for school social workers to design programs and lectures to reduce student stress. Student morale has also been observed to have been negatively affected due to testing, particularly the morale of students who are English Language Learners or who have difficulty succeeding in testing situations (Nichols & Berliner, 2008). In several cases, repeated test failure has been demoralizing to students and has most likely been a contributing factor to students dropping out of school (Nichols & Berliner, 2008).

One may ask, with all of these negative unintended consequences of testing, why it is still such a readily accepted practice in America? Nichols and Berliner (2008) attribute the pervasiveness and wide acceptance of standardized testing in America to both the belief by the government and by business leaders that the future of the country's economy depends on a highly educated workforce and also due to:

> "the co-evolution of the prominence of business and accountability in our daily lives. Accountability in education is modeled on corporate efforts to increase productivity. This reflects a larger trend toward seeing society as modeled on the corporation….Policymakers have applied basic Business 101 models to our schools—namely, to find ways to monitor productivity, then increase it, and to do so without spending any more money. Tests were chosen as the mechanism to measure productivity" (p.18-19).

<u>High-Stakes Testing and the Narrowing of the Curriculum</u>

Jones, Jones, and Hargrove (2003) cite the narrowing of the curriculum as an unintended and negative consequence of the NCLB Act. They argue that a one-time test in limited subject areas, in most cases language arts and mathematics, results in the tested subjects gaining increased focus and increased instructional time at the expense of those subject areas that are not tested, such as science, social studies, music, and art. In addition to narrowing the variety of subject areas covered, there is additional concern about the scope of the material covered within the areas of language arts and mathematics. Horn (2003) determined that although state standards in Massachusetts addressed the requirement for teaching higher-level reading, writing, and mathematics skills, the actual standardized test itself did not address anything beyond a very basic skill set in these areas. She argues that what is tested is what will be taught, and therefore, testing a very basic skill set, as is common in state standardized tests, reduces the overall quality and depth of instruction.

Booher-Jennings (2005) documented a case in an elementary school in Texas under high pressure to increase the schools' passing rate on the TAKS, the state standardized test. What Booher-Jennings (2005) observed was a system of "educational triage" that began in kindergarten and focused on increasing the basic skills knowledge of the students who were close to achieving passing scores on the test. Students without a chance of passing were written off as "hopeless", and students with high academic potential were neglected – they were certain to pass the test and therefore were ignored in favor of the teachers utilizing extra time to focus on basic skills instruction with "bubble kids." Widespread anecdotal evidence suggests that practices similar to what Booher-Jennings (2005) observed exist in a multitude of struggling schools nationwide. This "educational triage" obviously is a focus on basic level skills, and therefore would contribute to a reduction in the depth and scope of curricular offerings, even in tested areas, presented to a large proportion of students.

Kohn (2000) also argues that the emphasis on students passing a standardized test with certain types of questions increases the focus of teachers on presenting and promoting mastery of those tested skills alone or of advanced concepts out of context. In many cases, these questions require rote memorization or the execution of a series of steps that do not require critical thinking skills on behalf of the test taker. Therefore, Kohn (2000) implies that teaching for mastery of the test implies teaching for mastery of lower-order thinking skills. Kohn (2000) also references a collection of studies indicating that students with a learning style that favors skimming through questions and exerting minimal depth of understanding were associated with obtaining higher scores on standardized achievement tests.

Dillon (2006) interviewed several school principals as well as the president of the Center on Education Policy, and a common theme he encountered was the narrowing of the curriculum, particularly of the curriculum delivered to students that exhibited difficulty in passing the standardized tests mandated by the state. Jack Jennings, the president of the Center on Education Policy was quoted as stating: “Narrowing the curriculum has clearly become a nationwide pattern” (Dillon, 2006). The context of this interview centered around the implications of NCLB, and therefore, one can conclude that many experts in the field have deduced that this trend of the narrowing of the curriculum is as a direct result of the implementation of high-stakes testing in only two main curricular areas. School officials in Cuero, Texas have also adopted the extreme measure of doubling instructional time in Language Arts and Mathematics by reducing the time spent in other curricular areas, and cited the need to meet federal NCLB standards as their primary motivating factor (Dillon, 2006).

Let us recall that the main goal of the No Child Left Behind act was to ensure equitable access for all students in America to a rich, high-quality educational experience. If the goal is to achieve an equitable and high-quality education, an assumption can be made that this includes equal educational opportunities for all students. One can also conclude that all students should be exposed to the same diversity of course offerings, which would result in an education of equal diversity, quality, and future opportunity. The relevant research appears to indicate that the result of NCLB is counter to the goal of NCLB, especially in failing schools and low socioeconomic community schools, where it appears that curricular diversity is being significantly diminished. Baker (2012) and Killgore (2009) have both suggested that a rigorous and diverse curriculum is important both to prepare students for college acceptance as well as college success.

If a relationship does exist between the accountability pressures faced by schools and a narrowing of the curricular offerings within those schools, negative consequences could be faced by the students, both in their current educational environment as well as in their future academic endeavors – for chances of high school graduation, for college readiness, and for college acceptance.

Socioeconomic Status, Accountability Pressure, and Educational Opportunity

Since the passage of No Child Left Behind, a trend of increased focus of teacher time, staff assignments, and educational funds on tested areas at the expense of non-tested areas has emerged (Darling-Hammond, 2006; Kantor & Lowe, 2006; Kohn, 2000; Nichols & Berliner, 2008; Winstead, 2011). Music Education (Kantor & Lowe, 2006; Schuler, 2012), Visual and Performing Arts Education (Kantor & Lowe, 2006; Parsad & Spiegelman, 2012), Social Studies (Kantor & Lowe, 2006; Winstead, 2011), Science (Marx & Harris, 2006), and World Language (Rifkin, 2012) are all key curricular areas which may be adversely affected by the increased focus on the tested subject areas of Mathematics and English Language Arts and Literacy. This dissertation study endeavored to determine if there was evidence of this phenomenon in New Jersey middle schools through the investigation of patterns of staffing distributions over time.

Kantor & Lowe (2006) cite the fact that "more than 70 percent of the nation's school districts have responded to the testing requirements of NCLB by reducing instructional time in history, music and the arts in order to open up more time for instruction in reading and math, with the greatest reductions occurring in high-poverty districts" (p.484). Dillon (2006) also discusses the observation that many schools nationwide, particularly those that do not meet state benchmarks on standardized tests, are greatly increasing the focus on Language Arts and Mathematics instruction at the expense of the non-tested subject areas. The 2006 Center on Education Policy (CEP, 2006) study conducted of the impacts of No Child Left Behind after its fourth year of implementation found the following:

> "Moreover, 71% of school districts reported that they have reduced elementary school instructional time in at least one other subject to make more time for reading and mathematics—the subjects tested for NCLB purposes. In some case study districts, struggling students receive double periods of reading or math or both—sometimes missing certain subjects altogether. Some districts view this extra time for reading and math as necessary to help low-achieving students catch up. Others pointed to negative effects, such as shortchanging students from learning important subjects, squelching creativity in teaching and learning, or diminishing activities that might keep children interested in school" (p.7).

Shuler (2012) discusses that well-intentioned policies and practices stemming from NCLB and an effort to reduce the achievement gap in reading, writing, and mathematics education have had the unintended side effect of causing a "chasm" in arts opportunities based upon socioeconomic status. Shuler (2012) also expresses his belief that in order to lead successful and full lives, young people must receive a well-rounded education that includes art and music.

According to a report released by the National Center for Education Statistics in 2012, offerings of both visual arts and dance classes declined by approximately 5% and 17% respectively in public elementary schools nationwide from the 1999-2000 school year to the 2009-2010 school year, and the area of drama and theatre offerings declined by 16%. In public elementary schools nationwide where 51-75% of students received free or reduced lunch, the percentage of students that were reported as receiving instruction specifically dedicated to visual arts decreased by 12% from school year 1999-2000 to school year 2009-2010. Amongst this same population and over the same time period, dance offerings declined by 2%, from 12% of all schools in this socioeconomic category offering dance classes to 10%. Also worth noting is the fact that 6% fewer public secondary schools with 26-50% of the student population receiving free or reduced lunch offered drama and theatre education courses in school year 2009-2010 than in school year 1999-2000 (Parsad & Spiegelman, 2012). These statistics seem to indicate that in several cases, visual and performing arts education is declining in schools servicing a lower socioeconomic status population. When combined with data from a study commissioned by the National Endowment for the Arts (Catterall, Dumais, & Hampden-Thompson, 2012) that shows many benefits to arts education for at-risk and low-socioeconomic status students, this trend becomes even more disagreeable. Catterall, Dumais, and Hampden-Thompson (2012) concluded after a longitudinal study that:

> "1. Socially and economically disadvantaged children and teenagers who have high levels of arts engagement or arts learning show more positive outcomes in a variety of areas than their low-arts-engaged peers.
> 2. At-risk teenagers or young adults with a history of intensive arts experiences show achievement levels closer to, and in some cases exceeding, the levels shown by the general population studied.
> 3. Most of the positive relationships between arts involvement and academic outcomes apply only to at-risk populations (low-SES). But positive relationships between arts and civic engagement are noted in high-SES groups as well" (p. 24).

Another of the non-tested areas theorized to be impacted by the accountability pressure created by NCLB is the content area of Social Studies (Winstead, 2011). Winstead (2011) conducted a study of teacher perceptions related to Social Studies education in the elementary classroom. In this study, teachers indicated that time spent on teaching Social Studies was sacrificed in order to increase instructional time spent on the tested areas of Language Arts and Mathematics (Winstead, 2011). Since the passage of No Child Left Behind, several studies have noted both an increase in focus on Language Arts and Mathematics, especially in lower performing schools, and a concern on the part of current and pre-service teachers that non-tested areas would receive less attention and instructional time as a result of high-stakes testing (Darling-Hammond, 2006; Doppen, 2006; Winstead, 2011). Winstead came to the following four concluding points, which she stressed were more severe in the case of low-performing schools:

> “Four themes emerged from the triangulated data based on the teachers’ experiences and perceptions about the teaching of social studies within the guidelines of NCLB: (1) Social studies is relevant and helps students make real-world connections; (2) assessed subjects dominate instructional teaching periods; (3) focus on assessed subjects deprives students of time for social, civic, and critical discussions; and (4) there is a lack of professional support for social studies instruction” (p. 223).

Science education faces a similar challenge to social studies education, in that there are not any ties between student performance on science tests and federal accountability measures. Marx and Harris (2006) note that many principals and school leaders have shifted teaching time away from science in order to increase time spent on the two tested areas of mathematics and language arts.

Darling-Hammond (2006) states that two key components of successful high schools are that the schools have a diverse curriculum with performance-based assessments, and students that are personally supported in their efforts to master an "intellectually engaging and challenging curriculum" (p. 645). This is particularly important in the case of schools that serve low socioeconomic status areas and at-risk students; however, Darling-Hammond (2006) also notes that the regulations of NCLB have made implementing and maintaining these tenets of successful schools nearly impossible.

Shuler (2012) stated: "the seeds of neglect have been sown and nurtured by policymakers. Narrow priorities outlined in federal education legislation and grant and waiver guidelines have created a coercive environment in which school leaders feel compelled to sacrifice music and other non-tested programs to increase instructional time and staffing for 3Rs test preparation."

Resource and Staff Allocation Research

Of key importance and interest to this study is the distribution and allocation of teaching staff members across the different curricular areas within the middle schools in the state of New Jersey. Over the last decade, several studies have examined the distribution of resources within schools and school districts. One of the key "resources" that has been studied has been the distribution of teaching staff members.

As opposed to studying strictly monetary inputs into a school or district, certain researchers have examined the utilization of the teaching staff members within a school as a measure of resources invested into a particular area of the curriculum or as a measure of the diversity of the educational opportunities offered to students within particular schools or schools in certain context groups. Brent, Roellke, and Monk (1997) completed a case study of 30 secondary schools in New York State. Their data indicated that there was significant variation in the curricular offerings available to students based upon school context (size and socio-economic status), as shown by staff distribution. In another study of internal resource allocation within 645 New York state school districts (Monk & Hussain, 2000), it was found that not only do school districts vary widely in their teacher resource allocation practices, but that higher property wealth was connected with increased allocation of teaching staff into secondary academic areas. Monk and Hussain (2000) also suggested additional research into this area, particularly calling for a focus on longitudinal studies at the “micro-level”, or individual school level. Rubenstein et. al. (2007) completed a comprehensive study involving the examination of resource allocation at the school level, as opposed to the district level, of large school districts in New York City and Columbus, Ohio. The study involved the investigation of the relationship between school context, student populations, and intradistrict distribution of resources (funding and teacher distribution). They found that resources were not equitably available to all students within a district, and suggest further research into intradistrict resource allocations.

Baker (2003) investigated the impact of state policy on the intradistrict resource allocation practices. Results of this study indicated that district size and availability of financial resources were strongly connected with the way in which resources were internally allocated within a school district. Additionally, schools with certain context groups of students were found to be associated with differences in resource allocation.

This study utilized the Common Core of Data and included schools and districts from multiple states.

Most recently, Baker (2012) completed a study of New York and Illinois school districts in which the “depth and breadth of curricular offerings” were examined in both “high need, underperforming and resource constrained” school districts and “lower need, high performing and better funded” districts in the same geographical area. Baker (2012) also investigated the connections between the accountability pressures faced by districts and schools due to No Child Left Behind. Data from this study indicates that resource-constrained districts seem to offer less diverse educational opportunities to students. Evidence also suggested that in Illinois, some districts may have reallocated more resources towards basic and remedial programs. Baker (2012) notes that little empirical research has been completed in regards to the connections that may exist between teacher staffing distributions as a function of school resource allocations and response to accountability pressures faced by schools due to NCLB.

The researcher believed that given the existing foundation of knowledge into this area of research, it would be both beneficial and valuable to investigate the relationships that may exist between teacher staffing assignments, school context, and federal accountability pressure within middle schools in the state of New Jersey.

CHAPTER III

METHODOLOGY

Development of Master Data Set

Each research question put forth by this study required the researcher to obtain data from multiple sources and combine these data into one master data set. All of the data utilized in this study were readily available and accessible for download on the New Jersey Department of Education web page, on the National Center for Education Statistics web page, or through the Open Public Records Act. Although these data were freely available, the multiple variables considered in this study had not yet been condensed into one complete database which would allow for the direct comparison of the factors addressed in the research questions for this study. Therefore, in order to create such a database, it became necessary to obtain multiple separate data sets, standardize the format amongst the different data files and also standardize the format and data fields from year to year to create a continuous string of data fields. Once this had been accomplished, the data sets could then be merged and utilized to synthesize the master data set that would serve the needs of this study. The detailed description of the creation of this master data set is described below.

The generation of the data set for this investigation began with the researcher locating the New Jersey School Report Card data on the New Jersey Department of Education web site (www.state.nj.us /education). The entire “Report Card” for each year was downloaded in Microsoft Excel format (New Jersey Department of Education, 2013b). School header sheets, located within each master school report card file, were downloaded for each year from 1999 through 2011. These header sheets contained the county, district, and school codes for every school in the state of New Jersey, as well as the school name and the school's District Factor Group (DFG) classification. The District Factor Group classification is a representation of the relative socioeconomic status of the school and its surrounding community, and is determined by the State of New Jersey every ten years based upon Census data (New Jersey Department of Education, 2013d). There are twelve DFG groups, with the lowest socioeconomic status districts and schools classified as "A" and the highest socioeconomic status districts and schools classified as "J." The researcher standardized the key variable names, such as those for the county code, district code, school code, school name, school type, and District Factor Group (DFG) designation for each school. These data fields were standardized for format for each school year from 1999 through 2011. Each annual file was converted to .csv format after standardization of variable names and column formatting was completed. A new common variable, ***codistsch*** was generated as a combination of the county code, district code, and school code for each school in the state. This unique identification number provides a numerical means of identifying and distinguishing one school building from another.

Annual Fall Enrollment Reports from the New Jersey Department of Education were also obtained from the New Jersey Department of Education web site for all years from 1999 through 2011 (New Jersey Department of Education, 2013a). These data sets contained information regarding the demographic make-up of the student population of each school in the state of New Jersey. Each year of data was standardized in format and variable names, and converted into a .csv file. Again, the common variable ***codistsch*** was generated within this data set, linking enrollment data with a specific school building identification number for each year of this investigation.

Fall Staffing Reports were also obtained from the New Jersey Department of Education for school years 1999-2000 through 2010-2011. These reports contain the names, job codes, years of experience, and many other demographic data points for each teacher employed in the state of New Jersey for that given year. Once again, the ***codistsch*** variable was generated within these data sets, linking each teacher with their school building based upon its unique identifying code.

The school header sheet database, the fall enrollment report database, and the fall staffing report database were then merged utilizing the computer program Stata on the common variable ***codistsch***. As a result of this merge, all enrollment data and DFG data were subsequently associated with every teaching staff member in each specific school building throughout the state of New Jersey for all school years from 1999-2000 through 2010-2011.

Next, the researcher utilized the data tools offered on the National Center for Education Statistics website (www.nces.ed.gov), and obtained a list of all schools in the state of New Jersey that were classified with the “middle schools” designation for the entire duration of time from 1998-2012. This provided a list of three hundred and two schools, which became those that are included in this study. This data table was downloaded, the common ***codistsch*** variable was again generated, and this table was merged with the previous annual data sets to filter previous data to now include only teachers from these three hundred and two schools for each of the twelve years of data files.

In order to obtain information regarding standardized testing performance, the "Schools Identified as in Need of Improvement and Yearly Status" reports from New Jersey Department of Education web site for school years 2005-2006 thru 2010-2011 were downloaded and variable names were standardized. For school years 2001-2002 through 2004-2005, the New Jersey No Child Left Behind annual reports were downloaded, also from the New Jersey Department of Education (New Jersey Department of Education, 2013c). These reports were standardized in regards to the status of each individual school for each year; each school was classified as either meeting or not meeting "Annual Yearly Progress (AYP)", and the schools' current "School In Need of Improvement (SINI)" status was identified. SINI status is derived from the number of consecutive years in which a particular school was not able to meet the AYP benchmarks established by the state. Thus, the higher the SINI value, the more subsequent years have passed without the school reaching its designated benchmarks for student achievement. Once again, standardized testing performance data were associated with each individual school building by the generation of the common ***codistsch*** variable. These additional data sets were merged with the previously existing data sets for each year on this common variable.

The above stated procedures resulted in the formation of a database for each school year from 1999-2000 through 2010-2011 which contained the 302 middle schools in NJ that were classified as middle schools for all years from 1996-2011. All teachers and administrators for these schools were contained in the database and were associated with the AYP and SINI data from the school in which they were employed at the time.

Job codes for each staff member were also contained in the database. Enrollment data for students was also associated with each individual staff member.

To create a means of examining the population of staff members within each academic specialty area, the researcher made use of the New Jersey State Department of Education Certificated Staff Status Coding Manual for each year of data included in this study. The state assigned job codes listed in the state coding manual for the annual certificated staff report were grouped into twelve main job categories. These categories were as follows: Administration and Supervision, Art Education, Business Education, Elementary Generalist, English Language Arts and Literacy, Family and Consumer Science, Heath and Physical Education, Industrial Arts, Mathematics, Music Education, Science, Social Studies, Special Education, Support Services, Vocational Education, and World Language.

Stata DO files were generated to assign all possible state job codes for each year into the sixteen general categories utilized in this analysis. This was done for each school year from 1998-1999 through 2010-2011. A new variable named ***job_cat*** was generated using Stata, and each staff member was assigned the appropriate category that corresponded with their primary job code. The job codes that were assigned to each ***job_cat*** for each year are listed in Tables 1-4 in Appendix A.

Next, each yearly database file was opened, and every entry for each file was assigned a new variable field named ***school_year***, in which the school year associated with that year's data was identified. This was done for all twelve yearly databases independently. The twelve yearly database files were then appended using Stata to generate one master data file.

To ensure that all teachers from the three hundred and two selected schools were correctly included in the master data file, the researcher performed a spot check on fifteen randomly selected individual schools over the time span of the study. The original list of staff names and number of staff members per school from the New Jersey Department of Education Fall Staffing Report was compared with the number and list of last names in the Stata master data file for each selected school building and year. All fifteen randomly selected school staffing rosters were perfectly matched with the staff members included in the master data set.

In order to generate a variable upon which to compare the amount of state accountability pressure experienced by each school, the individual schools were grouped into four categories. The categories were representative of the pressure to perform successfully on state-administered standardized tests, and therefore represent what will be referred to as "accountability pressure" throughout this study. The School in Need of Improvement status, or SINI value, for each building was used to determine the severity of accountability pressure felt by each school. This variable was named ***si_cat***.

The four accountability pressure categories were defined as follows:

- Low – Schools that have a SINI value ranging from Year 0-2
- Moderate – Schools that have a SINI value ranging from Year 3-4
- High – Schools that have a SINI value ranging from Year 5-7
- Very High – Schools that have a SINI value ranging from Year 8-10

The data set described above was the basis for all calculations and data tables analyzed during this investigation. Below, the usage of the data set will be described in detail as pertains to each individual research question.

Research Question #1

The first research question for this study was as follows:

1. How are personnel resources currently distributed in New Jersey middle schools, on average, within the following context groups?
    a) All New Jersey Middle Schools
    b) Low Socioeconomic Status Middle Schools
    c) High Socioeconomic Status Middle Schools
    d) Middle Schools Experiencing Low Pressure from No Child Left Behind
    e) Middle Schools Experiencing High Pressure from No Child Left Behind

In order to investigate this research question, the master data set described above was utilized. To evaluate portion 1(a), Tables 5 through 8 in Appendix A were generated. Table 5 was created using Stata, and details the total number of individuals assigned to each job category (***job_cat***) per year (***school_year***), from 2000-2011, and includes all teachers from the three hundred and two selected middle schools in the state of New Jersey as described above. Table 6 illustrates the data in terms of the statewide average percentage share of staff members in each job category for each given school year. Table 7 outlines the statewide average number of staff members per one thousand pupils in each job category. In order to develop Table 7, the enrollment data for each school year were needed. These values were determined by using the variable fields from the master data set named ***school_year***, ***si_cat***, and ***rowtotal***. Stata was utilized to create a table listing the total enrollment data contained in the master data set. Total enrollment data can be examined in Table 8.

To address sub-sections (b) and (c) within this research question, the researcher utilized Stata to create an output table created with the variables for DFG (***dfg***) and job category (job_cat). This table allowed for the examination of the percentage of staff members within a certain DFG category (***dfg***) that were assigned within each job category (***job_cat***). Stata generated a table listing the number of individuals represented in each job category within each of the District Factor Groups, as well as the total number of individuals in each job category total in all DFG groups. This information, in terms of total number of individuals in each category from 1999-2011 is illustrated in Table 9 in Appendix A. The same information, but reflected as a percentage of staff members in each job category out of the total staff members within each DFG group is displayed in Table 10 in Appendix A. These tables and the resulting conclusions will be discussed in more detail in the next chapter.

To further investigate the differences in teacher distribution between low socioeconomic status schools, such as those with DFG status of A or B, and high socioeconomic schools, such as those with DFG status of I or J, the researcher created Tables 11-22, located in Appendix A, using both Stata and Excel. Variables ***school_year*** and ***job_cat*** were utilized to create a table for each specified DFG, for each DFG of relevance to this research question. Those relevant DFG groups were DFGs A, B, I, and J. These tables were then copied into Excel in order to calculate the percentage share of staff members in each DFG for each school year. These tables illustrate the number of staff members in each job category as well as the percentage share of staff members in each job category as a percentage of all teachers within their DFG group. Tables 11, 14, 17, and 20 in Appendix A list the total actual number of staff members within each category over the entire time period from the 1999-2000 through 2010-2011 school years. Table 11 contains data from DFG A schools, Table 14 contains data from DFG B schools, Table 17 contains data from DFG I schools, and Table 20 contains data from DFG J schools. Tables 12, 15, 18, and 21 in Appendix A represent the corresponding percentage share data for each DFG group. Table 12 illustrates DFG A data, Table 15 illustrates DFG B data, Table 18 illustrates DFG I data, and Table 21 illustrates DFG J data.

Table 23 in Appendix A lists the districts as identified by their county, district, and school codes that are counted within DFG groups A, B, I, and J. This table was generated using Stata, by tabulating the schools within each DFG by their unique ***codistsch*** identifier. The ***codistsch*** variable is a combination of the New Jersey official county, district, and school codes for each school building. This allows each school to be numerically differentiated from the group and also allows each school to be identified by name if desired. Stata was utilized to calculate the number of students enrolled per school year, 1999-2000 through 2010-2011, by DFG group. These enrollment data can be observed in Table 24 in Appendix A for the relevant DFG groups: A, B, I, and J. This data was then utilized in Excel to calculate the ratio of teachers per one thousand pupils in each job category for DFG groups A, B, I, and J. This data can be seen in Tables 13, 16, 19, and 22 in Appendix A.

Portions (d) and (e) of Research Question #1 were investigated, once again, through the use of the master data set described above. Stata was utilized to generate Table 25 and Table 29, which represent the total number of staff members within each job category (***job_cat***) for each school year (***school_year***). Table 25 in Appendix A displays this information for schools that were classified as "low accountability pressure" schools, within ***si_cat***=***a_low***, as described above. Table 29 in Appendix A displays these figures as well, but for those schools within the "very high accountability pressure" group, defined as ***si_cat***=***d_veryhigh***, which was described in detail above. Tables 26 and

27 in Appendix A were generated using Excel, and illustrate the data in terms of overall percentage of staff members in each job category as a portion of the whole, and also the number of staff members per one thousand pupils in each job category per year for the low accountability pressure schools, and Tables 30 and 31, also generated in Excel and located in Appendix A, outline these corresponding data for the very high accountability pressure schools. Tables 28 and 32 in Appendix A contain the enrollment data for the low-accountability and high-accountability schools, respectively.

Research Question #2

2. When schools are disaggregated by the contexts listed below, are personnel resources distributed in a manner that is significantly different from the current New Jersey state average?

a) Low Socioeconomic Status Middle Schools
b) High Socioeconomic Status Middle Schools
c) Middle Schools Facing Low Pressure from No Child Left Behind
d) Middle Schools Facing High Pressure from No Child Left Behind

The purpose of this research question was to investigate data trends in an effort to discover any discernable differences in teacher distribution and staffing practices based upon the context of a school. Specifically: When comparing the statewide average for teacher distribution to teacher distribution in various context groups (low socioeconomic status, high socioeconomic status, high accountability pressure schools, low accountability pressure schools), will the teacher distribution within the context groups differ in any noticeable way from the state average? It is worth highlighting that the difference between the intent of research question #1 and research question #2 is that research question #1 describes the overall distribution of teachers in each of these categories, and compared high socioeconomic with low socioeconomic schools as well as compared high accountability pressure schools with low accountability pressure schools. The purpose of research question #2 is to compare each of these sub-groups to the state average as opposed to its opposing sub-group.

In order to investigate this question, the researcher utilized the master data set described previously. Similarly to Research Question #1, for Research Question #2 one can refer to Tables 5, 6, and 7 in Appendix A to view the descriptive data for the total population of middle school teachers in the state of New Jersey from school years 1999-2000 through 2010-2011. For the interests of this question, the researcher will compare the similar data from each context group mentioned in sub-sections (a) through (d) with Tables 5 through 7 containing data for the state as a whole to determine if any notable differences in distribution exist.

To address sub-sections (a) and (b), relating to low and high socioeconomic status middle schools, Tables 11-22 in Appendix A will once again be referenced. Tables 11-16 display the data pertaining to the lowest socioeconomic schools in the state; those in DFG groups A and B. Tables 17-22 show the data outputs for the highest socioeconomic schools in the state of New Jersey; those in DFG groups I and J. The methodology for creating these tables was described previously.

Sub-sections (c) and (d) are concerned with the differences between schools that fall under low accountability pressure and high accountability pressure and how their distribution of teachers may differ from the statewide average distribution of teaching staff. In order to address these sub-questions, Tables 25-27 from Appendix A which were previously discussed, along with Tables 29-31 from Appendix A were examined again in a different light. Additionally, Tables 33-40, also located in Appendix A, were created to add to the discussion of the influences of accountability pressure. Tables 33-35 and Tables 37-39 were created in the same manner as Tables 25-27 and Tables 29-31. Tables 25-27 contain data relating to schools with a SINI status of Year 0-2 and are contained within the lowest accountability pressure group, titled “Low.” Tables 33-35 contain corresponding data for schools in the “Moderate” accountability pressure category; these schools are defined as being in SINI status Year 3 or Year 4. Tables 37-39 contain corresponding data for schools within the “High” accountability pressure category; these schools are in SINI Years 5, 6, or 7. As seen earlier, Tables 29-31 contain information pertaining to the highest accountability pressure group, “Very High.” This group is comprised of schools in SINI status Year 8, Year 9, or Year 10. Enrollment data for the “Moderate” accountability pressure group is contained in Table 36, and enrollment data for the “High” accountability pressure group is contained in Table 40.

Data from these tables will be examined and compared to state average values in Tables 5, 6, and 7 from Appendix A in order to draw conclusions relating to any differences that may be observed amongst the context groups. It is important to note that the starting year of data for the accountability pressure groups varies; this is due to the fact that it requires calendar time to progress further along in the accountability pressure, or School in Need of Improvement (SINI), spectrum. Therefore, the first calendar year that a school could possibly be in Year 3, or qualify for the “Moderate” group, would be 2003. The first possible year to have allowed for the time to progress into the “High” category would be Year 5 of the program, or 2005. Similarly, districts would not progress into the “Very High” grouping until SINI Year 8, or school year 2008-2009.

Research Question #3

3. Over the last decade, was there a significant shift in average statewide personnel allocation in New Jersey middle schools in the following subject areas?

a) Mathematics
b) English Language Arts and Literacy
c) Science
d) Social Studies
e) World Language
f) Visual and Performing Arts

In order to quantify the change in average staff assignments over time, statewide, the researcher calculated the percent change in the teachers per one thousand pupil ratios for each job category for the total population of teachers in New Jersey middle schools. To obtain a percentage change over time, the researcher utilized the teachers per one thousand pupil ratios for each job category for the total data set of middle schools for the state of New Jersey over the twelve year period from school year 1999-2000 through school year 2010-2011. The average ratio value for the first four years and the average ratio value for the last four years of the study data were calculated. The percent change for the initial and final average values was then calculated.

*[(year 1+year 2+year 3+year 4)/4=initial average ratio]; [(year 9+year 10+year 11+year 12)/4=final average ratio]; [((final average ratio-initial average ratio)/initial average ratio)*100=percent change]*

The percent change over time in the teachers per one thousand pupil ratios for each job category can be observed in Table 41.

Research Question #4

4. In New Jersey middle schools, does a relationship exist between the socioeconomic context of a school and the changes in personnel allocation by subject area over time?

Utilizing the same procedure that was followed in Research Question #3, the researcher calculated the percent change over time in the teachers per one thousand pupil ratios for each job category over the duration of the data collection period for the two lowest and two highest socioeconomic groups of schools contained in the data set. The factor that distinguishes Research Question #4 from Research Question #3 is that the percent change was calculated for the two lowest and two highest socioeconomic status groups of schools in the state of New Jersey as opposed to examining the overall state average ratio changes.

To obtain the percent changes over time, the researcher utilized the teachers per one thousand pupil ratios for each job category for the total data set of middle schools for the state of New Jersey over the twelve year period from school year 1999-2000 through school year 2010-2011. The average ratio value for the first four years and the average ratio value for the last four years of the study data were calculated. The percent change for these two beginning and ending average values was then calculated.

*[(year 1+year 2+year 3+year 4)/4=initial average ratio]; [(year 9+year 10+year 11+year 12)/4=final average ratio]; [((final average ratio-initial average ratio)/initial average ratio)*100=percent change]*

The socioeconomic groups addressed in this question are the same as those that were discussed in portions (b) and (c) of Research Questions #1 and #2. This will allow the researcher to examine the differences in the teacher per one thousand pupils ratio values for schools from both the lowest and highest socioeconomic context groups within the state. These values can then be compared both to the statewide average and to each other.

The output tables for these data can be seen in Tables 42 through 45 in Appendix A. Table 42 contains data from DFG A schools, Table 43 contains data from DFG B schools, Table 44 contains data from DFG I schools, and Table 45 contains data from DFG J schools.

Research Question #5

5. Do any relationships exist between personnel allocations in New Jersey middle schools and the schools' "No Child Left Behind" accountability pressure status?

For the comparison of teacher distribution across the four accountability pressure groups, it is most pragmatic to refer back to Tables 27, 31, 35, and 39, all located within Appendix A. These tables display the number of teachers per one thousand pupils assigned to each of the sixteen job categories for each of the four accountability pressure groups: low accountability pressure, moderate accountability pressure, high accountability pressure, and very high accountability pressure schools. These data tables will be carefully compared to determine if any trends exist as accountability pressure, driven by No Child Left Behind requirements, increases.

CHAPTER IV

FINDINGS

<u>Research Question #1</u>

The first research question for this study was as follows:

1. How are personnel resources currently distributed in New Jersey middle schools, on average, within the following context groups?

   a) All New Jersey Middle Schools
   b) Low Socioeconomic Status Middle Schools
   c) High Socioeconomic Status Middle Schools
   d) Middle Schools Facing Low Pressure from No Child Left Behind
   e) Middle Schools Facing High Pressure from No Child Left Behind

Research Question #1, subsection (a), addresses the entire population of middle school teachers in the state of New Jersey. For the purposes of this study, the 302 middle schools within the state of New Jersey that were classified by the National Center for Education Statistics as “middle schools” for the entire duration of time from 1999-2011 were included in the master data set. The data examined in the master data set includes all staff members from all three hundred and two schools employed for any period of time in a full-time position.

Table 5 in Appendix A lists the total number of staff members employed in the included 302 schools in each of the sixteen job categories for each school year from 1999-2000 through 2010-2011. When examining Table 5, one can observe that the total number of staff members per year included in the study ranges from 16,414 in 2000 to 19,159 in 2009. Overall, 217,949 staff member data observations were included from the twelve-year time span of this investigation.

Of particular interest is the observation that there are nearly twice the number of teachers per one thousand students allocated in the areas of English Language Arts and Literacy and Mathematics as there are in the other two main content areas of Science and Social Studies. English Language Arts and Literacy peaked at 21.47 teachers per one thousand students in 2008. Also in 2008, Mathematics peaked with 13.30 teachers per one thousand students. Science and Social Studies also peaked in 2008, with 7.52 and 7.75 teachers per one thousand pupils, respectively. By the 2010-2011 school year, there were 14.66 English Language Arts and Literacy teachers per one thousand pupils, 12.05 teachers per one thousand pupils in Mathematics, 7.24 teachers per one thousand pupils in Science, and 7.26 teachers per one thousand pupils in Social Studies. It can be observed that although all four content areas displayed an increase in the number of assigned staff members per one thousand pupils, the greatest increase over time is observed in the area of Mathematics.

It can clearly be seen that of the four main academic content areas, English Language Arts and Literacy (12.43) has the highest ratio of teachers per one thousand students, followed by Mathematics (9.70), Social Studies (6.20), and Science (6.06)

It becomes apparent when looking at this table that the job categories with the least number of staff members at the middle school level are Vocational Education with never more than 22 staff members per year, Business Education with a range of 52-70 teachers employed per year, Family and Consumer Science with a range of 101-249 staff members per year, and Industrial Arts, with a range of 158-297 teachers per year.

Upon further examination, the number of teachers employed in the categories of Family and Consumer Science and Industrial Arts have both steadily declined over the course of time from the 1999-2000 school year through the 2010-2011 school year. 249 Family and Consumer Science teachers were employed in 1999-2000, and dropped off by more than half to 101 teachers employed in this job category by school year 2010-2011. Similarly, in the category of Industrial Arts, 297 teachers were employed in the 1999-2000 school year, which steadily declined to 158 staff members by school year 2010-2011, which reflects a nearly 50% reduction in staff members statewide in this category.

Table 6 in Appendix A illustrates the same data as in Table 5, but in a slightly different manner. The number of staff members in each job category is represented as a percentage of the total statewide staff members for each given year for each particular job category. By examining this table, one can observe the distribution of staff members statewide across the sixteen different job categories within one particular school year. One can also observe the trends over time within the state in a more accurate manner than simply looking at the number of staff members per year. By comparing relative percentages, it is possible to see which share of the overall teaching population was employed in each job category.

In Table 6 we also can observe a significant decline in the volume of teachers in the Family and Consumer Sciences category and the Industrial Arts category. It is interesting to note that the percentage of teachers in the Elementary Generalist category decreases over time, whereas the percentage of teachers in English Language Arts and Literacy, Mathematics, Science, and Social Studies all increase over time. Perhaps this can be attributed to the requirements for Highly Qualified teachers in the state of New Jersey, which became more strongly enforced leading up to the final deadline for Highly Qualified Status by June 30, 2007 (http://www.state.nj.us/education/profdev/nclb/). Also of interest is the observation that statewide, the percentage shares of teachers in the Art, Business, Health & Physical Education, and Music categories do not show much change over time. Another noteworthy observation is that the percentage of World Language teachers statewide steadily increased from 2.77% in 2000 to 4.40% in 2011.

Table 7, also located in Appendix A, illustrates, once again, data from the same Stata output as Tables 5 and 6. Table 7, however, provides the ratio of teachers in each category per one thousand students. This was calculated by determining the total enrollment in all 302 schools for each of the twelve years of the investigation. The enrollment data can be observed in Table 8 in Appendix A.

Table 7 provides an interesting look at the number of staff members for each one thousand students in each job category over the course of school years 1999-2000 through 2010-2011. Similarly to the data observed in Tables 5 and 6, it is apparent that the number of staff members in the Administration and Supervision category has remained relatively steady for the duration of this study, with a range of 3.05-3.52 staff members per one thousand students. A steady increase in World Language teachers, from 2.38 to 4.19 staff members per one thousand students corresponds with the increase seen in this category in the two previous tables.

In order to examine sub-questions (b) and (c) within Research Question #1, the researcher generated Tables 9 and 10, which can be located in Appendix A. These two tables contain a breakdown of the total number of teachers in each job category in each district factor group (DFG) for the total time period from school year 1999-2000 through school year 2010-2011. Table 9 lists the actual number of staff members per job category by DFG. Perhaps more useful for data analysis purposes is Table 10, which represents the share of teachers in each job category as a percentage of the total staff members in each DFG over the 12 year period. It is important to keep in mind that the DFG is a category assigned to each school and district by the state of New Jersey as a representation of the socioeconomic status of the surrounding community. The lowest DFG category is "A" and the highest DFG category is "J". There are a total of 12 DFG categories.

Table 10 illustrates several notable data trends. The percentage share of math teachers in the lowest two DFG categories, A (9.95%) and B (10.39%), and the highest two DFG categories, I (10.21%) and J (9.66%), do not demonstrate much of a disparity at all. English Language Arts and Literacy also does not demonstrate much of a difference in percentage share of teachers, with DFG A teachers at 12.95%, DFG B teachers at 13.19%, DFG I teachers at 12.86%, and DFG J teachers at 11.38%. However, disparities are apparent in the category areas of Science, Social Studies, World Language, Music, and Art. In Science, DFG A and B districts have 4.62% and 5.83% of teachers, respectively, assigned to Science and DFG I and J districts have 7.22% and 7.65% of teachers, respectively, assigned to Science. In the category of Social Studies, 4.79% of DFG A teachers and 5.82% of DFG B teachers are contained in the Social Studies category, whereas 7.50% of DFG I and 7.16% of DFG J teachers are assigned to Social Studies.

In the Art, Music, and World Language categories, a much larger percentage share of teachers are assigned to the specialty area in DFG I and J districts than are assigned in DFG A and B districts. The percentages for Art Education are as follows: DFG A, 1.86%, DFG B, 1.96%, DFG I 2.40%, and DFG J 2.82%. In the category of Music, 2.26% of DFG A teachers were assigned to the Music category, and 2.93% of

DFG B teachers were similarly assigned, whereas 4.09% of DFG I teachers were categorized as Music staff and 4.18% of DFG J teachers were Music teachers. Most strikingly, in the category of World Language, 1.59% and 2.10% of teachers in DFG A and B schools, respectively, were categorized as World Language teachers, whereas 6.22% and 7.44% of DFG I and J teachers, respectively, were assigned to this category.

To further investigate the differences in teacher distribution between low socioeconomic status schools, such as those with DFG status of A or B, and high socioeconomic status schools, such as those with DFG status of I or J, the researcher created tables 11-23, which can be viewed in Appendix A. These tables illustrate the number of staff members in each job category as well as the percentage share of staff members in each job category as a percentage of all teachers within their DFG group. The ratio values of teachers in each job category per one thousand pupils were also calculated. Tables 11, 14, 17, and 20 list the total actual number of staff members within each pertinent DFG category over the entire time period from the 1999-2000 through 2010-2011 school years. Table 11 contains data from DFG A schools, Table 14 contains data from DFG B schools, Table 17 contains data from DFG I schools, and Table 20 contains data from DFG J schools. Tables 12, 15, 18, and 21 represent the corresponding percentage share data for each DFG group. Table 12 illustrates DFG A data, Table 15 illustrates DFG B data, Table 18 illustrates DFG I data, and Table 21 illustrates DFG J data. There are 26 DFG A schools, 37 DFG B schools, 78 DFG I schools, and 19 J schools included in the data sets. This provides a picture of 63 low socioeconomic schools and 97 high socioeconomic schools. Summary data for sub-sections 1b and 1c can be viewed in Chart 1 and Figure 1 below.

Tables 12, 13, 15, 16, 18, 19, 21 and 22 are more useful than Tables 11, 14, 17, and 20 for directly comparing the distribution of teaching staff within each DFG. By examining the percentage of teachers or the ratio of teachers per one thousand pupils represented in each category as opposed to the actual number of teachers, it is possible to compare proportions from one category to another on more equal footing. These tables also provide longitudinal data that spans the twelve year period from the 1999-2000 school year through the 2010-2011 school year. This allows for the comparison from one DFG to another in terms of total distribution of teachers as well as allowing for a picture of the year-to-year change in each job category within each DFG group, which provides the means to reveal any longitudinal trends that exist within the data.

Represented in the “Average” row on the bottom of each of Tables 11, 14, 17, and 20 is the same numerical information found by column in Table 10. This was another cross-check performed by the researcher to ensure that data was calculated correctly.

Chart 1. Teachers per One Thousand Pupils by Job Category and DFG

Curricular Area	DFG A	DFG B	DFG I	DFG J
ELAL	13.31	12.53	11.70	10.78
Mathematics	10.22	9.87	9.29	9.15
Science	4.75	5.54	6.57	7.24
Social Studies	4.92	5.53	6.83	6.78
World Language	1.63	1.99	5.66	7.04
Art	1.91	1.86	2.18	2.67
Music	.32	2.79	3.73	3.95

Figure 1. Teachers per One Thousand Pupils by Job Category and DFG

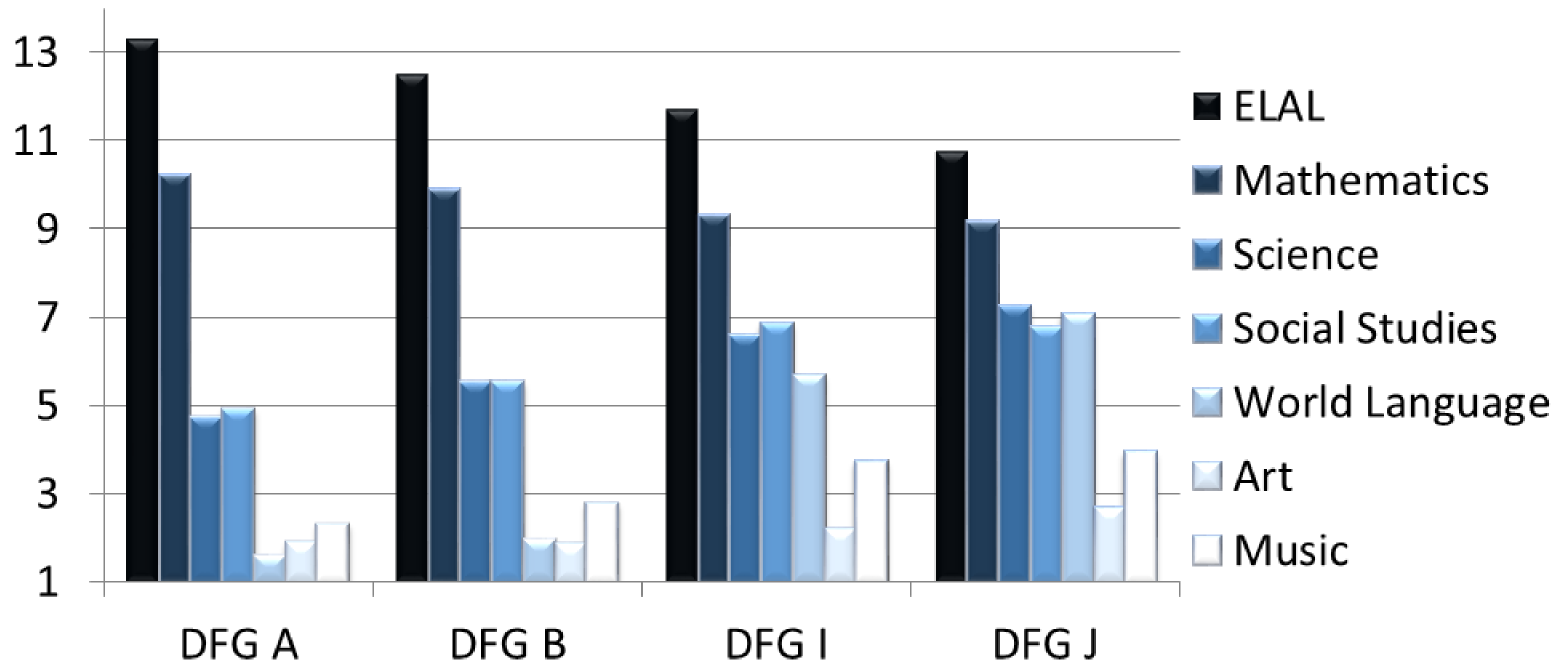


Table 23 in Appendix A lists the schools as identified by their county, district, and school codes that are counted within DFG groups A, B, I, and J. Table 24 in Appendix A provides the enrollment data for each group of DFG schools from 1999-2000 through 2010-2011.

Several trends can be noticed when examining percent allocation of staff members and comparing Tables 12, 15, 18, and 21; as well as by examining the teacher per one thousand pupil ratios in Tables 13, 16, 19, and 22. The most orderly way to discuss these trends is perhaps by job category.

In the area of English Language Arts and Literacy, all four DFG categories seem to have increased over time by a similar proportion – approximately a 3%-4% increase over the twelve year period. When the teachers per one thousand pupil ratios are examined, similar data can be observed. In Mathematics, however, we see a very different picture. The two lowest socioeconomic status DFG groups, A and B, increased their percentage of mathematics teachers by approximately 6% over the course of the twelve years, whereas the highest two DFG groups, I and J, only increased their percentage of mathematics teachers by approximately one-half of one percent in the "J" schools, and by approximately 1.5% in the "I" schools. This data is supported by the teacher per one thousand pupil ratio observations: DFG A schools increased from 6.63 to 14.22 teachers per one thousand pupils over the course of the study data. DFG B schools increased from 6.80 to 12.80 teachers per one thousand pupils. DFG I schools demonstrated a much more slight increase, as did DFG J schools. They increased from 8.32 to 10.37 and from 8.51 to 9.29, respectively.

In the category of Science, the DFG "A" schools, DFG "B" schools, and DFG "I" schools all did not exhibit much of an increase in the percentage of science teachers over time, varying from approximately 1%-2% increase over twelve years. However, in the highest socioeconomic group, the DFG J schools, the percentage of Science teachers increased by approximately 3%, more than double the percentage increase of the other three groups. This is also reflected in the teacher per one thousand pupil ratio data, where it can be seen that the number of Science teachers per pupil in the DFG J schools is higher at the start of the data collection period than all other groups, and also finished the data collection period with the highest ratio of teachers per one thousand pupils.

For the category of Social Studies, no major changes over time were observed. Percentage share of Social Studies teaching staff increased by roughly 1.5% in the DFG A, DFG B, and DFG I schools over the duration of the study data. DFG J districts displayed barely any change over time, hovering around approximately 7% of teaching staff assigned to Social Studies. It is worth mentioning that although the increases in percentage share were similar amongst the A, B, and I schools, the I schools did have a much higher percentage of staff dedicated to Social Studies at the start of the data collection in school year 1999-2000. DFG A schools in 1999-2000 had 3.83% of staff members assigned to Social Studies, DFG B schools had 5.06% of staff members assigned to this category, and DFG I schools had 6.80% of teachers assigned to Social Studies. So whereas DFG I schools increased the least amount over time in teacher assignments in Social Studies, from the beginning of the study data, with 7.27% of teachers assigned to Social Studies, DFG J schools have a higher percentage of Social Studies staff members even at the beginning of the study data that the other DFG schools have over twelve years of increasing assignments to this category. When examining the data of teacher per one thousand pupils, it can also be observed that the DFG I and J schools have more teachers per one thousand students in Social Studies. Again, the DFG A schools have the fewest teachers per one thousand pupils of all 4 DFG groups assigned to Social Studies.

In the area of Art Education, all four DFG category schools slightly declined in the percentage of teachers assigned. The percentage decline was approximately one-half of one percent across the board. However, it is noteworthy that the I and J DFG schools throughout the twelve years of data hovered in the 2.5%-3% range of percentage of teacher assignment, whereas the DFG A and B schools remained at or below 2% of teaching staff assigned to this category. In school year 2010-2011, DFG A schools had 1.87% of teaching staff assigned to Art, and DFG B schools were close to that figure with 1.76%. When examining teachers per one thousand pupil ratio data, it can be observed that the DFG A and B schools have fewer teachers per one thousand assigned to Art Education than do the DFG I and J schools. However, there was a slight increase in the number of teachers per one thousand pupils in the DFG A schools, from 1.79 in 1999-2000 to 2.06 in 2010-2011. This may be illustrative of a situation in which the number of students enrolled in Art classes has declined at a greater rate than the decline in number of staff members in this category. It may also be due to the fact that the lower socioeconomic schools have a higher teacher per one thousand pupil ratio overall as opposed to the higher socioeconomic status schools.

Percentage of teachers assigned to Music education in the DFG A and B schools remained relatively constant over the twelve-year period, with DFG A schools decreasing only slightly from nearly 2.4% in 1999-2000 to 2.07% in 2010-2011. DFG B schools remained relatively constant, oscillating just at and slightly below 3% for the duration of the data. DFG I and J schools also do not show much change over time in the area of Music assignments, but similarly to Art, the percentage share of Music teachers in DFG I and J schools is much higher at the beginning and through the duration of the data collection period. DFG I and J schools range from just below to just above 4% of teaching staff members assigned to Music education. This is more than 1% higher than DFG B schools, and nearly double the percentage of teachers assigned to Music in 2010-2011 for DFG A schools. Similar trends can also be observed when studying the teacher per one thousand pupil ratio data. At the end of the data collection period, the DFG I and J schools have approximately one additional teacher per one thousand pupils than do the DFG A and B schools.

The area of World Language illustrates a clear difference between the low socioeconomic status schools and the high socioeconomic status schools. In DFG A schools, the total average percentage of teachers assigned to the World Language category over the twelve-year period of data is a mere 1.59% of staff members. In DFG B schools, this number is 2.10%, which is not much higher. Contrastingly, in DFG I and J schools, the corresponding percentage values are 6.22% and 7.44% respectively. This represents a great difference in staff assignment proportions. World Language teacher assignments increased by the least amount, a mere 0.35%, over the twelve-year period in DFG A districts. Although there was not a dramatic percentage increase in teacher assignments to this category, the DFG B, I, and J groups increased by approximately 0.60%-1.30%. The DFG I and J schools already greatly surpassed the DFG A and B schools in this area of teacher assignments at the start of the data collection period, and this gap in teacher assignments did not decrease over the duration of the data collection period. Similar trends are evident in the teacher per one thousand pupil ratio data. In the DFG A schools, throughout the course of the data collection period, fewer than 2 teachers were assigned per one thousand pupils to World Language areas. This is in sharp contrast with the DFG J schools, where at the beginning of the data collection period, there were 6.08 teachers per one thousand pupils. This number increased to 6.88 teachers per one thousand pupils by 2010-2011, the final year of data collection.

Family and Consumer Science is worth a brief mention as well, although in all four DFG groups this category only began with between 1.36% and 1.67% of teachers. The interesting trend is not only that teachers in this category have decreased by nearly half in all DFG groups, but that in DFG A schools, which had the highest proportion of Family and Consumer Science teachers to start with at the onset of the data collection period, ended up having the lowest percentage share of teachers assigned to this category with only 0.20% of teachers by school year 2010-2011. It appears that the schools in which this was the most significant share of teachers overall are also the schools in which this category was most dramatically decreased. The same trend is reflected in Tables 13, 16, 19, and 22, which outline the teacher per one thousand pupil data.

In the area of Administration and Supervision, it is noteworthy that the DFG B, DFG I, and DFG J schools all remain below 4% of the staff assignments in this category. Only DFG A schools are above the 4% mark. Also worth mentioning is that while the percentage share of staff assigned to the Administration and Supervision category declined slightly (by approximately 0.2%-0.5%) in the DFG I and J groups, there was a relatively constant range amongst the DFG A and B schools. This phenomenon can also be observed in the teacher per one thousand pupil ratio data, where the DFG B, I, and J groups all remain in the range of approximately 3 to rarely just over 4 staff members per one thousand pupils. The DFG A schools have nearly 4 to just over 5 staff members per one thousand pupils throughout the duration of the data collection period.

Heath and Physical Education teachers comprised 6.17% of the staff in both DFG A and DFG B districts at the start of the data collection period in 1999-2000. By the end of the data collection period in 2010-2011, that percentage had declined to 5.60% in DFG A schools and to 5.35% in DFG B schools. In DFG I and J schools, a less substantial decline was displayed. DFG I schools in 1999-2000 had 6.72% of teachers assigned to Health and Physical Education, and DFG J schools had 5.91% of staff members similarly assigned. DFG I schools remained nearly the same with 6.56% of teachers assigned to this category in both school years 2009-2010 and 2010-2011. DFG J schools had a similarly small decline to 5.91% in 2009-2010 and 5.72% in 2010-2011. When examining the teacher per one thousand pupil ratios, however, it becomes evident that although the percentage share of staff members assigned to Health and Physical Education has declined, the ratio of teachers per one thousand pupils slightly increased in all but DFG B schools, which only very slightly declined. Once again, as seen in the case of the Art category, it is possible that the proportion of teachers assigned to this area may be declining as well as are the number of pupils enrolling in Health and Physical Education classes. In some cases, this may reflect a reduction of students enrolled in those classes in this category above and beyond the required number of minutes per week of instruction required by the state of New Jersey. It could also be reflective of an alteration of the schools' operating schedules to reduce the number of minutes of Health and Physical Education instruction to the required state minimum, thereby decreasing number of staff members while still serving nearly the same number of students. Table 23, below, provides a list of the school buildings classified within each DFG group as identified by their unique and official State of New Jersey county, district, and school codes. Table 24 outlines the enrollment data for DFG group A, B, I and J schools for the duration of the data collection period, beginning with the 1999-2000 school year and ending with the 2010-2011 school year.

To address portions (d) and (e) of research question #1, Tables 25-32, located in Appendix A, were generated. These data can also be seen in a summarized form in Chart 2 and Figure 2 below. This question addresses the average distribution of middle school teachers statewide in schools facing high accountability pressure from state standardized testing compared with those schools facing low accountability pressure. Schools were categorized as "low accountability pressure" if they were in a SINI status of Year 0, Year 1, or Year 2. Schools categorized at "high accountability pressure" were in a SINI status of Year 8, Year 9, or Year 10.

Tables 26, 27, 30, and 31 are perhaps the most useful when looking to compare the distribution of the teaching staff in high and low accountability pressure schools. Tables 26 and 27 pertain to low accountability pressure schools, and Tables 30 and 31 reflect data from high accountability pressure schools. Tables 26 and 30 represent the proportion of teachers in each job category as a percentage of the entire staff, whereas Tables 27 and 31 represent the proportion of teachers in each job category as a ratio of number of teachers per one thousand pupils. Schools represented in the data set for low accountability pressure schools include all schools for all years from the 1999-2000 school year through the 2010-2011 school year. If a particular school had a SINI school status of Year 0, 1, or 2 at any point in time, they would be counted, for that given year, as being a low accountability pressure school. Thus, the data set for low accountability pressure schools is much larger than the data set for the high accountability pressure schools. This disparity in the size of the data sets is also due in large part to the fact that the 2008-2009 school year is the first calendar year that it would be possible for a school to obtain "Year 8" status; this would be the 8th year since the inception of the program. Also, there is a jump in the population of high accountability pressure schools in school year 2010-2011, as by this year, more schools would have had the calendar time to progress further into a Year 8, 9, or 10 SINI status, which was the requirement in this study to be considered a high accountability pressure school.

In the areas of English Language Arts and Literacy and Mathematics, it is apparent both in the relative percentage of assigned teachers and in the teachers per one thousand pupil ratios that a greater proportion of the staff members are assigned to English Language Arts and Literacy and Mathematics in schools facing high accountability pressure compared with schools facing low accountability pressure. In terms of the average proportion of staff assigned by job category over the entire data collection period to the job categories of English Language Arts and Literacy and Mathematics in both accountability type schools, both percentage and ratio values are much higher in the high accountability pressure group. In low accountability schools, an average of 13.17% of teachers were assigned to English Language Arts and Literacy, compared with 15.44% in the high accountability pressure schools. In terms of teachers per one thousand pupils, low accountability pressure schools had an average of 11.90 English Language Arts and Literacy teachers per one thousand pupils, whereas high accountability pressure schools had an average of 18.17 English Language Arts and Literacy teachers per one thousand pupils. Also worth noting is that in the first two academic years for the high pressure category, school years 2008-2009 and 2009-2010, the teachers per one thousand pupil ratio was a value over 20 teachers per one thousand pupils.

In the category of Mathematics, it is apparent that a both a higher teacher per one thousand pupil ratio and a greater percentage of staff members are assigned to this category in high accountability pressure schools when compared with their low accountability pressure counterparts. Over the course of the data collection period, an average of 10.13% of staff members were assigned to the Mathematics category in low accountability pressure schools, compared with 15.99% of teachers in high accountability pressure schools. In terms of teacher per one thousand pupil ratios, low accountability pressure schools averaged 9.15 teachers per one thousand pupils, whereas high accountability pressure schools averaged 18.81 Mathematics teachers per one thousand pupils. This equates to nearly double the number of teachers per one thousand pupils in the area of Mathematics in high accountability pressure schools as compared to low accountability pressure schools.

In the other two core academic areas, Science and Social Studies, however, there does not seem to be a vast difference in either the average teacher per one thousand pupil ratio or in the average percentage of staff members assigned to either category over the duration of the study data. In low accountability pressure schools, 6.56% of teachers are assigned to Science and 6.71% are assigned to the Social Studies category compared with 6.57% of teachers assigned to the Science category in the high accountability pressure schools and 6.23% of teachers assigned to Social Studies in high accountability pressure schools. In terms of the teacher per one thousand pupil ratios, there was an average of 5.92 teachers per one thousand pupils assigned to Science and 6.06 teachers per one thousand pupils in Science and Social Studies, respectively in the low accountability pressure schools. In the high accountability pressure schools, actually a higher number of teachers per pupil were observed in both Science and Social Studies compared with low accountability pressure group; the average teacher per one thousand pupil ratio in Science was 7.74 and 7.33 in Social Studies.

Another category that is relatively similar in regards to the percentage share of staff members in the category of Art Education. An average of 2.17% of staff members in low accountability pressure schools were assigned to this category, whereas a slightly higher average of 2.29% of teachers in high accountability pressure schools comprised the Art category. In terms of the teachers per one thousand pupil ratio values, an average of 1.96 teachers were assigned to Art Education in the low accountability pressure schools, compared with 2.70 teachers per one thousand pupils in the high accountability schools.

The category of Health and Physical Education is also not largely different in terms of the percentage share of staff members assigned to this category in low accountability pressure schools compared with high accountability pressure schools. An average of 6.43% of teachers were assigned to this category in low accountability pressure schools, compared with 6.37% of teachers in high accountability pressure schools. In terms of the teachers per one thousand pupil ratio values, high accountability pressure schools have an average of 7.50 teachers per one thousand pupils and low accountability pressure schools have a slightly lower value with 5.81 teachers per one thousand pupils.

Although the category of Business Education comprises a very small percentage of the actual number of teachers employed in both categories of schools, it may be worth noting that the number of teachers per one thousand pupils, at 1.29 is noticeably higher than the corresponding ratio value of 0.27 in the low accountability pressure schools. In terms of average percentage share of staff members, low accountability pressure schools employed only 0.25% of students in this category, compared with 1.10% in the high accountability pressure schools.

Another interesting category to examine is the percentage share and per one thousand pupil ratio values for administrative and supervisory staff. In terms of the staff member per one thousand pupil ratios, the average value for the low accountability pressure schools was 3.17; whereas the corresponding value for high accountability pressure schools was 5.51. In terms of average percentage share of staff assignments, 3.51% of staff in low accountability pressure schools was within the Administration and Supervision category, compared with 4.68% of staff members in high accountability pressure schools.

Three job categories that showed a higher share of teachers in low accountability pressure schools when compared with high accountability pressure schools were the categories of World Language, Music, and Family and Consumer Science. The category of World Language shows the largest disparity amongst these three areas, and it is quite a large disparity. In high accountability pressure schools, only 1.69% of teaching staff, or 1.99 teachers per one thousand pupils are assigned to the World Language category. The equivalent values in low accountability pressure schools are 4.28% or 3.87 teachers per one thousand pupils. This data illustrates nearly double the number of teachers per one thousand pupils assigned to World Language positions in low accountability pressure schools as compared with their high accountability pressure counterparts.

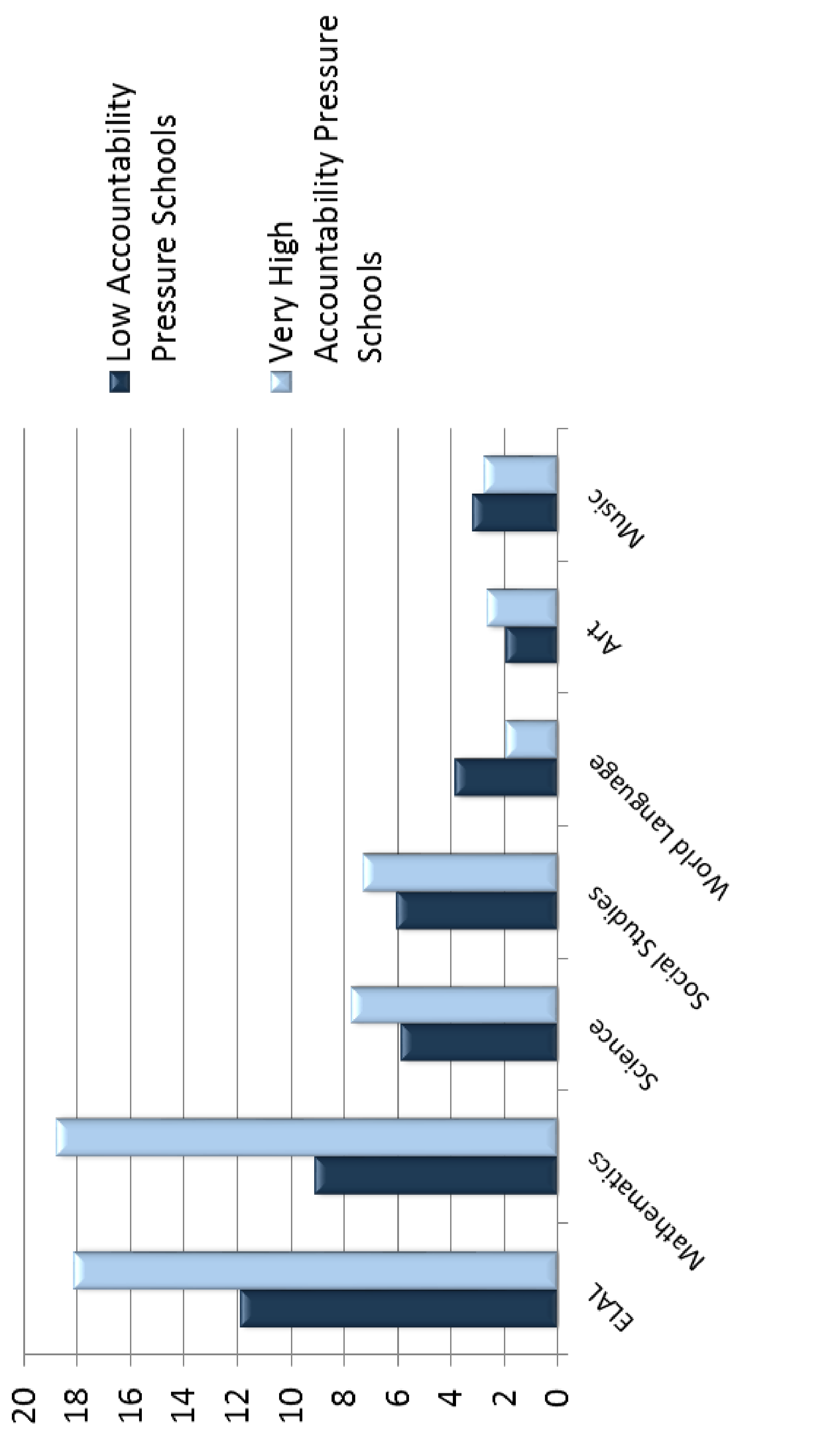
Regarding the category of Music Education, 2.39% of teaching staff was assigned to this category in the high accountability pressure group of schools, compared with 3.55% of teaching staff in low accountability pressure schools. In terms of teachers per one thousand pupil, an average of 2.81 teachers per one thousand pupils were observed in high accountability pressure schools, compared with a corresponding ratio value of 3.20 teachers in low accountability pressure schools.

Another low-population job category that while small may be worth noting is the area of Family and Consumer Science. In the group of low accountability pressure schools, 1.01% of teaching staff was assigned to this category, with a teacher per one thousand pupil ratio of 0.91. In high accountability pressure group schools, the corresponding values were nearly half that; 0.50% of staff assignments and a teacher per one thousand pupil ratio value of 0.59.

Chart 2. Teachers per One Thousand Pupils by Job Category and Accountability Pressure

Curricular Area	Low Accountability Pressure Schools	Very High Accountability Pressure Schools
ELAL	11.90	18.17
Mathematics	9.15	18.81
Science	5.92	7.74
Social Studies	6.06	7.33
World Language	3.87	1.99
Art	1.96	2.70
Music	3.20	2.81
Total Teachers	90.30	117.68

Figure 2. Teachers per One Thousand Pupils by Job Category and Accountability Pressure



Research Question #2

2. When schools are disaggregated by the contexts listed below, are personnel resources distributed in a manner that is significantly different from the current New Jersey state average?

a) Low Socioeconomic Status Middle Schools
b) High Socioeconomic Status Middle Schools
c) Middle Schools Experiencing High Pressure from No Child Left Behind
d) Middle Schools Experiencing Low Pressure from No Child Left Behind

Recall that the purpose of this research question was to discover if there is a difference in teacher distribution and staffing practices based upon the context of a school when compared with the average distribution of teaching staff statewide. This differs from the previous question in that here the context groups are compared with the state average, as opposed a general observation of teacher distribution and a comparison with their corresponding context group (i.e. low socioeconomic schools compared with high socioeconomic schools in Research Question #1, contrasted with low and high socioeconomic schools both compared to state average distribution in Research Question #2). Specifically, when comparing the statewide average for teacher distribution to teacher distribution in various context groups (low socioeconomic status, high socioeconomic status, high accountability pressure schools, low accountability pressure schools), this question asks if the teacher distribution within the context groups differ in any noticeable way from the average statewide distribution. It is worth highlighting that the difference between the intent of Research Question #1 and Research Question #2 is that Research Question #1 describes the overall distribution of teachers in each of these categories, and compared high socioeconomic with low socioeconomic schools as well as compared high accountability pressure schools with low accountability pressure schools.

The purpose of Research Question #2 is to compare each of these sub-groups to the state average as opposed to its corresponding opposite sub-group.

In order to investigate this question, it is beneficial to refer back to Tables 5, 6, and 7 in Appendix A. Table 5 contains the total number of teachers, statewide, in each job category by year from school year 1999-2000 through school year 2010-2011. Table 6 displays this data in terms of the percentage of teachers that comprise each job category for each year of the data collection period, as well as the average percentage of teachers in each job category over the duration of the data collection period. Table 7 contains the data pertaining to the number of teachers per one thousand pupils by job category for each school year from 1999-2000 through 2010-2011. These tables will be utilized as the state average data, and will be compared to similar data outputs from each of the four context groups in question. For the data discussion that follows, Tables 5, 6, and 7 were compared with Tables 11, 12, and 13 from Appendix A for DFG A schools and Tables 14, 15, and 16 from Appendix A for DFG B schools to examine the picture of the average low socioeconomic status school make-up in the state of New Jersey. For comparisons with high socioeconomic status schools, Tables 17, 18, and 19 from Appendix A contain data relating to DFG I schools and Tables 20, 21, and 22 from Appendix A contain data pertaining to DFG J schools. Data summaries for sub-sections 2a and 2b can be seen in Chart 3 and Figure 3, and for sub-sections 2c and 2d in Chart 4 and Figure 4 below.

The first context group of interest is the group containing low socioeconomic status schools. When comparing statewide average data with schools in DFG groups A and B, the lowest two socioeconomic categories within New Jersey, there is not a noticeable difference in either the percentage of teachers assigned to the English

Language Arts and Literacy category, nor the teachers per one thousand pupil ratios amongst the categories. The statewide data set for English Language Arts and Literacy displays an average of 13.57% of teachers assigned to this category over the course of the data collection period. Statewide percentages in this category have a range of values from 8.32%-22.12%. DFG A schools show an average of 12.95% of teachers assigned to this category and a range over the data collection period of 8.35%-20.44%. DFG B schools displayed an average of 13.19% of teachers assigned to this category over the data collection period, with a range from 9.14%-21.32%. Both in the range of percentage values over time and in the average of the values over the collection period, not much difference is noticeable. In terms of the teacher per one thousand pupil ratio values for English Language Arts and Literacy across the low socioeconomic status schools, once again, not much of a difference is noticeable when compared with the state average. The average state teacher per one thousand pupil ratio value was 12.43, compared with 13.31 for DFG A schools and 12.53 for DFG B schools.

In the job category of Mathematics, the statewide average percentage of teachers assigned to this category from school year 1999-2000 through school year 2010-2011 was 10.59%. When compared with the average percentage values of 9.95% and 10.39% from DFG A and DFG B schools, respectively, a barely noticeable difference in values is seen in this category between the state average values and the low socioeconomic schools. When examining the teacher per one thousand pupil ratio values, 9.70 teachers per one thousand pupils were assigned as an average statewide. In DFG A schools, 10.22 teachers per one thousand pupils were assigned, and in DFG B schools, 9.87 teachers per one thousand pupils were assigned. Once again, not much of a difference is observed in the teachers per one thousand pupil ratio when comparing low socioeconomic status schools with the average statewide ratio value in the category of Mathematics.

In the Social Studies category, a difference can be observed in the percentage of teachers assigned and also in the ratio of teachers per one thousand pupils when comparing DFG A schools to the average statewide values. Statewide, 6.78% of teachers were assigned to the Social Studies job category, and there were an average of 6.20 teachers per one thousand pupils in this area. In DFG A schools, only 4.79% of teachers were assigned, as an average, to Social Studies positions. The teacher per one thousand pupil ratio of 4.92 is also lower than the statewide average. When looking at DFG B districts, the difference from the state average is less noticeable, with an average of 5.82% of teachers assigned to Social Studies, and a ratio of 5.53 teachers per one thousand pupils. Although the DFG B schools are slightly lower than the state average values, DFG A schools display more of a noticeable discrepancy in this category.

In the fourth major content area category, Science, one can observe the most considerable difference in teacher assignments of the four core academic content areas. The statewide average percentage of teachers assigned to the Science category is 6.62%. In DFG A schools, this value is 4.62%. DFG B schools display less of a disparate value of 5.83%, but still remain nearly 1% below the state average. As for the teachers per one thousand pupils ratio values, the state average is 6.06, compared with 4.75 for DFG A schools and 5.54 for DFG B schools. Once again, more of a disparity is seen when comparing DFG A schools to the state average than with DFG B schools.

In the category area of Art Education, a minimal difference can be observed between the low socioeconomic status schools and the statewide average. The average percentage of teachers, statewide, assigned to Art Education over the duration of the data collection period was 2.16%, compared with 1.86% in DFG A schools and 1.96% in DFG B schools. In terms of teachers per one thousand pupils, the statewide average ratio value is 1.98, compared with 1.91 for DFG A schools and 1.86 for DFG B schools.

Similarly, in the area of Health and Physical Education, there is not a noticeable difference between the average statewide data and the data for the schools in the two lowest socioeconomic categories. Statewide, 6.45% of teachers were assigned to this category, compared with 5.74% for DFG A schools and 6.09% for DFG B schools. In terms of teachers per one thousand pupils, statewide, the average value was 5.90, compared with 5.89 for DFG A schools and 5.79 for DFG B schools.

In the category of Music Education, a slightly more noticeable difference can be observed than in the category of Art Education. The statewide average percentage share of Music teachers is 3.40%, compared with 2.26% in DFG A schools and 2.93% in DFG B schools. When examining the teachers per one thousand pupils ratio values, the average ratio for all New Jersey middle schools is 3.11 teachers per one thousand pupils. In DFG A schools, this ratio is 2.32 teachers per one thousand pupils, and in DFG B schools, this ratio is 2.79 teachers per one thousand pupils. Here one can observe a slightly lower ratio of students per one thousand pupils, with more of a difference from the state average in the DFG A schools than in the DFG B schools.

Perhaps one of the most compelling and interesting differences in the job category data is that pertaining to the category of World Language. In this category, the statewide average for the percentage of staff members assigned to this category is 4.02%, with an average ratio of 3.68 teachers per one thousand pupils. In DFG A schools, an average percentage share of less than half of the state average is seen – a mere 1.59%. This corresponds with a 1.63 teachers per one thousand pupils ratio for DFG A schools. DFG B schools show only a slightly higher proportion of teachers assigned to this category, with 2.10% of the teaching staff contained in this category. DFG B schools have a ratio value of 1.99 teachers per one thousand pupils. This data appears to reveal that students in lower socioeconomic schools may have reduced access to World Language education when compared with the average middle school student in New Jersey.

Also worth mentioning is the percentage of staff members allotted to the category of Administration and Supervision in the groups of low socioeconomic schools. Statewide, 3.58% of school staff members were assigned to this category, which represented a 3.28 staff member per one thousand pupils ratio. In DFG A schools, 4.38% of staff members were similarly assigned, as were 3.68% of staff members in DFG B schools. DFG A schools had an average of 4.50 staff members per one thousand pupils assigned to administrative or supervisory jobs, compared with 3.50 staff members per one thousand pupils in DFG B schools. This represents a higher than state average assignment of administrative staff in the lowest socioeconomic category schools. Although a disparity is present between DFG A schools and the state average, not much of a difference exists between the second-lowest DFG group, the DFG B schools when compared with the state average in the category of Administration and Supervision.

Business Education and Family and Consumer Science categories do not comprise large shares of the teaching staff population statewide, with average percentages of 0.33% and 0.98%, respectively. As for the teachers per one thousand pupils ratio values, one can observe that there were 0.30 teachers per one thousand pupils in the Business Education category and 0.90 teachers per one thousand pupils in the Family and Consumer Science category, statewide. Within DFG A schools, the average percentages for Business Education and Family and Consumer Science are 0.54% and 0.97%, and demonstrate a slightly higher than average assignment to Business Education than the statewide average, and almost an equivalent average percentage assignment value for Family and Consumer Science. Teachers per one thousand pupils ratio data demonstrate the same trend, with 0.56 teachers per one thousand pupils and 0.99 teachers per one thousand pupils in Business Education and Family and Consumer Science, respectively. When examining DFG B school data, only 0.09% of teachers were assigned to Business Education; this is definitely a significantly lower proportion of teachers than both the state average as well as the DFG A schools. The 0.08 teachers per one thousand pupils ratio value also illustrates this observation. DFG B schools also have a lower proportion of Family and Consumer Science teachers when compared with the state average as well; within this socioeconomic group, 0.70% of teachers, or 0.67 teachers per one thousand pupils were assigned to this category. DFG B schools also have the lowest levels of Industrial Arts teachers, with 0.85% of teachers assigned to this category compared with the state average of 1.29% and the DFG A average of 1.22%. In terms of teachers per one thousand pupils, DFG B schools have a ratio value of 0.81, compared with the state average of 1.18 and the DFG A average of 1.25.

The second context group of interest is the group containing high socioeconomic status schools. In the category of English Language Arts and Literacy in the two highest socioeconomic status groupings, DFG I and J schools, it is noticeable that the share of staff members assigned to this category is slightly lower than the state average. The average percentage of teachers assigned to English Language Arts and Literacy statewide over the duration of the data collection period is 13.57%, compared with 12.86% for DFG I schools and 11.38% for DFG J schools. In terms of the teachers per one thousand pupils assigned to English Language Arts and Literacy, the state average ratio is 12.43 teachers per one thousand pupils, compared with 11.70 teachers per one thousand pupils in DFG I schools and 10.78 teachers per one thousand pupils in DFG J schools. It is worth mentioning that this data for high socioeconomic schools is also different from the low socioeconomic school groups, which were in line with the state averages.

In the category of Mathematics, the average percentage share of teachers assigned to this category over the course of the data collection period was 10.59%. In DFG I schools, this figure was 10.21%, and in DFG J schools, this value was 9.66%. In terms of the teachers per one thousand pupils ratio values, the statewide average is 9.70, compared with 9.29 for DFG I schools, and 9.15 teachers per one thousand pupils for DFG J schools. Although the differences in percentage and in ratio values are not vast, it is interesting to note that as the socioeconomic level increases, both in English Language Arts and Literacy and in Mathematics, both the percentage share and number of teachers per one thousand pupils gradually declines.

In the other two main content area categories, Science and Social Studies, one can see the reverse trend amongst the high socioeconomic schools than can be seen in the categories of English Language Arts and Literacy and Mathematics. In the cases of Science and Social Studies, as the socioeconomic level of the school increases, slightly but consistently and noticeably so does the percentage share of teachers assigned to these teaching categories and the ratio of teachers assigned per one thousand pupils. In the

Social Studies category, it can also be observed that both the percentage share of teaching staff and the ratio of teachers per one thousand pupils are higher in both DFG I and J groups of schools when compared with the average values for the state. Statewide, 6.62% of teachers are assigned to the category of Science, and 6.78% of teachers are assigned to Social Studies. In DFG I schools, these values are 7.22% for Science and 7.50% for Social Studies. For DFG J schools, Science teachers comprise 7.65% of teaching positions, and Social Studies teachers comprise 7.16% of teacher assignments. In terms of the teachers per one thousand pupils assigned to Science, the state average value is 6.06 teachers per one thousand pupils, compared with 6.57 teachers per one thousand pupils in DFG I schools and 7.24 teachers per one thousand pupils in DFG J schools. The ratio values for the Social Studies category are as follows: statewide, 6.20 teachers per one thousand pupils; DFG I schools, 6.83 teachers per one thousand pupils; and DFG J schools, 6.78 teachers per one thousand pupils.

In the categories of Art Education and Music Education, a trend similar to the one observed in Science and Social Studies is apparent. In the Music category, both high socioeconomic status groups of schools have a higher percentage and ratio of Music teachers than the average statewide value. As the socioeconomic status of the schools increase from DFG I to DFG J, so does the teachers per one thousand pupils ratio value and the percentage share of teachers assigned to Music. Statewide, an average of 3.40% of teachers or 3.11 teachers per one thousand students were assigned to Music Education. In DFG I schools, these values were 4.09% and 3.73 teachers per one thousand pupils. In DFG J schools, the corresponding data points were 4.18% and 3.95 teachers per one thousand pupils. In the area of Art Education, the ratio of teachers per one thousand pupils is higher in both high socioeconomic groups than the statewide average, and the ratio increases as socioeconomic status increases. The statewide ratio value for Art Education is 1.98 teachers per one thousand pupils, compared with 2.18 and 2.67 teachers per one thousand pupils in DFG I and J districts, respectively. In terms of percentage share of Art teachers, the state average allocation is 2.16% of teaching staff, compared with 2.40% in DFG I schools and 2.82% in DFG J schools.

In the area of Administration and Supervision, no discernable difference is observed between the average state staff allocations and staff allocations in the two high socioeconomic status school groups. In terms of percentage of staff allocated to this category, the statewide average percentage over the duration of the data collection period was 3.58%, with a range of 3.42%-3.71%. In DFG I schools, the average value for the entire term of the data collection period was 3.49%, with a range of 3.19%-3.86%. For DFG J schools, the average value for the data collection period was 3.72%, with a range of 3.31%-4.42%. The staff member per one thousand pupils ratio values also do not show much variation in this category; average values for the duration of the data collection period are as follows: statewide, 3.28; DFG I schools, 3.18, and DFG J schools 3.52 staff members per one thousand pupils were assigned to this job category.

The categories of Health and Physical Education and Industrial Arts Education also do not display data trends that are noticeably different from the statewide average data values. Statewide, 6.45% of teachers were assigned to the category of Health and Physical Education, and 1.29% were assigned to Industrial Arts. In DFG I schools, 6.62% of teachers were assigned to Health and Physical Education and 1.36% were assigned to Industrial Arts. In the DFG J group of schools, 5.83% of teachers were assigned to Health and Physical Education and 1.16% of teaching staff members were assigned to Industrial Arts. In terms of teacher per one thousand pupils ratio values, the statewide average value was 5.90 teachers per one thousand pupils in Health and Physical Education and 1.18 teachers per one thousand pupils in Industrial Arts. In DFG I schools, the corresponding values were 6.02 and 1.24 for Health and Physical Education and Industrial Arts, respectively. For DFG J schools, an average of 5.52 teachers per one thousand pupils was observed the Health and Physical Education category and 1.09 teachers per one thousand pupils for the Industrial Arts job category. Teacher per one thousand pupil ratio values are just slightly higher than the state average in the DFG I schools, and just slightly lower than the state average in DFG J schools, however, the difference seems to be very minimal.

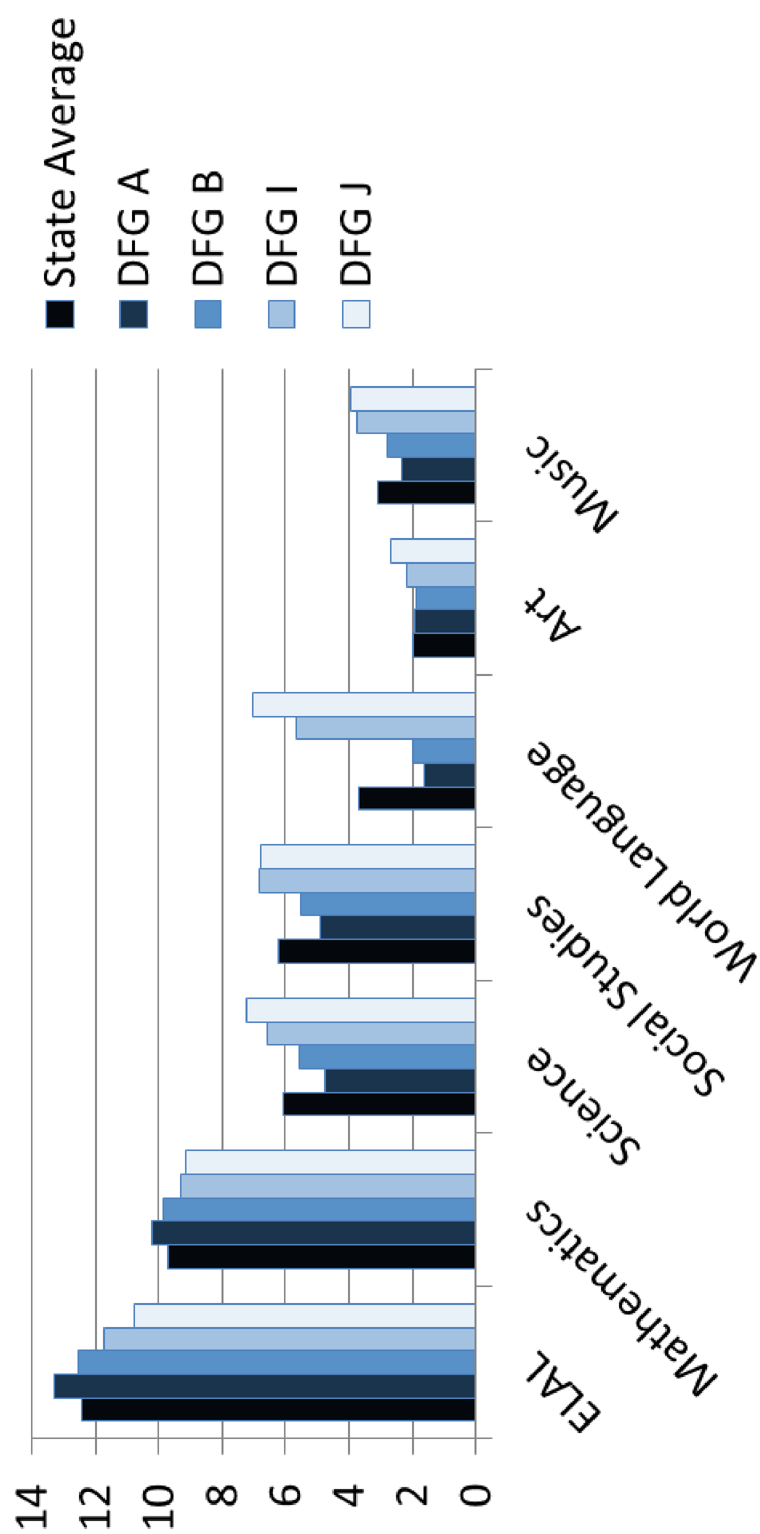
The category where one can see the perhaps the most appreciable difference is in the category of World Language. The statewide average proportion of teachers assigned to this category is 4.02%, compared with 6.22% in DFG I schools and 7.44% in DFG J schools. The statewide ratio value for World Language is 3.68 teachers per one thousand pupils, compared with 5.66 teachers per one thousand pupils in the DFG I schools and 7.04 teachers per one thousand pupils in the DFG J schools. This equates to nearly double the number of World Language teachers per one thousand pupils in the highest socioeconomic status districts when compared with the state average.

Overall, there were fewer teachers per one thousand pupils in low accountability pressure schools than the state average. Within low accountability pressure schools, 90.30 teachers were assigned per one thousand pupils over all curricular areas, compared with a state average of 91.57 teachers per one thousand pupils.

Chart 3. Teachers per One Thousand Pupils by Job Category and Socioeconomic Status vs. Statewide Average

Content Area	Statewide Average	DFG A Schools	DFG B Schools	DFG I Schools	DFG J Schools
ELAL	12.43	13.31	12.53	11.70	10.78
Mathematics	9.70	10.22	9.87	9.29	9.15
Science	6.06	4.75	5.54	6.57	7.24
Social Studies	6.20	4.92	5.53	6.83	6.78
World Language	3.68	1.63	1.99	5.66	7.04
Art	1.98	1.91	1.86	2.18	2.67
Music	3.11	2.32	2.79	3.73	3.95
Total Teachers	91.57	102.75	95.01	91.02	94.67

Figure 3. Teachers per One Thousand Pupils by Job Category and Socioeconomic Status vs. Statewide Average



Sub-sections (c) and (d) of Research Question #2 are directed towards identifying any differences that may exist between schools that fall varying degrees of accountability pressure from the accountability requirements of the No Child Left Behind Act of 2001 and how the distribution of teaching staff members within each of these “accountability pressure” groups of schools may differ from the statewide average distribution of teaching staff. In order to address these sub-questions, Tables 25-27 from Appendix A, which were previously discussed, along with Tables 29-31 from Appendix A were examined again in a different light. Additionally, Tables 33-40 from Appendix A were also created to add to the discussion of the influences of accountability pressure. Tables 33-35 and Tables 37-39 were created in the same manner as Tables 25-27 and Tables 29-31. Tables 25-27 contain data relating to schools in the lowest accountability pressure group, titled “Low.” Schools in this category fall into School in Need of Improvement, or SINI, Year statuses of 0, 1, or 2. Tables 33-35 contain corresponding data for schools in the “Moderate” accountability pressure category; these schools are defined as being in SINI status Year 3 or Year 4. Tables 37-39 contain corresponding data for schools within the “High” accountability pressure category; these schools have a status of SINI Years 5, 6, or 7. As seen earlier, Tables 29-31 contain information pertaining to the highest accountability pressure group, “Very High.” This group is comprised of schools in SINI status Year 8, Year 9, or Year 10. Enrollment data for the “Moderate” accountability pressure group is contained in Table 36, and enrollment data for the “High” accountability pressure group is contained in Table 40.

Once again, it is important to note that the starting year of data for the accountability pressure groups varies; this is due to the fact that it requires calendar time to progress further along in the accountability pressure, or SINI, spectrum. Therefore, the first calendar year that a school could possibly be in Year 3, or qualify for the "Moderate" group, would be 2003. The first possible year to have allowed for the time to progress into the "High" category would be Year 5 of the program, or 2005. Similarly, districts would not progress into the "Very High" grouping until SINI Year 8, or school year 2008-2009. For this reason, the data sets for the lower pressure groups are inherently larger; this is due to the fact that there were more potential calendar years for schools to fall into these groups.

When examining the group of schools with the lowest accountability pressure, titled "Low," and comparing the pattern of teacher allocation as well as the ratio values of teachers per one thousand pupils for each job category, there is not a discernable difference in any job category between the statewide average values and the values for the low accountability pressure group schools. This can be seen by directly comparing Table 6 from Appendix A with Table 26 from Appendix A as well as by comparing Table 7 in Appendix A with Table 27 in Appendix A. For each job category, the statewide percentage share of teachers followed by the low accountability group schools is as such: English Language Arts and Literacy, 13.57% statewide and 13.17% in low accountability schools; Mathematics, 10.59% statewide, compared with 10.13% in low accountability schools; Administration and Supervision, 3.58% compared with 3.51%; Science, 6.26% contrasted with 6.56%; Social Studies, 6.78% statewide and 6.71% in low accountability pressure schools; Art, 2.16% compared with 2.17%; Music, 3.40% compared with 3.55%; Health and Physical Education, 6.45% statewide and 6.43% in low accountability pressure schools. It is also evident when examining the teacher per one thousand pupils ratio data that very little difference is discernable between the statewide average staffing allocations and those within the lowest accountability pressure grouping.

The group of schools facing the next stage of increasing accountability pressure was the group classified as moderate accountability pressure schools. Data from this group can be seen in Tables 33 through 36 in Appendix A. In several curricular areas, such as Art Education, Family and Consumer Science, Health and Physical Education, and Industrial Arts, there is little or no discernable difference between the statewide averages for teacher distribution and the teacher distribution within schools facing moderate levels of accountability pressure.

The curricular areas of English Language Arts and Literacy, Mathematics, Science, Social Studies, Business Education, and Administration and Supervision all show a slightly higher percentage of teachers assigned to these areas in schools facing moderate levels of accountability pressure when compared with corresponding statewide data. Ratio values of teachers per one thousand pupils also corroborate these findings. In English Language Arts and Literacy, 13.57% of teachers statewide were assigned to this category, and there were 12.43 teachers per one thousand pupils. Within the group of moderate accountability pressure schools, 14.90% of teachers were assigned to this category with a ratio of 13.92 teachers per one thousand pupils. The difference seen here is not huge, but it is present. Similarly, the average percentage share of teachers assigned to the category of Mathematics was 10.59% statewide, and 11.98% in moderate accountability pressure schools. The teachers per one thousand pupils ratios were 9.70 statewide and 11.19 in the moderate accountability group of schools.

Percentage shares of teachers assigned to the categories of Science and Social Studies were also slightly higher in the moderate accountability pressure schools. For Science, statewide, 6.62% of teachers were assigned to this category, compared with 7.06% in moderate accountability pressure schools. In Social Studies, 6.78% of teachers were assigned to this category statewide, contrasted with 7.25% of teachers in moderate accountability pressure schools. When examining the teachers per one thousand pupil ratios for these job categories, it can be seen that there are also slightly more personnel resources devoted to these categories than is the average for the state. In Science, statewide, there were 6.06 teachers per one thousand pupils and there were 6.60 teachers per one thousand pupils on average in the moderate accountability pressure schools. In the category of Social Studies, 6.20 teachers per one thousand pupils were assigned on average statewide, compared with 6.78 teachers per one thousand pupils in moderate accountability schools.

Data in the job categories of Business Education and Administration and Supervision indicate that there may be a very slightly higher share of staff members in these categories in moderate accountability pressure schools than the state average, but not dramatically so. Statewide, 0.33% of teachers comprised the category of business education, with a teachers per one thousand pupil ratio value of 0.30. In moderate accountability pressure schools, 0.42% of teachers were assigned to this category, with a teachers per one thousand pupil ratio value of 0.39. In regards to Administration and Supervision, the statewide percentage of staff members assigned to this category was 3.58%, and this value for moderate accountability pressure schools was 3.71%. When represented as the number of staff members per one thousand pupils, there were an average of 3.28 staff members per one thousand pupils assigned statewide, and an average of 3.47 staff members assigned thusly in moderate accountability pressure schools.

The two job category areas which displayed a lower proportion of staff members assigned in the moderate accountability pressure schools than the state average were the areas of Music Education and World Language. An average of 3.40% of teachers statewide were assigned to Music Education, compared with only 2.92% of teachers employed within moderate accountability pressure schools. When viewed as a ratio of teachers per one thousand pupils, statewide, 3.11 teachers were assigned per one thousand pupils; however this value was only 2.73 in moderate accountability pressure schools. In the category of World Language, 4.02% of teachers were assigned to this curricular area on average, statewide. Within moderate accountability pressure schools, this percentage was 3.28%. As a statewide average, 3.68 teachers per one thousand pupils were assigned in the category of World Language, compared with 3.07 teachers per one thousand pupils in moderate accountability pressure schools.

Overall, there were slightly more teachers assigned in general per one thousand pupils in the moderate accountability pressure schools; there were 93.44 teachers assigned per one thousand pupils as a sum of all job category areas compared with 91.57 as a statewide average.

The next accountability pressure group of schools was the group identified as high accountability pressure. These schools were in SINI status Year 5, 6, or 7. One point of interest that is immediately noticeable is that the overall number of teachers assigned per one thousand pupils is much higher in this group than statewide average. The average ratio value for all middle schools in the state of New Jersey was 91.57 teachers per one thousand pupils, but was 104.30 teachers per one thousand students in the high accountability pressure group.

The two main curricular areas that are a focus of standardized testing, English Language Arts and Literacy and Mathematics also show a higher than average allotment of staff members than the state average. For English Language Arts and Literacy, the high accountability pressure schools have 16.00% of teachers assigned to this job category, as opposed to 13.57% statewide. High accountability pressure schools have 16.69 teachers assigned per one thousand pupils to English Language Arts and Literacy, whereas the state average is definitely lower at 12.43 teachers per one thousand pupils. Similarly, in the area of Mathematics, 13.13% of teaching staff was assigned to this job category in high accountability pressure schools, contrasted with 10.59% statewide. This higher proportion of teachers per pupil was also seen in the teacher per one thousand pupils ratio values, with 13.70 teachers per one thousand pupils assigned to Mathematics in high accountability pressure schools as compared with 9.70 teachers per one thousand pupils statewide.

In the other two main core curricular areas of Science and Social Studies, barely any discernable difference is seen in terms of percentage of staff assigned to either category in high accountability pressure schools when compared to the statewide average. Percentage shares of teachers are just slightly below the state average; 6.43% and 6.64% of staff members assigned in high accountability pressure schools in Science and Social Studies, respectively, compared with 6.62% and 6.78% statewide. In terms of teachers per one thousand pupils, however, it appears that in spite of the slightly lower percentage share of teachers, there are slightly more teachers per one thousand pupils in the higher accountability pressure schools. There were 6.71 teachers per one thousand pupils in Science in high accountability pressure schools, compared with the statewide average of 6.06. For Social Studies, high accountability pressure schools had 6.93 teachers assigned per one thousand pupils, contrasted with 6.20 teachers per one thousand pupils statewide. After examining these data, it appears that there is not an appreciable difference in staffing patterns in Science and Social Studies in high accountability pressure schools compared with the state average allocations.

Within the group of high accountability pressure schools, the share of staff members assigned to the area of Administration and Supervision is slightly greater than the state average. This can be seen both in the percentage share of staff members in this category as well as in the teachers per one thousand pupil ratio values. Statewide, 3.58% of staff members were assigned to the job category of Administration and Supervision, whereas within high accountability pressure schools, this value was 4.09%. High accountability pressure schools also had approximately one more staff member per one thousand pupils in this category than the state average; the statewide value was 3.28 staff members per one thousand pupils, compared with 4.27 staff members per one thousand pupils in the high accountability schools group.

The curricular categories of Art Education, Family and Consumer Science, and Health and Physical Education did not show any real difference in staff distribution from the statewide average over the course of the data collection period. In the category of Art Education, high accountability schools dedicated 2.00% of staff members to this category, compared with 2.16% average statewide. In terms of teacher per one thousand pupil ratio values, there were 2.08 Art Education teachers per one thousand pupils in the group of high accountability pressure schools, and 1.98 teachers per one thousand pupils in the total statewide data set. In the area of Family and Consumer Science, 0.98% of staff members were assigned to this job category statewide, compared with 0.92% of staff members in the high accountability pressure schools. In the area of Health and Physical Education, 6.45% of staff members statewide were assigned to this category, as were 6.41% of staff members within high accountability pressure schools.

Two job categories that appear to have a noticeably lower share of staff members in high accountability pressure schools than the statewide average are the categories of Music Education and World Language. In Music Education, the statewide average percentage share of teachers for the duration of the data collection period was 3.40% with a ratio of 3.11 teachers per one thousand pupils. In high accountability pressure schools, only 2.52% of teaching staff members were assigned to Music Education, with a ratio of 2.63 teachers per one thousand pupils. The area of World Language shows an apparent difference between the statewide average and the high accountability pressure schools. Statewide, 4.02% of teaching staff members were assigned to World Language, compared with only 2.31% in high accountability pressure schools. An average of 2.40 teachers per one thousand pupils were assigned to World Language within the high accountability pressure schools, compared with an average of 3.68 teachers per one thousand pupils statewide.

The group consisting of those schools that reached the highest level of accountability pressure during the existence of the No Child Left Behind Act comprised the smallest data set in the study, with a total of just 16 schools reaching this level by school year 2010-2011. To be counted in this group, the school must have reached a SINI status of Year 8, 9, or 10, and school year 2008-2009 was the earliest calendar year in which a school would have been chronologically capable of reaching this status group. These schools are referred to as the very high accountability pressure schools. Within this group, several job category statistics are interestingly different from the statewide average. Schools in the very high accountability pressure group had a much higher than average number of teachers assigned per one thousand pupils overall. The statewide average ratio of teachers per one thousand pupils was 91.57, compared with an average of 117.68 as an average for very high accountability pressure schools. For the three years of data collection for this category, the numbers of teachers per one thousand pupils were 138.48, 141.80, and 105.02; all well above the state average.

When the two main focal areas of standardized testing, English Language Arts and Literacy and Mathematics, are examined in the very high accountability pressure schools, one can observe that the share of teachers assigned to these tested areas is significantly higher than the corresponding statewide averages. In English Language Arts and Literacy, 13.57% of teachers, or 12.43 teachers per one thousand pupils statewide were assigned on average to this category. In very high accountability pressure schools, these corresponding values are 15.44% and 18.18 teachers per one thousand pupils. For Mathematics, the difference is even greater; statewide, 10.59% of teachers were assigned to Mathematics, with an average ratio of 9.70 teachers per one thousand pupils. In very high pressure schools, these values were 15.99% and 18.81 teachers per one thousand pupils. This is nearly double the number of Mathematics staff members per one thousand pupils in very high accountability pressure schools compared with the state average.

In the job categories of Science and Social Studies, it can be seen that there are slightly more teachers per one thousand pupils assigned to these categories as well when compared to the state average. Keeping in mind that many more teachers are available overall in the very high accountability pressure schools, and the fact that the percentage share of teachers assigned to both of these curricular areas is slightly lower than the state average percentage allotment of teaching staff, it appears that these schools do not fare much differently than the statewide average. For the category of Science, 6.62% of teachers on average, statewide were assigned to this category compared with 6.57% of teachers within very high accountability pressure schools. An average of 6.06 teachers per one thousand pupils were assigned to Science statewide, compared with an average of 7.74 teachers per one thousand pupils in very high accountability pressure schools. In Social Studies, a statewide average of 6.78% of all teachers were assigned to this category, compared with 6.23% of teachers in very high accountability pressure schools. All middle schools statewide had an average of 6.20 teachers per one thousand pupils in Social Studies over the course of the data collection period, compared with 7.33 teachers per one thousand pupils in the very high accountability pressure schools.

The category of Health and Physical Education does not show an appreciable difference in terms of the percentage share of teachers assigned to this category compared with the state average; 6.37% of teacher assignments in very high accountability schools compared with the state average of 6.45%. In regards to the teachers per one thousand pupils ratio values, one can observe that this equivalent percentage share does equate to more teachers per one thousand pupils; this is most likely due to the fact that there are more teachers overall in the very high accountability pressure schools. There were 7.50

teachers per one thousand pupils on average in the very high accountability pressure schools, compared with an average of 5.90 teachers per one thousand pupils in Health and Physical Education statewide.

In the category of Administration and Supervision, one can observe a higher percentage share of teachers assigned to this category and also a higher ratio of teachers per one thousand pupils when compared with the state average values. Statewide, 3.28 staff members were assigned per one thousand pupils to Administration and Supervision, while 5.51 staff members were similarly assigned in very high accountability pressure schools. In terms of the staff members per one thousand pupils in this category, the statewide average was 3.58% of staff, whereas in very high accountability pressure schools, 4.68% of staff was similarly assigned.

Another job category that demonstrates a higher percentage share of teachers in the very high accountability pressure schools when compared with statewide average values in the area of Business Education. Although a very small share of the teaching population, only 0.33% statewide, 1.10% of very high accountability pressure school teachers were assigned to this category. This is reflected as 1.29 teachers per one thousand pupils in the very high accountability pressure schools, compared with only 0.30 teachers per one thousand pupils statewide. Although the numbers are very small, the share of teachers in this category in the very high accountability pressure schools is more than three times the share in this category as a statewide average. This may be due to increased offerings of business math classes in these schools, but that should be considered merely as a hypothesis.

Family and Consumer Science is another job category that comprises a very small proportion of teachers statewide; only 0.98%. In very high accountability schools, the percentage share is about half of this number, at 0.50%. High accountability schools have an average of 1.17 teachers per one thousand pupils assigned to this category, compared with 0.90 teachers per one thousand pupils statewide. Therefore, although a much lower percentage share of teachers are assigned to this area, it appears as though the greater number of teachers overall in these high accountability schools compensates for much of the disparity when we look at the number of teachers per one thousand pupils. Although slightly lower in the very high accountability schools group, the impact is most likely not as severe as illustrated by the comparison of percentage share of staff alone.

Industrial Arts is a similar type of job category, in that it consists of a relatively small number of teachers. An average of only 1.29% of teachers statewide were assigned to this category, and 1.00% similarly assigned in very high accountability pressure schools. When examining the teachers per one thousand pupil ratios for Industrial Arts, the values of 1.18 as a statewide average and 1.17 in very high accountability schools indicates that there is not much of a disparity in the number of teachers available to service the students, although the percentage share looks to be more disparate than the teachers per one thousand pupils ratios. Once again, it is likely that due to the higher number of teachers overall within the very high accountability schools, it is possible to have a lower overall percentage share of teachers in a category and maintain a similar teacher to student ratio.

In the areas of Art Education and Music Education, we see an equal or slightly higher share of teachers assigned to Art Education in the very high accountability pressure schools, but a noticeably smaller than state average proportion of teachers assigned to Music Education in the high accountability pressure schools. Art Education staff members comprise 2.16% of the share of job assignments statewide, compared with 2.29% in the very high accountability pressure schools. An average of 2.70 teachers per one thousand pupils were assigned to Art Education in very high accountability schools, compared with 1.98 teachers per one thousand pupils statewide. In Music Education, 3.40% of teachers statewide are assigned to this category, compared with only 2.39% in very high accountability pressure schools. 3.11 teachers per one thousand pupils were available in the Music Education category statewide, compared with only 2.81 teachers per one thousand pupils in the very high accountability pressure schools.

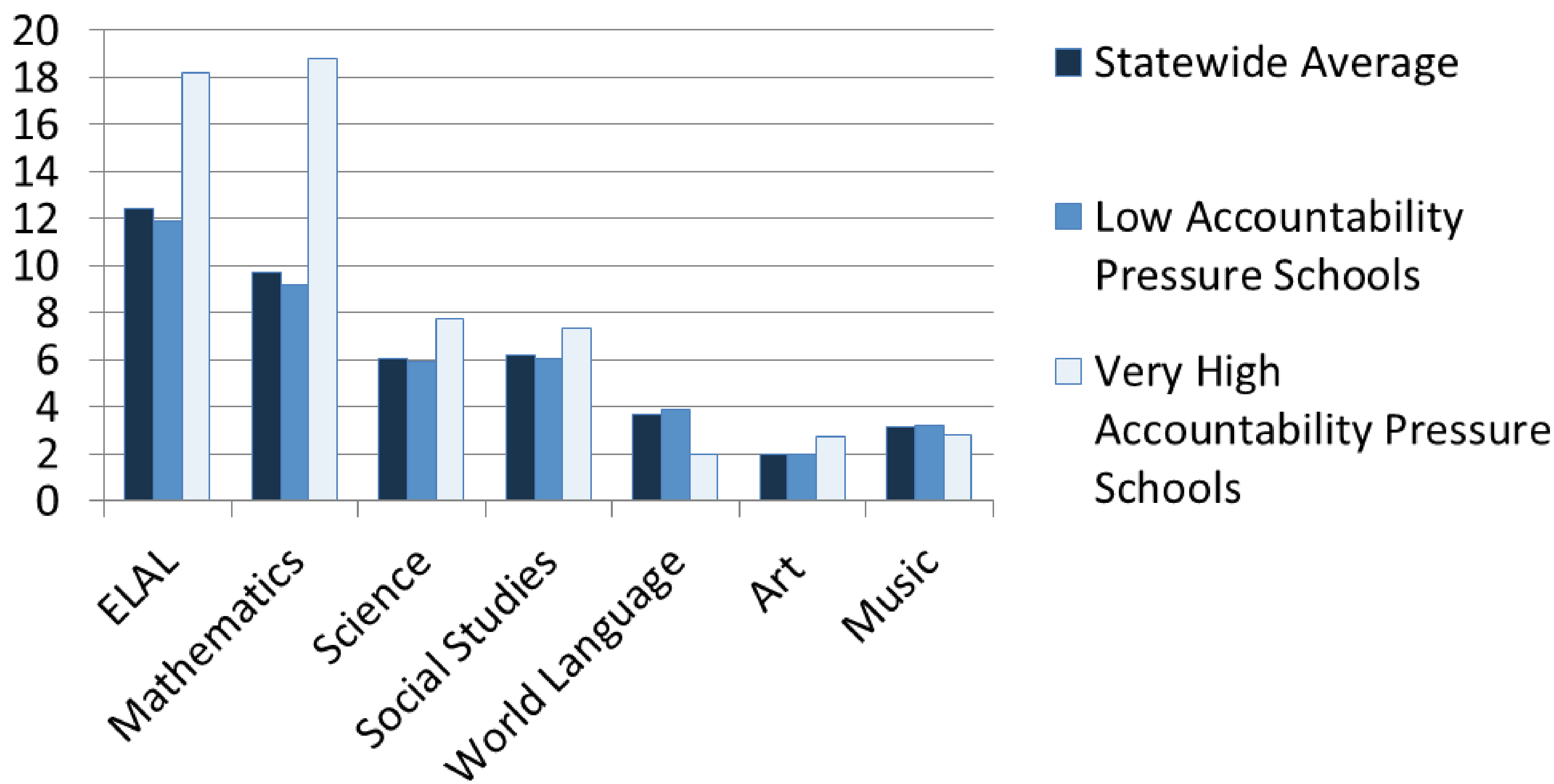
Once again, the category of World Language stands out as an area of incongruity. Statewide, 4.02% of teachers are assigned to the World Language category, compared with a mere 1.69% of teachers that are similarly assigned within the very high accountability pressure schools. When examining the ratio of teachers per one thousand pupils, 3.68 is the average for the state, contrasted with only 1.99 teachers per one thousand pupils in the very high accountability pressure schools. This represents a reduction by nearly half the number of staff members assigned to this category in the very high pressure schools as opposed to the statewide average.

Overall, it appears as though in spite of the increased number of teachers per one thousand pupils assigned to the very high accountability pressure schools, the distribution pattern of these teachers is not the same in all areas as the statewide average.

Chart 4. Teachers per One Thousand Pupils by Job Category and Accountability Pressure vs. Statewide Average

Curricular Area	Statewide Average	Low Accountability Pressure	Very High Accountability Pressure
ELAL	12.43	11.90	18.17
Mathematics	9.70	9.15	18.81
Science	6.06	5.92	7.74
Social Studies	6.20	6.06	7.33
World Language	3.68	3.87	1.99
Art	1.98	1.96	2.70
Music	3.11	3.20	2.81
Total Teachers	91.57	90.30	117.68

Figure 4. Teachers per One Thousand Pupils by Job Category and Accountability Pressure vs. Statewide Average



<u>Research Question #3</u>

3. Over the last decade, was there a significant shift in average statewide personnel allocation in New Jersey middle schools in the following subject areas?

a) Mathematics
b) English Language Arts and Literacy
c) Science
d) Social Studies
e) World Language
f) Visual and Performing Arts

To obtain a percentage change over time, the researcher calculated an average of the teachers per one thousand pupil ratios for each job category for the total data set of middle schools for the state of New Jersey over the twelve year period from school year 1999-2000 through school year 2010-2011. The average ratio value for the first four years and the average ratio value for the last four years of the study data were calculated. The percent change for these two beginning and ending average values was then calculated.

[(year 1+year 2+year 3+year 4)/4=initial average ratio value;] [(year 9+year 10+year 11+year 12)/4=final average ratio value;]

*[((final average ratio value-initial average ratio value)/initial average ratio value)*100=percent change]*

The percent change over time in the teachers per one thousand pupil ratios can be observed in Table 41 in Appendix A. Summary data for the main curricular areas can be observed in Chart 5 below.

On the whole, by looking at the total column of Table 41 or of Chart 5, one can see that the number of teachers per one thousand pupils, statewide, as a total of all job categories, increased by 11.78%.

Chart 5. Percent Change Over Time in Teachers per One Thousand Pupils Ratios by Job Category: Statewide Average

	ELAL	Math	Science	Social Studies	World Lang.	Art	Music	Total
Initial Avg. Ratio	10.46	7.38	4.98	5.07	2.97	1.88	2.96	87.10
Final Avg. Ratio	16.63	12.60	7.73	7.44	4.19	2.07	3.26	97.36
% Change	58.99	70.72	46.97	46.69	40.98	10.15	10.25	11.78

The greatest percentage increase observed statewide was that of Mathematics teachers with an increase of 70.72%, followed by English/Language Arts Literacy with a 58.99% increase. The categories of Science and Social Studies displayed a percentage increase of 46.97% and 46.69%, respectively. Each of these core academic areas clearly increased at a much more significant rate than the overall average rate of increase for all job categories combined. There was, obviously, an increase in all four major academic curricular areas, but the increase observed in Mathematics and English Language Arts and Literacy teachers far surpasses the amount of increase observed in the categories of Science and Social Studies. This seems to indicate that there was a greater focus on increasing the number of Mathematics and English Language Arts and Literacy teachers and a lesser focus on Science and Social Studies both as teachers were shifted from the Elementary Generalist category and as new teachers were added to schools during this time period.

Another curricular area which displayed a significant amount of growth over the duration of the data collection period was the category of World Language. Although this category represents a smaller share of the overall teacher allocations when compared with the four main core curricular areas discussed above, the category of World Language teacher assignments increased by 40.98% over the course of this study. This is nearly as much of an increase as seen in Science and Social Studies, and a much greater increase than in any of the other non-core subject areas.

Statewide, several job category areas showed an increase of approximately 10%, which was very close to the statewide overall percentage increase. These job categories were: Administration and Supervision (10.10% increase), Art Education (10.15%

increase), Health and Physical Education (9.88% increase), and Music Education (10.25% increase). Once again, the average increase statewide was 11.78%, so while these categories did increase at a reasonable pace, they did not increase as much as the statewide average, and also were most definitely outpaced by the four main core academic subject areas by almost four-fold in the case of Science, Social Studies, and World Language; by nearly six-fold in the case of English Language Arts and Literacy; and by nearly eight-fold in the case of Mathematics.

Certain job category areas showed a decline in the number of teachers assigned per one thousand pupils over the course of the twelve year data collection period. Those job categories were Family and Consumer Science (-42.61%) and Industrial Arts (-34.32%). These data show a sharp decline in the average teacher per one thousand pupil ratios in these two job category areas.

The category of Elementary Generalist also showed a steep decline, -22.51%, but this is likely in large part due to the requirement that all teachers in the middle school setting in the state of New Jersey were required by June 30, 2007 to be “highly qualified” under No Child Left Behind in the subject area that they were assigned to teach. This likely caused a shift from teachers being classified as a “generalist” job code to a job code of one of the four main content areas: English Language Arts and Literacy, Mathematics, Science, or Social Studies.

Research Question #4

4. In New Jersey middle schools, does a relationship exist between the socioeconomic context of a school and the changes in personnel allocation by subject area over time?

Similarly to Research Question #3, in this question, the researcher calculated the percent change over time in the teachers per one thousand pupil ratios for each job category over the duration of the data collection period. For Research Question #4, the percent change was calculated for the two lowest and two highest socioeconomic status groups of schools in the state of New Jersey. These groups are comprised of the same schools that were discussed in portions (b) and (c) of Research Questions #1 and #2. This will allow the examination of the differences in the teacher per thousand pupils ratio values for schools from both the lowest and highest socioeconomic context groups within the state. These values can then be compared both to the statewide average and to each other.

To obtain a percentage change over time, the researcher utilized the teachers per one thousand pupil ratios for each job category for the total data set of middle schools for the state of New Jersey over the twelve year period from school year 1999-2000 through school year 2010-2011. The average ratio value for the first four years and the average ratio value for the last four years of the study data were calculated. The percent change for these two beginning and ending average values was then calculated. The results tables for these calculations can be seen in Tables 42 through 45 in Appendix A. Table 42 displays data for DFG A schools, the lowest socioeconomic group. Table 43 contains data for DFG B schools and Table 44 contains DFG I school data. Table 45 contains the data output for DFG J schools, the highest socioeconomic status group. Chart 6, below, contains summary data.

Chart 6. Percent Change in Teacher per One Thousand Pupils Ratios by Job Category and Socioeconomic Status

Curricular Area	DFG A	DFG B	DFG I	DFG J
ELAL	94.17%	74.13%	55.53%	67.00%
Mathematics	156.85%	101.99%	31.23%	2.39%
Science	118.83%	61.04%	24.55%	45.51%
Social Studies	87.80%	60.88%	31.63%	12.48%
World Language	71.48%	76.20%	14.79%	8.11%
Art	29.94%	0.56%	5.73%	-12.23%
Music	17.06%	16.04%	8.74%	12.48%
Total Teachers	25.09%	11.50%	9.04%	3.22%

Amongst the low and high socioeconomic status groupings, obvious differences exist in the two standardized test content areas of English Language Arts and Literacy and Mathematics. For the two lowest socioeconomic groups, the percentage increase in the number of English Language Arts and Literacy teachers per one thousand pupils over the duration of the data period was 94.17% and 74.13%. This is compared with the two highest socioeconomic groups, which displayed a corresponding increase of 67.00% and 55.53%. Compared to the statewide average value of 58.99% as seen in Table 41, it becomes apparent that the lower socioeconomic status schools had a much greater increase in the ratio of teachers per one thousand pupils in the area of English Language Arts and Literacy when compared with both the statewide average and the higher socioeconomic status schools. A similar, yet even more striking trend can be seen in the area of Mathematics. For the lowest socioeconomic schools, the ratio of Mathematics teachers per one thousand pupils increased by 156.85% in DFG A schools and 101.99% in DFG B schools. Both of these values are well above the statewide average of 70.72%, with the DFG A schools having more than double the percentage increase of the statewide average. In sharp contrast, the DFG I and J schools had percentage increases of only 31.23% in DFG I schools and a barely perceptible increase of 2.39% in the DFG J schools.

The categories of Science, Social Studies, and World Language all displayed a greater percentage increase in the teacher per one thousand pupil values in the lower socioeconomic status schools than in the higher socioeconomic status schools during the course of the data collection period. However, it should be noted that in all of these areas, the ratio values themselves are lower in the low socioeconomic schools than in the higher socioeconomic status schools. The final ratio values in the lower socioeconomic status schools are lower than, or nearly lower than, the initial, pre-increase ratios for the higher socioeconomic status groups of schools. This basically indicates that the higher socioeconomic status schools had more teachers per one thousand pupils at the start of the school year in 1999 in these content areas than did the lower socioeconomic schools after twelve years of a steady increase to the school year of 2010-2011. Also, even though the DFG I and J schools had more teachers per one thousand pupils than the DFG A and B schools in these areas, the DFG I and J schools still increased their ratio values over time, just not as rapidly as the lower socioeconomic status schools. This is most noticeable in the area of World Language, where the DFG I and J schools final average teachers per one thousand pupils ratio values of 5.94 and 7.04, which were in sharp contrast to the corresponding values of 1.95 and 2.55 in the DFG A and DFG B schools, respectively.

In the areas pertaining to Visual and Performing Arts, which fall under the statewide job categories of Art Education and Music Education, there does not seem to be much of a disparity in the percentage change in teachers per one thousand pupils ratio values over time in any of the four groups of schools. The ratio numbers themselves are very low, so caution should be utilized to not give too much weight to a percentage value that may appear large, but only represents a change of perhaps less than 0.4 teachers per one thousand pupils. When looking at the initial and final ratio values themselves, it is apparent that there were more Music Education teachers per one thousand pupils in the higher socioeconomic status schools, with average initial and final ratio values of 3.48 and 3.92 in DFG J schools and 3.58 and 3.89 in DFG I schools. The lower socioeconomic status schools appear to have approximately one less teacher per one thousand pupils in Music Education, with initial and final teacher per one thousand pupil average ratio values of 2.14 and 2.50 in DFG A schools and 2.62 and 3.04 in DFG B schools. This indicates that the DFG A and DFG B schools would have to increase Music Education teachers by 50% in order to obtain the same ratio values as those seen in the higher socioeconomic status schools.

In the area of Art Education, there is also a higher initial and final average ratio value of teachers per one thousand pupils in the two higher socioeconomic status groups of schools than in the two lower socioeconomic status groups, but the difference is not as great as with Music Education. It is interesting to note that the teachers per one thousand pupils final average ratio value was lower in DFG J schools than the initial average ratio value, a drop from 2.92 to 2.56 teachers per one thousand pupils. However, in spite of this drop, the lower final ratio value for DFG J schools was higher than the final ratio value for all other groups: DFG I schools had a final ratio value of 2.27, DFG B schools had a final ratio value of 1.89, and DFG A schools had a final ratio value of 2.16.

Research Question #5

5. Do any relationships exist between personnel allocations in New Jersey middle schools and the schools' "No Child Left Behind" accountability pressure status?

For the initial comparison of teacher distribution across the four accountability pressure groups, it is most pragmatic to refer back to Tables 27, 31, 35, and 39 in Appendix A. These tables display the number of teachers per one thousand pupils assigned to each of the sixteen job categories for each of the four accountability pressure groups: low accountability pressure, moderate accountability pressure, high accountability pressure, and very high accountability pressure. These data tables were carefully compared to determine if any trends exist as accountability pressure driven by No Child Left Behind requirements increases. Summary data for the main curricular areas can be seen in Chart 7 below.

Upon examining these data tables, it is immediately apparent that as accountability pressure increases, the ratio of teachers per one thousand pupils increases in all four major academic content areas: English Language Arts and Literacy, Mathematics, Science, and Social Studies. From lowest accountability pressure group to highest accountability pressure group, the average ratio of teachers per one thousand pupils progresses as follows for English Language Arts and Literacy: 11.90, 13.92, 16.69, and 18.17 teachers per one thousand pupils. For Mathematics, the average ratio values from lowest accountability pressure group to highest accountability pressure group increase in a similar fashion as follows: 9.15, 11.19, 13.70, and 18.81 teachers per one thousand pupils.

Chart 7. Teacher per One Thousand Pupils Ratios by Job Category and Accountability Pressure

Curricular Area	Low Accountability Pressure	Moderate Accountability Pressure	High Accountability Pressure	Very High Accountability Pressure
ELAL	11.90	13.92	16.69	18.17
Mathematics	9.15	11.19	13.70	18.81
Science	5.92	6.60	6.71	7.74
Social Studies	6.06	6.78	6.93	7.33
World Language	3.87	3.07	2.40	1.99
Art	1.96	2.00	2.08	2.70
Music	3.20	2.73	2.63	2.81
Total Teachers	90.30	93.44	104.30	117.68

In the less frequently state tested area of Science, the ratio values that correspond with the increasing accountability pressure groups, from lowest accountability pressure to highest accountability pressure were: 5.92, 6.60, 6.71, and 7.74 teachers per one thousand pupils. In the category of Social Studies, which as of yet is not a part of the state standardized testing program in New Jersey, the ratio values are: 6.06, 6.78, 6.93, and 7.33 teachers per one thousand pupils as the groups progress from the lowest accountability pressure schools to the highest accountability pressure schools. The data indicate that a smaller share of teachers are dedicated to these non-tested, or lesser tested, core academic areas, but even so, as accountability pressure increases so steadily does the number of teachers assigned per one thousand pupils in these areas.

Interestingly, the opposite association can be seen between teacher per one thousand pupil ratios and accountability pressure in the category of World Language. This content area declines dramatically in terms of teachers per one thousand student ratio values as accountability pressure increases. In the lowest accountability pressure schools, there was an average of 3.87 teachers per one thousand pupils; this declines to 3.07, then 2.40, and finally 1.99 teachers per one thousand pupils in the highest accountability pressure schools. The effect of this is actually more dramatic than shown here, due to the fact that the overall number of teachers assigned across all content areas increases with increased accountability pressure from 90.30 teachers per one thousand pupils in the lowest accountability pressure category to 93.44 teachers per one thousand pupils in the moderate accountability pressure group, followed by 104.30 teachers per one thousand pupils in the high accountability pressure group, and finally 117.68 teachers per one thousand pupils in the highest accountability pressure group of schools. As this overall number of teachers increases, it is still apparent that those additional teachers are not distributed evenly across the job categories; some, like the tested areas of English Language Arts and Literacy and Mathematics appear to increase at a rate that is disproportionate to the overall increase in the number of teachers.

In the areas of Visual and Performing Arts, identified within this study data set as the job categories of Art Education and Music Education, several observations can be made; however, the data trends are not very profound. The highest ratio value observed in the category of Art Education, at a value of 2.70 teachers per one thousand pupils, exists in the highest accountability pressure group of schools. The ratio value of 2.70 is greater than the values of the other groups, which had ratio values of 2.08 for high accountability pressure schools, 2.00 teachers per one thousand pupils for moderate accountability pressure schools, and 1.96 teachers per one thousand pupils for low accountability pressure schools. It is most likely the case that the higher accountability pressure schools do not, in practice, have a larger share of Art Education teachers than do the lower accountability pressure groups; the fact that the highest ratio value is in the highest accountability pressure category is likely due to the overall increase in the total number of teachers available per one thousand pupils when considering the relatively small share of teachers assigned to this category. In the area of Music Education, however, one can see that the highest ratio value of 3.20 teachers per one thousand pupils does exist within the lowest accountability pressure group of schools. In continuing with the line of thinking related to the Art Education category, the fact that there is not an increase in the teacher per one thousand pupil ratio in the area of Music Education, despite the overall increase in the number of teachers per one thousand pupils as accountability pressure increases, indicates that Music Education may be an area that is somewhat neglected as schools face increasing demands in the core academic areas.

CHAPTER V

DISCUSSION

Summary

This study addressed several calls for additional research. Monk and Hussain (2000) suggested additional research into the area of school resource and staffing allocations, particularly calling for a focus on longitudinal studies conducted at the "micro-level", or individual school level. Baker (2012) noted that little empirical research has been completed in regards to the connections that may exist between teacher staffing distributions (school resource allocations) and response to accountability pressures faced due to NCLB. This dissertation attempted to address both of these needs, and the findings coincided with results and observations from several previous studies (Baker, 2003; Booher-Jennings, 2005; Kantor & Lowe, 2006; Nichols & Berliner, 2008; Parsad & Spiegelman, 2012; Vasquez-Heilig & Darling-Hammond, 2008; Winstead, 2011).

The data in this study do show that both socioeconomic status and accountability pressure from high-stakes testing have an effect on the distribution of teaching staff members. In large part, those schools in high accountability pressure groups experienced a disproportionately high amount of teachers assigned to English Language Arts and Literacy and Mathematics areas, with a much lower proportion of teaching staff members in those schools assigned to untested areas such as Science, Social Studies, World Language, and Music Education. This would seem to indicate that as schools struggle to meet the demands of the high-stakes standardized tests, non-tested areas are sacrificed as more resources are directed into subject areas that are contained on the state tests. This seems to indicate in the data that students in the schools facing high accountability pressure would have less of a well-rounded educational opportunity when compared with their peers in schools facing lower accountability pressure. The data from this study does demonstrate such a trend, and therefore adds validity to the claims made by previous studies (Jones, Jones, & Hargrove, 2003; Jones, 2007; Horn, 2003; Heilig & Darling-Hammond, 2008) that the presence of NCLB and high-stakes testing may have unintended negative consequences, including contributing to a reduction in the curricular offerings in non-tested areas, and subsequently leading to a decrease in educational opportunities for students in underperforming schools. It is apparent from the data gathered during this study that the students attending schools that have difficulty in reaching standardized testing benchmarks and students in low socioeconomic communities do not receive the same supply of teachers or access to as diverse of a curriculum as do students who attend schools that experience low accountability pressure or are located in higher socioeconomic status communities.

A brief summary of the connections demonstrated in the data between each subject area and socioeconomic status, as well as between each subject area and accountability pressure follows.

Average Statewide Distribution of Teaching Staff

One of the noteworthy findings of this study was the observation that there were nearly twice the number of teachers per one thousand pupils allocated in the areas of English Language Arts and Literacy and Mathematics as there were in the other two main content areas of Science and Social Studies. It can be observed that although all four content areas displayed an increase in the number of assigned staff members per one thousand pupils over time, the greatest increase is observed in the area of Mathematics.

It can clearly be seen that of the four main academic content areas, English Language Arts and Literacy has the highest ratio of teachers per one thousand students, followed by Mathematics, Social Studies, and Science. The area of World Language also displayed an increase in both the percentage share of teachers assigned to this category as well as in the ratio of teacher per one thousand pupils over time.

The job categories with the least number of staff members at the middle school level in New Jersey were Vocational Education, Business Education, Family and Consumer Science, and Industrial Arts. The number of teachers employed in the categories of Family and Consumer Science and Industrial Arts have both steadily declined over the course of time from the 1999-2000 school year through the 2010-2011 school year. The number of Family and Consumer Science teachers dropped off by more than half by school year 2010-2011. Similarly, in the category of Industrial Arts, there was a nearly 50% reduction in staff members statewide in this category.

Notice also that the percentage of teachers in the Elementary Generalist category decreases over time, whereas the percentage of teachers in English Language Arts and Literacy, Mathematics, Science, and Social Studies all increase over time. This can most likely be attributed to the requirements for Highly Qualified teachers in the state of New Jersey, which became more strongly enforced leading up to the final deadline for Highly Qualified Status by June 30, 2007 (New Jersey Department of Education, 2013e). For this HQ requirement, teachers were required to meet certain standards implemented in the state of New Jersey in order to be permitted to teach in a core curricular area without incurring a penalty for the school. Once this requirement went into effect, many more teachers were compelled to declare a subject area of specialty, especially at the middle school level.

Also of interest is the observation that statewide, the percentage shares of teachers in the Art, Business, Health & Physical Education, and Music categories do not show much of a change over time. This would seem to indicate that while the four main content areas, English Language Arts and Literacy, Mathematics, Science, and Social Studies were increasing at a significant rate, supplemental areas of instruction such as Visual and Performing Arts, Business, and Health and Physical Education did not receive equal focus when increasing staff members. When considering the change in teacher per one thousand pupil ratios over the twelve year data collection period, one can see that the number of teachers per one thousand pupils, statewide, as a total of all job categories, increased by 11.78%. The four main content areas greatly exceeded this average amount, whereas most supplemental areas fell below this number.

The greatest categorical percentage increase over the twelve year data collection period observed statewide was that of Mathematics teachers, followed by English Language Arts and Literacy. The categories of Science and Social Studies displayed a percentage increases that were very similar to each other, but significantly less than the two primary tested subject areas. Each of these core academic areas clearly increased at a much more significant rate than the overall average rate of increase for all job categories combined. There was, obviously, an increase in all four major academic curricular areas, but the increase observed in Mathematics and English Language Arts and Literacy teachers far surpasses the amount of increase observed in the categories of Science and

Social Studies. This seems to indicate that there was a greater focus on increasing the number of Mathematics and English Language Arts and Literacy teachers and a lesser focus on Science and Social Studies both as teachers were shifted from the Elementary Generalist category and as new teachers were added to schools during this time period.

Another curricular area which displayed a significant amount of growth over the duration of the data collection period was the category of World Language. Although this category represents a smaller share of the overall teacher allocations when compared with the four main core curricular areas discussed above, the category of World Language teacher assignments per one thousand pupils increased by nearly the same percentage as Science and Social Studies. This increase represented a much greater increase than in any of the other non-core subject areas.

Statewide, several job category areas showed an increase in teacher per one thousand pupil ratios which was very close but slightly lower than the statewide overall percentage increase in teacher per one thousand pupil ratio values. These job categories were: Administration and Supervision, Art Education, Health and Physical Education, and Music Education. Once again, while these categories did increase at a reasonable pace, they did not increase as much as the statewide average, and also were most definitely outpaced by the four main core academic subject areas by almost four-fold in the case of Science, Social Studies, and World Language; by nearly six-fold in the case of English Language Arts and Literacy; and by nearly eight-fold in the case of Mathematics.

Certain job category areas showed a decline in the number of teachers assigned per one thousand pupils over the course of the twelve year data collection period. Those job categories were Family and Consumer Science and Industrial Arts. These data show a sharp decline in the average teachers per one thousand pupil ratios, particularly in the areas of Family and Consumer Science and Industrial Arts.

Socioeconomic Status and English Language Arts and Literacy Education

Initially when examining only the average percentage share of teachers assigned to the category of English Language Arts and Literacy, there does not seem to be a vast difference in the percentage of staff members assigned to this category based upon socioeconomic status of a school.

However, this is one instance where being able to view the data values for each individual year for each DFG group of interest illuminated an interesting point that does get muddied when only viewing average values. While the average percentage share values over time are not vastly different between the DFG categories, it can be seen that both the percentage share of teachers and the number of teachers per one thousand pupils do indeed vary between the lower socioeconomic status schools and the highest socioeconomic status schools.

Although the differences are slight, and each of the four DFG groups studied here displayed a similar increase of approximately 4% of English Language Arts and Literacy staff member assignments from 2000-2011, further examination of data related to all five research questions posed in this study reveals that a difference does exist between low and high socioeconomic status schools in this content area. The DFG J group of schools, those within the highest socioeconomic status group in the state of New Jersey, show both a lower percentage share of staff members and also a lower teacher per one thousand pupils ratio value than do the other socioeconomic groups. One may hypothesize that this is due to the fact that many of the wealthiest districts in the state, in addition to having all of the benefits that come with a socioeconomic advantage, are in most cases not faced with difficulties with meeting state benchmarks for standardized testing. The reduced level of accountability pressure experienced by these schools would reduce the need to have as much of an increased focus in this content area as would schools facing socioeconomic challenges as well as an increased pressure to meet performance goals in this tested area.

Socioeconomic Status and Mathematics Education

In a similar trend to what was observed in the category of English Language Arts and Literacy, not much of a disparity is initially observed amongst the overall average shares of teachers assigned to the category of Mathematics amongst the high and low socioeconomic status groups of schools. However, when the data are viewed individually by year, as well as by the ratio of teachers assigned per one thousand pupils over time, a clear difference emerges between the lower socioeconomic category schools and the higher socioeconomic category schools.

The two lowest socioeconomic status DFG groups, A and B, increased their percentage of mathematics teachers by approximately 6% over the course of the twelve years, whereas the highest two DFG groups, I and J, only increased their percentage of mathematics teachers by approximately one-half of one percent in the “J” schools, and by approximately 1.5% in the “I” schools.

The number of teachers per one thousand pupils as well as the percentage share of teachers assigned to Mathematics was initially higher in the higher socioeconomic schools than it was in the lower socioeconomic schools. This is also true when viewing the data regarding the ratio values of teachers per one thousand pupils; more teachers were assigned per one thousand pupils in higher socioeconomic schools than in lower socioeconomic schools at the beginning of the data collection period. However, by the end of the data collection period, it can be seen that the percentage share of teachers as well as the number of teachers assigned per one thousand pupils in the area of Mathematics is noticeably higher in the lower socioeconomic schools. This definitely represents a shift in staffing distribution over time; during this twelve year period there was a shift from higher socioeconomic status schools providing more teachers per one thousand pupils to lower socioeconomic status schools being the group to provide a more intense focus, and higher ratio value of teachers per one thousand pupils, in this area.

It is worth repeating that it was most beneficial to examine the data longitudinally and by individual school year; if only the total average percentages over the twelve year period were compared, this data trend would have gone completely overlooked. Kantor & Lowe (2006) cite the fact that “more than 70 percent of the nation’s school districts have responded to the testing requirements of NCLB by reducing instructional time in history, music and the arts in order to open up more time for instruction in reading and math, with the greatest reductions occurring in high-poverty districts” (p.484), and the data for this study reveal that this trend can certainly be observed in the case of low-socioeconomic middle schools in the state of New Jersey.

Socioeconomic Status and Science Education

In the category of Science Education, it is immediately noticeable in all data outputs that there was a larger percentage share of staff members devoted to this category in the higher socioeconomic status schools than in the lower socioeconomic status schools. Those schools that were members of the DFG J group had the highest percentage share of teachers assigned to this category as well as the highest ratio of teachers per one thousand pupils both as an overall average for the duration of the data collection period and as final data values at the end of the data collection period. Nearly 2% more of the share of teaching staff members were assigned to Science in the highest socioeconomic group when compared with the two lowest socioeconomic groups in the final year of the study data; this is a significant percentage difference, considering that the two lowest socioeconomic groups hover around approximately 6% of teaching staff members assigned to Science, whereas DFG J schools are just over 8%. Although the two lowest socioeconomic groups, the DFG A and B schools, had a greater percent increase in their ratios of teachers per one thousand pupils than did the DFG I and J schools during the data collection period, the two lowest socioeconomic groups did not manage to catch up to the levels of the higher socioeconomic schools. Darling-Hammond (2006) stressed the importance of both interdisciplinary teaching and a diverse curriculum that includes student portfolio assessments on the completion of science labs, lab reports and action research. With a lesser share of staff dedicated to non-tested or lesser-tested areas such as Science, particularly in low socioeconomic status schools as shown in this study, one wonders how it would be possible to recreate the successful school model outlined by Darling-Hammond.

Socioeconomic Status and Social Studies Education

Social Studies findings were very similar to the findings for Science. The two highest socioeconomic groups of schools had both a higher average percentage share of teachers assigned to Social Studies as well as higher teachers per one thousand pupils ratio values than the two lowest socioeconomic groups of schools.

Although there was a greater percentage increase in the teachers per one thousand pupil ratio values for DFG A and B than in DFG I and J schools, by the end of the study data, the lower socioeconomic status schools did not make up the gap that existed in the teachers per one thousand pupil ratio values: The higher socioeconomic status schools continually had a higher number of teachers assigned to this curricular area than did the lower socioeconomic status schools. In fact, the number of teachers per one thousand pupils in the Social Studies category in DFG I and J schools was higher at the beginning of the data collection period than were the teachers per one thousand pupil ratios at the end of the data collection period for DFG A and B schools. In spite of twelve years of increased staffing, the lower socioeconomic schools did not reach the same level of staffing allocations that can be observed in the highest socioeconomic status schools. It is reasonable to conclude that, similarly to Science, the lower socioeconomic status schools have less of a focus on the non-state-tested academic areas than they do on the curricular areas that are tested annually by the state.

Socioeconomic Status and World Language Education

World Language stands out as the area with the most significant disparity between the lowest socioeconomic status schools and the highest socioeconomic status schools.

Those schools that were members of the DFG J group had the highest percentage share of teachers assigned to this category as well as the highest ratio of teachers per one thousand pupils both as an overall average for the duration of the data collection period and as final data values at the end of the data collection period. In fact, at the beginning of the data collection period, the percentage share of teachers and the teachers per one thousand pupil ratios were higher in DFG J schools than they were at the end of the data collection period for the two lowest socioeconomic status groups of schools. Keep in mind; this is prior to the DFG J schools then continuing on over the data collection period to exhibit the greatest percentage increase over time of all DFG groups in the study. The data showed that there were more than three times the amount of World Language teachers per one thousand pupils in the DFG J schools than in the DFG A schools. This observation is in line with the observations of Nichols and Berliner (2008) that economically advantaged students do not suffer as much as a result of NCLB pressures as do economically disadvantaged students in regards to the educational opportunities made available to students.

Socioeconomic Status and Visual and Performing Arts Education

In the Art Education and Music Education job categories, a larger percentage share of teachers are assigned to these job categories in DFG I and J districts than are assigned in DFG A and B districts. In the area of Art Education, all four DFG category schools slightly declined in the percentage of teachers assigned. The percentage decline was approximately one-half of one percent across the board. However, it is noteworthy that the I and J DFG schools throughout the twelve years of data hovered in the 2.5%-3%

range of percentage of teacher assignment, whereas the DFG A and B schools remained at or below 2% of teaching staff assigned to this category. However, there was a slight increase in the number of teachers per one thousand pupils in the DFG A schools, from 1.79 in 1999-2000 to 2.06 in 2010-2011. This may be illustrative of a situation in which the number of students enrolled in Art classes has declined at a greater rate than the decline in number of staff members in this category. It may also be due to the fact that the lower socioeconomic schools have a higher teacher per one thousand pupil ratio overall as opposed to the higher socioeconomic status schools.

Percentage of teachers assigned to Music education in the DFG A and B schools remained relatively constant over the twelve-year period as well, with DFG A schools decreasing only slightly over the duration of the study. DFG B schools remained relatively constant, oscillating just at and slightly below 3% for the duration of the data. DFG I and J schools also do not show much change over time in the area of Music assignments, but similarly to Art, the percentage share of Music teachers in DFG I and J schools is higher at the beginning and through the duration of the data collection period than what is seen for the DFG A and B schools. DFG I and J schools range from just below to just above 4% of teaching staff members assigned to Music education, which is more than 1% higher than DFG B schools, and nearly double the percentage of teachers assigned to Music in 2010-2011 for DFG A schools. Similar trends can also be observed when studying the teacher per one thousand pupil ratio data. At the end of the data collection period, the DFG I and J schools have approximately one additional teacher per one thousand pupils than do the DFG A and B schools in the area of Music Education.

Shuler (2012) put forth the fact that students in the bottom socioeconomic quartile are far less likely to receive a sufficient education in the areas of art and music than are their higher socioeconomic status counterparts. Shuler (2012) also states that studies have shown that lower socioeconomic students benefit greatly from the inclusion of a music program in their curricular offerings, and yet they are the group that is least likely to receive this benefit. Parsad & Spiegelman (2012) also found that from school year 1999-2000 to school year 2009-2010, there was a decline in several areas of visual and performing arts education, most noticeably in schools with higher percentages of students receiving reduced and free lunch. Data from this study corroborates the data cited by Shuler (2012) and Parsad& Spiegelman (2012); it can be observed that students in New Jersey middle schools from the lowest DFG groups had fewer Music Education teachers available per one thousand pupils than did their higher socioeconomic status counterparts, therefore the data from this study corroborates that from the studies of Shuler (2012) and Parsad & Spiegelman (2012).

Socioeconomic Status and School Supervision and Administration

In the area of Administration and Supervision, it is noteworthy that the DFG B, DFG I, and DFG J schools all remain below 4% of the staff assignments in this category. Only DFG A schools are above the 4% mark. Also worth mentioning is that while the percentage share of staff assigned to the Administration and Supervision category declined very slightly in the DFG I and J groups, there was a relatively constant range amongst the DFG A and B schools. This phenomenon can also be observed in the teacher per one thousand pupil ratio data, where the DFG B, I, and J groups all remain in the range of approximately three to rarely just over four staff members per one thousand pupils. The DFG A schools have nearly four to just over five staff members per one thousand pupils throughout the duration of the data collection period, which is higher than both the statewide average and also the average for the higher socioeconomic groups of schools.

The findings from this category correspond with the findings of Baker (2003). Baker found that districts that had higher levels of available funding resources per pupil tended to have disproportionately higher spending on school administration than did districts with less revenue available. In regards to this current study, we can see that the administrative share of staff assignments is higher in the lower socioeconomic status schools than in the higher socioeconomic status schools. Although this may seem to be contradictory, it is in fact not. In New Jersey, the 31 school districts categorized as "Abbott Districts" receive additional funding support from the state of New Jersey, and in most cases have a much higher cost per pupil than non-Abbott districts. Of the 31 school districts that are Abbott Districts, only 2 (Hoboken and Neptune Township) of the 31 are not classified as DFG A or DFG B. Therefore, the conclusion made by Baker (2003) would seem to hold true in this study as well; many of the DFG A and B schools included in this study's data set likely have additional funding resources available when compared with their counterparts in higher DFG groups. The higher cost per pupil was previously associated with a higher assignment level of administrative staff within the school (Baker, 2003).

Socioeconomic Status and Other Instructional Areas

The category of Family and Consumer Science is worth discussing, although in all four DFG groups this category only began with between 1.36% and 1.67% of teachers. The interesting trend is not only that teachers in this category have decreased by nearly half in all DFG groups, but that in DFG A schools, which had the highest proportion of Family and Consumer Science teachers to start with at the onset of the data collection period, ended up having the lowest percentage share of teachers assigned to this category with only 0.20% of teachers by school year 2010-2011. It appears that the schools in which this was the most significant share of teachers overall are also the schools in which this category was most dramatically decreased. The same trend is reflected in the teacher per one thousand pupil data for this category.

The percentage share of Heath and Physical Education teachers declined in all four DFG groups, but declined the least in DFG J schools. When the numbers of teachers per one thousand pupils are evaluated, however, it can be seen that in spite of the decreased percentage share of teachers in this area, the ratio values of teachers per one thousand pupils in all four DFG categories actually increased in all DFG groups except for DFG B schools. This could be reflective of the fact that the overall number of teachers increased over time in all DFG groups, but most significantly so in the lowest two DFG groups of schools. Therefore, it is possible to have more teachers assigned to a category and still have the category comprise a smaller share of the overall total of staff members in all job categories. This would translate as more teachers being added to all categories, but a smaller number of teachers being added to Health and Physical Education as compared to, say, Mathematics. This would occur when more teachers were added overall, and the number added to several other categorical areas outpaced the area of Health and Physical Education.

Accountability Pressure and English Language Arts and Literacy Education

Dillon (2006) discussed the fact that many schools nationwide, particularly those that do not fare well on state-required standardized tests have significantly increased, in some cases as much as tripled, the time spend on instruction in the areas of Language Arts and Mathematics.

In the area of English Language Arts and Literacy, it is apparent both in the relative percentage of assigned teachers and in the teachers per one thousand pupil ratios that a greater proportion of the staff members are assigned to English Language Arts and Literacy in schools facing high accountability pressure compared with schools facing low accountability pressure.

In terms of the average proportion of staff assigned by job category over the entire data collection period to the job category of English Language Arts and Literacy, both percentage and ratio values are much higher in the high accountability pressure group. In low accountability schools, an average of 13.17% of teachers were assigned to English/Language Arts Literacy, compared with 15.44% in the high accountability pressure schools. In terms of teachers per one thousand pupils, low accountability pressure schools had an average of 11.90 English/Language Arts teachers per one thousand pupils, whereas high accountability pressure schools had an average of 18.17 English Language Arts and Literacy teachers per one thousand pupils. Also worth noting is that in the first two academic years for the high pressure category, school years 2008-

2009 and 2009-2010, the teachers per one thousand pupil ratio was over 20 teachers per one thousand pupils.

When examining the group of schools with the lowest accountability pressure, and comparing the pattern of teacher allocation as well as the ratio values of teachers per one thousand pupils for each job category, there is not a discernable difference in any job category, including English Language Arts and Literacy between the statewide average values and the values for the low accountability pressure group schools.

The curricular area of English Language Arts and Literacy does begin to show a slightly higher percentage of teachers assigned to this area in schools facing moderate levels of accountability pressure when compared with corresponding statewide data and with the lowest accountability pressure group of schools. Ratio values of teachers per one thousand pupils also corroborate these findings. The difference seen here is not huge, but it is present.

In the group of high accountability pressure schools, the category of English Language Arts and Literacy shows a higher than average allotment of staff members than the state average, and the disparity is greater than is the one that exists for the moderate accountability pressure group. In the very high accountability pressure schools, one can observe that the share of teachers assigned this content area is significantly higher than the statewide average value, and is also greater than the high accountability pressure group. Basically, as accountability pressure increases, so does the ratio value of teachers per one thousand pupils. From lowest accountability pressure group to highest accountability pressure group, the average ratio of teachers per one thousand pupils progresses as follows for English Language Arts and Literacy: 11.90, 13.92, 16.69, and 18.17 teachers per one thousand pupils.

Accountability Pressure and Mathematics Education

The job category of Mathematics displays a similar data trend to the English Language Arts and Literacy category. Once again, the data show that as accountability pressure increases, so do both the percentage share of teachers and the ratio value of teachers per one thousand pupils. In Martin Luther King Jr. junior high school in Sacramento, California, approximately 17% of the student population is limited to only 55 minutes per day for all subject areas other than Language Arts, Mathematics, and Physical Education. Another 14% of the student population is forbidden from taking any classes other than in these three required subject areas. The school's principal, Mr. Samuel Harris, states that for the lower performing students of the school, these requirements have become a necessity (Dillon, 2006). When the data are examined from this study, a similar trend can be observed in the high accountability pressure middle schools in the state of New Jersey. To date, a case study in New Jersey replicating the drastic narrowing of the curriculum that is implemented in Martin Luther King junior high school has not yet been documented, but it is apparent from the data in this study that the proportion of staffing resources devoted to Mathematics in New Jersey has grown at a disproportionate rate, particularly in schools that are low-performing on standardized tests and as a result face high accountability pressure.

Over the course of the data collection period, an average of 10.13% of staff members were assigned to the Mathematics category in low accountability pressure schools, compared with 15.99% of teachers in high accountability pressure schools. In terms of teacher per one thousand pupil ratios, low accountability pressure schools averaged 9.15 teachers per one thousand pupils, whereas high accountability pressure schools averaged 18.81 Mathematics teachers per one thousand pupils. This equates to nearly double the number of teachers per one thousand pupils in the area of Mathematics in high accountability pressure schools as compared to low accountability pressure schools. For Mathematics, the average ratio values from lowest accountability pressure group to highest accountability pressure group increase as follows: 9.15, 11.19, 13.70, and 18.81 teachers per one thousand pupils.

Accountability Pressure and Science Education

In the area of Science Education, similarly to Mathematics and English Language Arts and Literacy, as accountability pressure increases, the ratio of teachers per one thousand pupils increases. However, in all four accountability pressure categories, the number of teachers per one thousand pupils assigned to Science is approximately half the number of teachers dedicated to the category of English Language Arts and Literacy in all four accountability pressure groups, and also half the number of teachers per one thousand pupils in Mathematics in the highest two accountability groups. In the very high accountability pressure group, there are over 18 teachers per one thousand pupils in both English Language Arts and Literacy and Mathematics, whereas there are only 7.74 teachers per one thousand pupils assigned to Science – less than half. This clearly shows that there are not as many staff members dedicated to Science instruction as in either of the two most frequently tested curricular areas of English Language Arts and Literacy and Mathematics. It is not difficult to conclude that the focus on resources for Science Education, especially in the highest accountability pressure schools, do not receive the same priority as do the areas of English Language Arts and Literacy and Mathematics, which are tested in every grade from grade three through grade eight. Perhaps the increased focus on performing in the two most frequently tested areas has forced the shift in resource allocation away from areas that are either tested less frequently, such as Science, which is tested only in grades four and eight in New Jersey. Nichols and Berliner (2008) also theorize that when low standardized testing scores are received by a school, a decrease in the time that teachers spend on non-tested subjects can occur. Marx and Harris (2006) also note that many principals and school leaders have shifted teaching time away from science in order to increase time spent on the two tested areas of mathematics and language arts.

Accountability Pressure and Social Studies Education

Social Studies as a category is in a very similar situation to Science. In terms of the teacher per one thousand pupil ratios, it is once again possible to see that the share of teachers, in terms of the ratio of teachers per one thousand pupils, increases as accountability pressure increases. Also in a similar fashion to Science, Social Studies is allotted approximately half of the number of teachers per one thousand pupils that are assigned to English Language Arts and Literacy and Mathematics. This is true for all four accountability pressure groups, with the exception of the lowest accountability pressure group, where the share of Mathematics teachers is only 50% greater than the share of Social Studies teachers in terms of the number of teachers per one thousand pupils. The fact that Social Studies is not tested at all in a standardized manner in the state of New Jersey is likely the reason that there is a much greater focusing of resources on the two main tested areas of Mathematics and English Language Arts and Literacy.

Jones, Jones, and Hargrove (2003) cite the narrowing of the curriculum as an unintended and negative consequence of the NCLB Act. They argue that a one-time test in limited subject areas, in most cases language arts and mathematics, results in the tested subjects gaining increased focus and increased instructional time at the expense of those subject areas that are not tested, such as science, social studies, music, and art. David McCullough, a historian, testified in front of a Senate Committee in June of 2005 and stated: "History is being put on the back burner or taken of f the stove altogether in many or most schools, in favor of math and reading" (p.2) (Dillon, 2006). As can be seen in the data in this study, staff assignments to the category of Social Studies are much lower, proportionately, when compared with staff assignments to the categories of English Language Arts and Mathematics, especially in the case of schools in all but the lowest accountability pressure group.

Accountability Pressure and World Language Education

The category of World Language was another curricular area in which a definite relationship between accountability pressure and teacher staffing distribution patterns could be observed. In terms of the average percentage share of staff assigned to this category over the duration of the data collection period, there is a clear decline in the percentage share of teachers assigned to this category as accountability pressure increases. In the lowest accountability pressure group, 4.28% of teachers were assigned to this category, and that value dropped off to only 1.69% for the highest accountability pressure group of schools. Schools in the highest accountability pressure group had only half of the number of teachers per one thousand pupils assigned to this category than did the lowest accountability pressure group. It appears as though those schools facing high pressure to perform in the core content category areas of Mathematics and English Language Arts and Literacy devote less personnel resources into the category of World Language Education.

Rifkin (2012) attributes the decline of importance given to the teaching of world languages directly to the increased pressure of schools to meet the standardized testing benchmarks in English Language Arts and Literacy and Mathematics. Dr. William Reese, a professor at the University of Wisconsin and an author on the subject of NCLB was quoted as saying:

> “Because of its emphasis on testing and accountability in certain subjects, it [NCLB] apparently forces some school districts down narrow intellectual paths. If a subject is not tested, why teach it?” (p. 2) (Dillon, 2006).

Apparently this line of thinking applies to the area of World Language education in middle schools in the state of New Jersey. The vast difference in the availability of World Language teachers in low versus high accountability pressure schools is illustrative of a shift of teacher staffing resources away from a non-tested subject area.

Accountability Pressure and Visual and Performing Arts Education

The category of Visual and Performing Arts consisted of two areas of job codes in New Jersey: Art Education and Music Education. In the area of Art Education, the highest accountability pressure schools have the highest ratio of teachers per one thousand pupils and the highest percentage share of staff assigned to this category, both by a slight margin. The increased teachers per one thousand pupil ratio is likely due to the fact that there are more teachers per one thousand pupils, overall, in the highest accountability schools, and the margin of 0.70 more teachers per one thousand pupils is low enough that it is possible the increase of teachers per pupil in this area is still less than it would have been had all curricular areas increased in the equal proportions as the overall number of teachers increased.

The area of Music Education is different from Art Education, in that the ratio of teachers per one thousand pupils is highest in the lowest accountability pressure group of schools. Also, the percentage share of teachers in the category of Music Education is highest in the lowest accountability pressure group, and decreases steadily as accountability pressure increases. This indicates that in spite of the increased overall teacher assignments to the highest accountability pressure schools, the share of personnel resources dedicated to Music Education in those schools still declined. Music Education was one area cited by Booher-Jennings (2005) as an area that was sacrificed in an effort to provide additional remedial instruction in Mathematics and English Language Arts and Literacy to elementary students on the verge of passing state standardized tests in a Texas school. Data from this study corroborates Booher-Jennings' (2005) observations.

In the Center on Education Policy report on Bayonne, New Jersey schools from the fourth year of NCLB implementation (CEP Bayonne City, 2006), it was reported that as a result of NCLB pressures, all arts education had been pushed into after-school only programs in favor of increasing, and in some cases, doubling the amount of classroom time dedicated to mathematics and language arts.

Shuler (2012) has also argued that the elimination of art and music education in favor of increased focus on “core” subjects is an injustice to all students. He argues that as legislators push to decrease the achievement gap in the areas of mathematics and language arts, even less attention is paid to other areas, such as music education, that are vital to the development of a well-rounded and educated citizen. The data from this study clearly shows that Shuler (2012) has a valid concern, as data from New Jersey middle schools clearly indicate that as a school faces higher accountability pressure, the share of teachers allotted to the Music Education category decline significantly.

Accountability Pressure and School Supervision and Administration

The share of staff members assigned to the job category of Supervision and Administration increased both in terms of average percentage share of teachers assigned to the category and in the ratio values of teachers per one thousand pupils as accountability pressure increased. The schools in the highest accountability pressure group had an average of 2.34 more staff members per one thousand pupils in this job category than did the schools in the lowest accountability pressure group. When the number of staff members in the lowest accountability pressure group is 3.17 and the increase is 2.34, that is a nearly two-thirds increase in the number of staff members in this category from the lowest accountability pressure schools to the highest accountability pressure schools.

Accountability Pressure and Other Instructional Areas

In the area of Health and Physical Education, the number of teachers per one thousand pupils increased slightly as accountability pressure increased, although the percentage share of staff members assigned to the category generally decreased as accountability pressure increased. This is most likely due to the fact that more teachers were hired in this area, although hiring in other categories must have outpaced this category. That would result in more teachers per one thousand pupils, and yet still an equal or lesser percentage share of teachers assigned to this category.

Although the category of Business Education comprises a very small percentage of the actual number of teachers employed in both categories of schools, it may be worth noting that the number of teachers per one thousand pupils in high accountability pressure schools, at 1.29, is noticeably higher than the corresponding ratio value of 0.27 in the low accountability pressure schools. In terms of average percentage share of staff members, low accountability pressure schools employed only 0.25% of teachers in this category, compared with 1.10% in the high accountability pressure schools.

Family and Consumer Science is another job category that comprises a very small proportion of teachers statewide; only 0.98%. In very high accountability schools, the percentage share is about half of this number, at 0.50%. Therefore, although a much lower percentage share of teachers are assigned to this area, it appears as though the greater number of teachers overall in these high accountability schools compensates for much of the disparity when we look at the number of teachers per one thousand pupils.

Although slightly lower in the very high accountability schools group, the impact is most likely not as severe as illustrated by the comparison of percentage share of staff alone.

<u>Recommendations for Future Research</u>

This study has prompted many ideas for future research. One of the most obvious next steps would be to complete a similar study, also in the state of New Jersey, but of teachers in the high school level setting. It would also be interesting to study the distribution of specialty area teachers, such as those in the categories of Art, Music, and World Language, amongst the elementary schools that fall into the context groups examined in this study. Another logical step would be to complete either this same study or either of the two grade level options mentioned above in a state other than New Jersey. One could also create a compilation of similar data from multiple states which could result in a state-to-state comparison of teaching staff resource allocation.

Another interesting investigation would be to randomly select approximately ten to fifteen schools that had experienced low accountability pressure and ten to fifteen schools that reached the highest level of accountability sanctions over the duration of time from 1999-2010. It would likely yield useful data if these particular schools were grouped into two data sets and compared on the same variables utilized in this study on a year-to-year basis from the early years of the implementation of the No Child Left Behind Act through school year 2010-2011. Any patterns in teacher staffing assignments and teachers per one thousand pupil ratios between these two extreme groups could be compared and contrasted.

A study on the distribution of staffing resources within the thirty-one Abbott Districts in New Jersey would most likely reveal additional data of interest. Perhaps conducting a study similar to the current study, but evaluating the data set with Abbott district schools both included and excluded would reveal interesting data outcomes. It would be interesting to investigate if the distribution of teachers in the DFG A and DFG B Abbott schools is significantly different from the distribution of teachers in the non-Abbott DFG A and DFG B schools. An educated guess would also be that many of the schools in the higher accountability pressure groups of schools are also within Abbott districts. Therefore, studying the data set of high accountability pressure Abbot schools versus the data set of high accountability non-Abbott schools would be fascinating. Would noticeable differences exist in staffing patterns between schools in similar socioeconomic status communities, but with vastly different available funding resources?

A qualitative investigation may also yield useful additional information. This type of study could examine the perceptions of teachers and school administrators in schools that were facing high accountability pressure. Their experiences, insights, and perceptions could be compared with similar data gathered from staff members in similar positions in schools that faced very low accountability pressure during the existence of No Child Left Behind. Care could be taken to select schools that were in a similar socioeconomic situation, similar in size, and similar in setting (urban, suburban, rural) in an attempt to control for as many variables as possible.

An additional interesting possibility for a study would be an investigation into the sixteen schools that made it into the highest accountability pressure group by school year 2010-2011. A researcher could determine the initial, yearly, and final ratios of teachers per one thousand pupils in the sixteen schools that made it to the highest level of accountability pressure in each of the sixteen job categories that were studied here. This data could then be compared to the statewide averages contained in this report and conclusions could be drawn about change over more than a decade of time in those schools that were most significantly impacted by the penalties of No Child Left Behind. It would also be interesting to investigate the socioeconomic status of these sixteen schools, as well as the average cost per pupil in these districts when compared with statewide averages.

Although No Child Left Behind is exiting the educational scene, we can be certain that future accountability systems will roll in to take its place; it is always valuable to study systems that have been implemented to glean information about the intended and unintended consequences of those systems, as well as the successful and unsuccessful portions of any wide-reaching and long-lasting piece of legislature.

APPENDIX A

Data Output Tables

LIST OF TABLES

Table 1. Job Codes and Job Categories 1999-2006

School Year	Administration & Supervision	Elementary Generalist	Art	Business Education	English/LAL	World Language	Health & Physical Education	Family& Consumer Science	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Vocational Education	Support Services
1999-2000	0102-0599	1000-1010	1200-1285	1301-1388	1400-1486	1500-1599	1607-1645	1700-1760	1805-1897	1900-1962	2100-2130	2201-2236	2301-2391	2401-2482	2501-2691	2701-4001
2000-2001	0102-0599	1000-1013	1200-1285	1301-1388	1400-1486	1500-1599	1607-1645	1700-1760	1805-1897	1900-1962	2100-2130	2201-2236	2301-2391	2401-2482	2501-2691	2701-4001
2001-2002	0102-0599	1000-1013	1200-1285	1301-1388	1400-1486	1500-1599	1607-1645	1700-1760	1805-1897	1900-1962	2100-2130	2201-2236	2301-2391	2401-2482	2501-2692	2701-4001
2002-2003	0102-0599	1000-1013	1200-1285	1301-1388	1400-1486	1500-1599	1607-1645	1700-1760	1805-1897	1900-1962	2100-2130	2201-2236	2301-2391	2401-2483	2501-2692	2701-4001
2003-2004	0102-0599	1000-1013	1200-1285	1301-1388	1400-1486	1500-1599	1607-1645	1700-1760	1805-1897	1900-1962	2100-2130	2201-2236	2301-2391	2401-2483	2501-2692	2701-4001
2004-2005	0102-0599	1000-1020	1200-1285	1301-1388	1106; 1400-1486	1105; 1110-1191; 1500-1599	1607-1645	1700-1760	1805-1897	1102; 1900-1962	2100-2130	1103; 2201-2236	1104; 2301-2391	2401-2483	2501-2694	2701-4001
2005-2006	0102-0599	1000-1020	1200-1285	1301-1388	1106; 1400-1486	1105; 1110-1191; 1500-1599	1607-1645	1700-1760	1805-1897	1102; 1900-1962	2100-2130	1103; 2201-2236	1104; 2301-2391	2401-2483	2501-2694; 4106-4179	2701-4001

Table 2. Job Codes and Job Categories 2006-2007

School Year	Administration & Supervision	Elementary Generalist	Art	Business Education	English/LAL	World Language	Health & Physical Education	Family& Consumer Science	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Vocational Education	Support Services
2006-2007	0102-0599	1000-1007; 5000-5006; 5200-5206; 6000-6006; 6200-6206; 7000-7006; 7200-7206	1200-1287; 5026-5031; 5226-5229; 6026-6031; 6226-6229; 7026-7031; 7226-7229	1301-1388; 5032-5041; 5230-5243; 6032-6035; 6230-6243; 7032-7041; 7230-7243	1106 1400-1486; 5011 5042-5053; 5211; 5244-5255; 5337; 6011; 6042-6053; 6135; 6211; 6244-6249 6250-6255; 6336; 7011; 7042-7053; 7135; 7211; 7244; 7255; 7336	1105; **1110-1191;** **1500-1599;** **5010;** **5012-5025;** **5054-5067;** **5210;** 5212-5225; 5256-5269; 6010; 6012-6014; 6054-6067; 6210; 6212-6225; 6256-6269; 7010; 7012-7025; 7054-7067; 7210; 7212-7225; 7256-7269	1607-1645; 5068-5074; 5270-5276; 6068-6074; 6270-6274; 6275-6276; 7068-7073; 7270-7276	1700-1760; 5075-5078; 5277-5280; 6075-6078; 6277-6280; 7074-7078; 7277-7280	1805-1897; 5079-5111; 5281-5313; 6079-6111; 6281-6313; 7079-7111; 7281-7313	1102; 1900-1962; 5007; 5112-5116; 5207; 5314-5318; 6007; 6112-6116; 6207; 6314-6318; 7007; 7112-7116; 7207; 7314-7318	2100-2130; 5117-5119; 5319-5321; 6117-6119; 6319-6321; 7117-7119; 7319-7321;	1103; 2201-2236; 5008; 5120-5127; 5208; 5322-5329; 6008; 6120-6127; 6208; 6322-6329; 7008; 7120-7127; 7208; 7322-7329	1104; 2301-2391; 5009; 5128-5134; 5209; 5330-5335; 6009; 6128-6134; 6209; 6330-6336; 7009; 7128-7134; 7209; 7330-7335	2400-2401; 5500; 6500; 7400	2501-2694; 4106-4189	2701-4001

Table 3. Job Codes and Job Categories 2007-2008

School Year	Administration & Supervision	Elementary Generalist	Art	Business Education	English/LAL	World Language	Health & Physical Education	Family& Consumer Science	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Vocational Education	Support Services
2007-2008	0102-0599	1000-1007; 5000-5003; 5500-5503; 6000-6003; 6500-6503; 7000-7003; 7500-7503	1200-1286; 5050-5057; 5550-5557; 6050-6057; 6550-6557; 7050-7057; 7550-7557	1301-1388; 5058-5067; 5558-5567; 6058-6067; 6558-6567; 7058-7067; 7558-7567	1106 1400-1486; 1500; 5014; 5075-5087; 5300; 5514; 5575-5587; 5800-5910; 6014; 6075-6087; 6300; 6514; 6570-6586; 6900-6910; 7014; 7074-7101; 7300; 7514; 7575-7601; 7900-7910	1105; 1110-1191; 1505-1599; 5015; 5016-5040; 5103-5150; 5515-5540; 5600-5650; 6015-6040; 6100-6150; 6515-6540; 6600-6617; 7015-7040; 7102-7117; 7515-7540; 7602-7617;	1607-1645; 5160-5167; 5660-5667; 6160-6167; 6650-6666; 7150-7165; 7660-7667;	1700-1760; 5170-5173; 5670-5673; 6170-6173; 6667-6672; 7166-7172; 7670-7673	1805-1897; 5174-5206; 5674-5706; 6174-6206; 6673-6705; 7173-7205; 7674-7706	1102; 1900-1962; 5010; 5207-5211; 5510; 5707-5711; 6010; 6207-6211; 6510; 6706-6710; 7010; 7206-7210; 7510; 7707-7711	2100-2130; 5212-5214; 5715-5717; 6215-6217; 6711-6713; 7211-7213; 7712-7714;	1103; 2201-2236; 5011; 5220-5228; 5511; 5720-5728; 6011; 6220-6228; 6511; 6720-6728; 7011; 7220-7228; 7511; 7720-7728	1104; 2301-2391; 5012; 5230-5235; 5512; 5730-5735; 6012; 6230-6235; 6512; 6730-6835; 7012; 7230-7235; 7512; 7730-7835	2400-2401;	2501-2723	3100-4001

Table 4. Job Codes and Job Categories 2008-2011

School Year	Administration & Supervision	Elementary Generalist	Art	Business Education	English/LAL	World Language	Health & Physical Education	Family& Consumer Science	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Vocational Education	Support Services
2008-2009	0102-0599; 2410-2412	1000-1018;	1200-1286;	1301-1388;	1106 1401-1486; 1500	1105; 1110-1191; 1505-1599;	1607-1645;	1700-1760;	1805-1897;	1102; 1901-1962;	2100-2130;	1103; 2202-2236;	1104; 2302-2391;	2400-2406;	2501-2722	3100-4001
2009-2010	0102-0599; 2410-2412	1000-1018;	1200-1286;	1301-1388;	1106 1401-1486; 1500	1105; 1110-1191; 1505-1599;	1607-1645;	1700-1760;	1805-1897;	1102; 1901-1962;	2100-2130;	1103; 2202-2236;	1104; 2302-2391;	2400-2406;	2501-2722	3100-4001
2010-2011	0102-0599; 2410-2412	1000-1018;	1200-1286;	1301-1388;	1106 1401-1486; 1500	1105; 1110-1191; 1505-1599;	1607-1645;	1700-1760;	1805-1897;	1102; 1901-1962; 2001	2100-2130;	1103; 2202-2236;	1104; 2302-2391;	2400-2406;	2501-2722	3100-4001

Table 5. Total Teaching Staff Distribution by Job Category in New Jersey Middle Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2000	607	358	54	3,379	2,041	249	1,073	297	1,440	548	966	979	2,501	1,458	10	454	16,414
2001	625	367	53	3,526	2,110	230	1,113	290	1,486	581	999	1,002	2,668	1,499	9	563	17,121
2002	627	395	64	3,809	2,108	222	1,139	275	1,491	611	1,009	1,032	2,866	1,565	12	666	17,891
2003	654	385	61	3,880	2,090	216	1,174	263	1,474	627	1,006	1,038	2,994	1,596	13	701	18,172
2004	630	389	63	3,848	2,163	200	1,169	255	1,526	624	1,016	1,058	3,130	1,616	14	743	18,444
2005	658	402	70	3,233	1,476	183	1,183	245	1,709	616	1,127	1,193	3,200	1,656	13	783	17,747
2006	659	403	69	3,066	1,670	174	1,208	238	1,782	636	1,193	1,254	3,295	1,685	15	801	18,148
2007	662	404	62	3,430	3,056	160	1,204	228	2,437	641	1,440	1,459	974	1,764	17	814	18,752
2008	684	404	53	2,956	4,189	141	1,213	200	2,595	641	1,468	1,512	277	1,794	20	791	18,938
2009	668	409	59	2,862	2,942	140	1,228	181	2,430	649	1,410	1,422	2,105	1,816	22	816	19,159
2010	679	410	52	2,648	2,936	129	1,208	178	2,416	641	1,403	1,433	2,232	1,780	17	832	18,994
2011	647	381	55	2,474	2,798	101	1,135	158	2,299	593	1,382	1,385	2,252	1,690	19	800	18,169
Total	7,800	4,707	715	39,111	29,579	2,145	14,047	2,808	23,085	7,408	14,419	14,767	28,494	19,919	181	8,764	217,949

Table 6. Total Teaching Staff Distribution by Percentage in New Jersey Middle Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language
2000	3.70%	2.18%	0.33%	20.59%	12.43%	1.52%	6.54%	1.81%	8.77%	3.34%	5.89%	5.96%	15.24%	8.88%	0.06%	2.77%
2001	3.65%	2.14%	0.31%	20.59%	12.32%	1.34%	6.50%	1.69%	8.68%	3.39%	5.83%	5.85%	15.58%	8.76%	0.05%	3.29%
2002	3.50%	2.21%	0.36%	21.29%	11.78%	1.24%	6.37%	1.54%	8.33%	3.42%	5.64%	5.77%	16.02%	8.75%	0.07%	3.72%
2003	3.60%	2.12%	0.34%	21.35%	11.50%	1.19%	6.46%	1.45%	8.11%	3.45%	5.54%	5.71%	16.48%	8.78%	0.07%	3.86%
2004	3.42%	2.11%	0.34%	20.86%	11.73%	1.08%	6.34%	1.38%	8.27%	3.38%	5.51%	5.74%	16.97%	8.76%	0.08%	4.03%
2005	3.71%	2.27%	0.39%	18.22%	8.32%	1.03%	6.67%	1.38%	9.63%	3.47%	6.35%	6.72%	18.03%	9.33%	0.07%	4.41%
2006	3.63%	2.22%	0.38%	16.89%	9.20%	0.96%	6.66%	1.31%	9.82%	3.50%	6.57%	6.91%	18.16%	9.28%	0.08%	4.41%
2007	3.53%	2.15%	0.33%	18.29%	16.30%	0.85%	6.42%	1.22%	13.00%	3.42%	7.68%	7.78%	5.19%	9.41%	0.09%	4.34%
2008	3.61%	2.13%	0.28%	15.61%	22.12%	0.74%	6.41%	1.06%	13.70%	3.38%	7.75%	7.98%	1.46%	9.47%	0.11%	4.18%
2009	3.49%	2.13%	0.31%	14.94%	15.36%	0.73%	6.41%	0.94%	12.68%	3.39%	7.36%	7.42%	10.99%	9.48%	0.11%	4.26%
2010	3.57%	2.16%	0.27%	13.94%	15.46%	0.68%	6.36%	0.94%	12.72%	3.37%	7.39%	7.54%	11.75%	9.37%	0.09%	4.38%
2011	3.56%	2.10%	0.30%	13.62%	15.40%	0.56%	6.25%	0.87%	12.65%	3.26%	7.61%	7.62%	12.39%	9.30%	0.10%	4.40%
Average	3.58%	2.16%	0.33%	17.95%	13.57%	0.98%	6.45%	1.29%	10.59%	3.40%	6.62%	6.78%	13.07%	9.14%	0.08%	4.02%

Table 7. Total Distribution of New Jersey Middle School Teachers Per One Thousand Pupils 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2000	3.18	1.88	0.28	17.72	10.70	1.31	5.63	1.56	7.55	2.87	5.06	5.13	13.11	7.64	0.05	2.38	86.05
2001	3.15	1.85	0.27	17.80	10.65	1.16	5.62	1.46	7.50	2.93	5.04	5.06	13.47	7.57	0.05	2.84	86.42
2002	3.07	1.94	0.31	18.67	10.33	1.09	5.58	1.35	7.31	3.00	4.95	5.06	14.05	7.67	0.06	3.26	87.70
2003	3.18	1.87	0.30	18.84	10.15	1.05	5.70	1.28	7.16	3.04	4.88	5.04	14.54	7.75	0.06	3.40	88.22
2004	3.05	1.88	0.31	18.65	10.48	0.97	5.66	1.24	7.39	3.02	4.92	5.13	15.17	7.83	0.07	3.60	89.37
2005	3.22	1.97	0.34	15.82	7.22	0.90	5.79	1.20	8.37	3.02	5.52	5.84	15.66	8.11	0.06	3.83	86.87
2006	3.28	2.00	0.34	15.24	8.30	0.87	6.01	1.18	8.86	3.16	5.93	6.23	16.38	8.38	0.07	3.98	90.22
2007	3.37	2.06	0.32	17.46	15.55	0.81	6.13	1.16	12.40	3.26	7.33	7.43	4.96	8.98	0.09	4.14	95.43
2008	3.51	2.07	0.27	15.15	21.47	0.72	6.22	1.03	13.30	3.29	7.52	7.75	1.42	9.20	0.10	4.05	97.07
2009	3.44	2.11	0.30	14.75	15.16	0.72	6.33	0.93	12.52	3.34	7.27	7.33	10.85	9.36	0.11	4.20	98.73
2010	3.52	2.12	0.27	13.72	15.22	0.67	6.26	0.92	12.52	3.32	7.27	7.43	11.57	9.22	0.09	4.31	98.43
2011	3.39	2.00	0.29	12.96	14.66	0.53	5.95	0.83	12.05	3.11	7.24	7.26	11.80	8.86	0.10	4.19	95.21
Average	3.28	1.98	0.30	16.43	12.43	0.90	5.90	1.18	9.70	3.11	6.06	6.20	11.97	8.37	0.08	3.68	91.57

Table 8. Total Enrollment by Year for New Jersey Middle Schools 2000-2011

School Year	Enrollment
2000	190,739
2001	198,104
2002	203,998
2003	205,981
2004	206,372
2005	204,301
2006	201,155
2007	196,496
2008	195,097
2009	194,062
2010	192,966
2011	190,838
Total	2,380,112

Table 9. Distribution of Staff Members by Job Category by DFG, 2000-2011

	A	B	C	CD	D	DE	F	FG	G	GH	I	J	Total
Administration and Supervision	780	672	62	625	89	1,021	94	1,020	114	1,232	1,735	335	7,800
Art	331	357	28	280	56	657	56	612	74	793	1,191	254	4,707
Business	97	16	6	73	5	115	14	136	13	124	102	13	715
Elementary Generalist	4,476	4,201	141	2,641	369	5,760	360	4,770	655	6,602	7,559	1,556	39,111
English LAL	2,308	2,407	271	2,251	400	3,943	468	4,394	536	5,104	6,386	1,025	29,579
Family & Consumer Science	172	128	4	81	27	393	26	359	25	354	504	67	2,145
Health & Physical Ed	1,022	1,111	94	963	191	2,103	183	1,880	224	2,422	3,287	525	14,047
Industrial Arts	217	155	11	126	23	465	38	498	30	461	676	104	2,808
Math	1,773	1,895	227	1,773	415	3,321	365	3,072	402	3,806	5,071	870	23,085
Music	402	535	47	483	90	966	85	943	119	1,318	2,033	376	7,408
Science	824	1,063	119	1,012	201	1,792	198	1,998	267	2,634	3,586	689	14,419
Social Studies	854	1,062	119	992	216	2,016	212	2,040	262	2,588	3,724	645	14,767
Special Ed	2,123	2,622	173	2,282	337	4,427	330	4,017	303	4,648	6,143	1,016	28,494
Support Services	2,119	1,620	130	1,360	250	2,690	241	2,484	320	3,276	4,562	832	19,919
Vocational Ed	36	18	3	19	3	34	2	14	2	9	14	27	181
World Language	283	383	41	381	78	770	116	1,140	169	1,631	3,089	670	8,764
Total	17,817	18,245	1,476	15,342	2,750	30,473	2,788	29,377	3,515	37,002	49,662	9,004	217,949

Table 10. Percentage of Staff Members by Job Category by DFG, 2000-2011

	A	B	C	CD	D	DE	F	FG	G	GH	I	J	Total
Administration and Supervision	4.38%	3.68%	4.20%	4.07%	3.24%	3.35%	3.37%	3.47%	3.24%	3.33%	3.49%	3.72%	3.58%
Art	1.86%	1.96%	1.90%	1.83%	2.04%	2.16%	2.01%	2.08%	2.11%	2.14%	2.40%	2.82%	2.16%
Business	0.54%	0.09%	0.41%	0.48%	0.18%	0.38%	0.50%	0.46%	0.37%	0.34%	0.21%	0.14%	0.33%
Elementary Generalist	25.12%	23.03%	9.55%	17.21%	13.42%	18.90%	12.91%	16.24%	18.63%	17.84%	15.22%	17.28%	17.95%
English LAL	12.95%	13.19%	18.36%	14.67%	14.55%	12.94%	16.79%	14.96%	15.25%	13.79%	12.86%	11.38%	13.57%
Family & Consumer Science	0.97%	0.70%	0.27%	0.53%	0.98%	1.29%	0.93%	1.22%	0.71%	0.96%	1.01%	0.74%	0.98%
Health & Physical Ed	5.74%	6.09%	6.37%	6.28%	6.95%	6.90%	6.56%	6.40%	6.37%	6.55%	6.62%	5.83%	6.45%
Industrial Arts	1.22%	0.85%	0.75%	0.82%	0.84%	1.53%	1.36%	1.70%	0.85%	1.25%	1.36%	1.16%	1.29%
Math	9.95%	10.39%	15.38%	11.56%	15.09%	10.90%	13.09%	10.46%	11.44%	10.29%	10.21%	9.66%	10.59%
Music	2.26%	2.93%	3.18%	3.15%	3.27%	3.17%	3.05%	3.21%	3.39%	3.56%	4.09%	4.18%	3.40%
Science	4.62%	5.83%	8.06%	6.60%	7.31%	5.88%	7.10%	6.80%	7.60%	7.12%	7.22%	7.65%	6.62%
Social Studies	4.79%	5.82%	8.06%	6.47%	7.85%	6.62%	7.60%	6.94%	7.45%	6.99%	7.50%	7.16%	6.78%
Special Ed	11.92%	14.37%	11.72%	14.87%	12.25%	14.53%	11.84%	13.67%	8.62%	12.56%	12.37%	11.28%	13.07%
Support Services	11.89%	8.88%	8.81%	8.86%	9.09%	8.83%	8.64%	8.46%	9.10%	8.85%	9.19%	9.24%	9.14%
Vocational Ed	0.20%	0.10%	0.20%	0.12%	0.11%	0.11%	0.07%	0.05%	0.06%	0.02%	0.03%	0.30%	0.08%
World Language	1.59%	2.10%	2.78%	2.48%	2.84%	2.53%	4.16%	3.88%	4.81%	4.41%	6.22%	7.44%	4.02%

Table 11. Teacher Distribution by Job Category in DFG A Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2000	56	23	10	337	139	20	74	25	85	28	43	46	178	119	2	15	1,200
2001	51	22	6	354	137	17	75	24	83	31	45	47	202	141	6	15	1,256
2002	55	24	8	368	136	17	73	23	85	30	42	50	221	143	5	15	1,295
2003	67	23	7	405	131	17	74	20	85	29	40	48	224	143	5	18	1,336
2004	56	23	7	411	143	18	74	18	84	31	39	48	227	146	5	21	1,351
2005	71	31	7	433	136	21	95	18	122	38	68	72	299	194	2	22	1,629
2006	70	32	7	405	152	19	97	19	139	39	76	79	308	193	2	25	1,662
2007	70	32	7	428	261	17	92	17	210	36	93	101	36	214	1	43	1,658
2008	81	32	5	364	344	10	94	15	241	38	106	101	3	219	1	29	1,683
2009	69	30	10	338	251	8	97	14	229	36	92	92	147	213	2	26	1,654
2010	65	31	10	311	259	5	93	12	217	35	91	88	139	204	2	30	1,592
2011	69	28	13	322	219	3	84	12	193	31	89	82	139	190	3	24	1,501
Total	780	331	97	4,476	2,308	172	1,022	217	1,773	402	824	854	2,123	2,119	36	283	17,817

Table 12. Percentage of Teaching Staff by Job Category in DFG A Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language
2000	4.67%	1.92%	0.83%	28.08%	11.58%	1.67%	6.17%	2.08%	7.08%	2.33%	3.58%	3.83%	14.83%	9.92%	0.17%	1.25%
2001	4.06%	1.75%	0.48%	28.18%	10.91%	1.35%	5.97%	1.91%	6.61%	2.47%	3.58%	3.74%	16.08%	11.23%	0.48%	1.19%
2002	4.25%	1.85%	0.62%	28.42%	10.50%	1.31%	5.64%	1.78%	6.56%	2.32%	3.24%	3.86%	17.07%	11.04%	0.39%	1.16%
2003	5.01%	1.72%	0.52%	30.31%	9.81%	1.27%	5.54%	1.50%	6.36%	2.17%	2.99%	3.59%	16.77%	10.70%	0.37%	1.35%
2004	4.15%	1.70%	0.52%	30.42%	10.58%	1.33%	5.48%	1.33%	6.22%	2.29%	2.89%	3.55%	16.80%	10.81%	0.37%	1.55%
2005	4.36%	1.90%	0.43%	26.58%	8.35%	1.29%	5.83%	1.10%	7.49%	2.33%	4.17%	4.42%	18.35%	11.91%	0.12%	1.35%
2006	4.21%	1.93%	0.42%	24.37%	9.15%	1.14%	5.84%	1.14%	8.36%	2.35%	4.57%	4.75%	18.53%	11.61%	0.12%	1.50%
2007	4.22%	1.93%	0.42%	25.81%	15.74%	1.03%	5.55%	1.03%	12.67%	2.17%	5.61%	6.09%	2.17%	12.91%	0.06%	2.59%
2008	4.81%	1.90%	0.30%	21.63%	20.44%	0.59%	5.59%	0.89%	14.32%	2.26%	6.30%	6.00%	0.18%	13.01%	0.06%	1.72%
2009	4.17%	1.81%	0.60%	20.44%	15.18%	0.48%	5.86%	0.85%	13.85%	2.18%	5.56%	5.56%	8.89%	12.88%	0.12%	1.57%
2010	4.08%	1.95%	0.63%	19.54%	16.27%	0.31%	5.84%	0.75%	13.63%	2.20%	5.72%	5.53%	8.73%	12.81%	0.13%	1.88%
2011	4.60%	1.87%	0.87%	21.45%	14.59%	0.20%	5.60%	0.80%	12.86%	2.07%	5.93%	5.46%	9.26%	12.66%	0.20%	1.60%
Average	4.38%	1.86%	0.54%	25.12%	12.95%	0.97%	5.74%	1.22%	9.95%	2.26%	4.62%	4.79%	11.92%	11.89%	0.20%	1.59%

Table 13. Teachers Per One Thousand Pupils by Job Category in DFG A Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2000	4.37	1.79	0.78	26.29	10.84	1.56	5.77	1.95	6.63	2.18	3.35	3.59	13.88	9.28	0.16	1.17	93.60
2001	3.87	1.67	0.46	26.85	10.39	1.29	5.69	1.82	6.29	2.35	3.41	3.56	15.32	10.69	0.46	1.14	95.26
2002	3.85	1.68	0.56	25.75	9.52	1.19	5.11	1.61	5.95	2.10	2.94	3.50	15.47	10.01	0.35	1.05	90.63
2003	4.43	1.52	0.46	26.78	8.66	1.12	4.89	1.32	5.62	1.92	2.65	3.17	14.81	9.46	0.33	1.19	88.35
2004	3.84	1.58	0.48	28.16	9.80	1.23	5.07	1.23	5.76	2.12	2.67	3.29	15.55	10.00	0.34	1.44	92.56
2005	4.21	1.84	0.42	25.69	8.07	1.25	5.64	1.07	7.24	2.25	4.03	4.27	17.74	11.51	0.12	1.31	96.66
2006	4.42	2.02	0.44	25.60	9.61	1.20	6.13	1.20	8.79	2.47	4.80	4.99	19.47	12.20	0.13	1.58	105.05
2007	4.72	2.16	0.47	28.84	17.59	1.15	6.20	1.15	14.15	2.43	6.27	6.81	2.43	14.42	0.07	2.90	111.74
2008	5.57	2.20	0.34	25.02	23.64	0.69	6.46	1.03	16.56	2.61	7.28	6.94	0.21	15.05	0.07	1.99	115.66
2009	4.94	2.15	0.72	24.18	17.95	0.57	6.94	1.00	16.38	2.57	6.58	6.58	10.51	15.23	0.14	1.86	118.30
2010	4.72	2.25	0.73	22.57	18.80	0.36	6.75	0.87	15.75	2.54	6.60	6.39	10.09	14.81	0.15	2.18	115.55
2011	5.08	2.06	0.96	23.72	16.13	0.22	6.19	0.88	14.22	2.28	6.56	6.04	10.24	14.00	0.22	1.77	110.59
Average	4.50	1.91	0.56	25.81	13.31	0.99	5.89	1.25	10.22	2.32	4.75	4.92	12.24	12.22	0.21	1.63	102.75

Table 14. Teacher Distribution by Job Category in DFG B Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2000	57	33	1	405	168	22	94	19	117	42	75	77	263	128	0	22	1,523
2001	57	33	1	428	170	17	100	20	119	47	74	74	273	141	0	24	1,578
2002	57	33	1	447	184	16	101	15	125	48	78	80	288	142	1	26	1,642
2003	61	34	1	443	187	15	107	17	125	49	83	80	312	146	1	31	1,692
2004	56	34	1	415	189	13	105	14	143	50	80	79	321	153	0	32	1,685
2005	53	28	2	296	128	8	87	14	136	40	82	79	285	129	1	32	1,400
2006	54	28	2	304	151	8	96	17	130	43	81	85	304	130	1	37	1,471
2007	56	26	3	367	232	7	89	9	207	42	107	104	49	134	2	33	1,467
2008	54	29	1	319	323	6	91	6	236	45	112	116	2	135	4	36	1,515
2009	56	28	1	278	232	5	90	6	190	44	104	96	168	134	4	38	1,474
2010	58	27	1	250	226	6	78	9	188	45	98	101	178	127	2	39	1,433
2011	53	24	1	249	217	5	73	9	179	40	89	91	179	121	2	33	1,365
Total	672	357	16	4,201	2,407	128	1,111	155	1,895	535	1,063	1,062	2,622	1,620	18	383	18,245

Table 15. Percentage of Teaching Staff by Job Category in DFG B Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language
2000	3.74%	2.17%	0.07%	26.59%	11.03%	1.44%	6.17%	1.25%	7.68%	2.76%	4.92%	5.06%	17.27%	8.40%	0.00%	1.44%
2001	3.61%	2.09%	0.06%	27.12%	10.77%	1.08%	6.34%	1.27%	7.54%	2.98%	4.69%	4.69%	17.30%	8.94%	0.00%	1.52%
2002	3.47%	2.01%	0.06%	27.22%	11.21%	0.97%	6.15%	0.91%	7.61%	2.92%	4.75%	4.87%	17.54%	8.65%	0.06%	1.58%
2003	3.61%	2.01%	0.06%	26.18%	11.05%	0.89%	6.32%	1.00%	7.39%	2.90%	4.91%	4.73%	18.44%	8.63%	0.06%	1.83%
2004	3.32%	2.02%	0.06%	24.63%	11.22%	0.77%	6.23%	0.83%	8.49%	2.97%	4.75%	4.69%	19.05%	9.08%	0.00%	1.90%
2005	3.79%	2.00%	0.14%	21.14%	9.14%	0.57%	6.21%	1.00%	9.71%	2.86%	5.86%	5.64%	20.36%	9.21%	0.07%	2.29%
2006	3.67%	1.90%	0.14%	20.67%	10.27%	0.54%	6.53%	1.16%	8.84%	2.92%	5.51%	5.78%	20.67%	8.84%	0.07%	2.52%
2007	3.82%	1.77%	0.20%	25.02%	15.81%	0.48%	6.07%	0.61%	14.11%	2.86%	7.29%	7.09%	3.34%	9.13%	0.14%	2.25%
2008	3.56%	1.91%	0.07%	21.06%	21.32%	0.40%	6.01%	0.40%	15.58%	2.97%	7.39%	7.66%	0.13%	8.91%	0.26%	2.38%
2009	3.80%	1.90%	0.07%	18.86%	15.74%	0.34%	6.11%	0.41%	12.89%	2.99%	7.06%	6.51%	11.40%	9.09%	0.27%	2.58%
2010	4.05%	1.88%	0.07%	17.45%	15.77%	0.42%	5.44%	0.63%	13.12%	3.14%	6.84%	7.05%	12.42%	8.86%	0.14%	2.72%
2011	3.88%	1.76%	0.07%	18.24%	15.90%	0.37%	5.35%	0.66%	13.11%	2.93%	6.52%	6.67%	13.11%	8.86%	0.15%	2.42%
Average	3.68%	1.96%	0.09%	23.03%	13.19%	0.70%	6.09%	0.85%	10.39%	2.93%	5.83%	5.82%	14.37%	8.88%	0.10%	2.10%

Table 16. Teachers per One Thousand Pupils by Job Category in DFG B Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2000	3.31	1.92	0.06	23.53	9.76	1.28	5.46	1.10	6.80	2.44	4.36	4.47	15.28	7.44	0.00	1.28	88.47
2001	3.25	1.88	0.06	24.41	9.70	0.97	5.70	1.14	6.79	2.68	4.22	4.22	15.57	8.04	0.00	1.37	90.00
2002	3.20	1.85	0.06	25.11	10.34	0.90	5.67	0.84	7.02	2.70	4.38	4.49	16.18	7.98	0.06	1.46	92.25
2003	3.33	1.86	0.05	24.18	10.20	0.82	5.84	0.93	6.82	2.67	4.53	4.37	17.03	7.97	0.05	1.69	92.34
2004	3.05	1.85	0.05	22.61	10.30	0.71	5.72	0.76	7.79	2.72	4.36	4.30	17.49	8.34	0.00	1.74	91.80
2005	3.41	1.80	0.13	19.03	8.23	0.51	5.59	0.90	8.74	2.57	5.27	5.08	18.32	8.29	0.06	2.06	89.99
2006	3.53	1.83	0.13	19.89	9.88	0.52	6.28	1.11	8.50	2.81	5.30	5.56	19.89	8.50	0.07	2.42	96.22
2007	3.79	1.76	0.20	24.81	15.68	0.47	6.02	0.61	13.99	2.84	7.23	7.03	3.31	9.06	0.14	2.23	99.17
2008	3.67	1.97	0.07	21.69	21.96	0.41	6.19	0.41	16.05	3.06	7.61	7.89	0.14	9.18	0.27	2.45	103.01
2009	3.86	1.93	0.07	19.17	16.00	0.34	6.21	0.41	13.10	3.03	7.17	6.62	11.59	9.24	0.28	2.62	101.66
2010	4.15	1.93	0.07	17.89	16.17	0.43	5.58	0.64	13.45	3.22	7.01	7.23	12.74	9.09	0.14	2.79	102.54
2011	3.79	1.72	0.07	17.80	15.51	0.36	5.22	0.64	12.80	2.86	6.36	6.51	12.80	8.65	0.14	2.36	97.59
Average	3.50	1.86	0.08	21.88	12.53	0.67	5.79	0.81	9.87	2.79	5.54	5.53	13.65	8.44	0.09	1.99	95.01

Table 17. Teacher Distribution by Job Category in DFG I Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2000	142	96	10	699	457	50	260	62	372	151	262	263	502	350	1	190	3,867
2001	157	100	9	696	491	47	270	62	394	165	281	280	529	349	1	234	4,065
2002	154	106	10	755	482	48	278	58	392	176	286	283	593	373	2	268	4,264
2003	160	102	9	749	477	45	289	54	384	181	293	285	608	377	3	283	4,299
2004	149	99	10	766	498	41	285	60	394	177	281	297	655	375	2	295	4,384
2005	131	91	10	621	275	43	258	61	380	154	271	297	626	362	1	252	3,833
2006	137	95	10	638	308	45	272	59	387	174	281	306	657	378	1	268	4,016
2007	144	103	8	665	627	39	275	62	477	172	326	347	248	387	0	257	4,137
2008	143	100	9	548	910	37	275	55	492	170	328	348	77	391	0	252	4,135
2009	143	103	8	505	633	37	276	48	481	180	329	341	528	417	1	264	4,294
2010	144	101	5	485	624	37	280	50	466	174	322	338	563	406	1	270	4,266
2011	131	95	4	432	604	35	269	45	452	159	326	339	557	397	1	256	4,102
Total	1,735	1,191	102	7,559	6,386	504	3,287	676	5,071	2,033	3,586	3,724	6,143	4,562	14	3,089	49,662

Table 18. Percentage of Teaching Staff by Job Category in DFG I Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language
2000	3.67%	2.48%	0.26%	18.08%	11.82%	1.29%	6.72%	1.60%	9.62%	3.90%	6.78%	6.80%	12.98%	9.05%	0.03%	4.91%
2001	3.86%	2.46%	0.22%	17.12%	12.08%	1.16%	6.64%	1.53%	9.69%	4.06%	6.91%	6.89%	13.01%	8.59%	0.02%	5.76%
2002	3.61%	2.49%	0.23%	17.71%	11.30%	1.13%	6.52%	1.36%	9.19%	4.13%	6.71%	6.64%	13.91%	8.75%	0.05%	6.29%
2003	3.72%	2.37%	0.21%	17.42%	11.10%	1.05%	6.72%	1.26%	8.93%	4.21%	6.82%	6.63%	14.14%	8.77%	0.07%	6.58%
2004	3.40%	2.26%	0.23%	17.47%	11.36%	0.94%	6.50%	1.37%	8.99%	4.04%	6.41%	6.77%	14.94%	8.55%	0.05%	6.73%
2005	3.42%	2.37%	0.26%	16.20%	7.17%	1.12%	6.73%	1.59%	9.91%	4.02%	7.07%	7.75%	16.33%	9.44%	0.03%	6.57%
2006	3.41%	2.37%	0.25%	15.89%	7.67%	1.12%	6.77%	1.47%	9.64%	4.33%	7.00%	7.62%	16.36%	9.41%	0.02%	6.67%
2007	3.48%	2.49%	0.19%	16.07%	15.16%	0.94%	6.65%	1.50%	11.53%	4.16%	7.88%	8.39%	5.99%	9.35%	0.00%	6.21%
2008	3.46%	2.42%	0.22%	13.25%	22.01%	0.89%	6.65%	1.33%	11.90%	4.11%	7.93%	8.42%	1.86%	9.46%	0.00%	6.09%
2009	3.33%	2.40%	0.19%	11.76%	14.74%	0.86%	6.43%	1.12%	11.20%	4.19%	7.66%	7.94%	12.30%	9.71%	0.02%	6.15%
2010	3.38%	2.37%	0.12%	11.37%	14.63%	0.87%	6.56%	1.17%	10.92%	4.08%	7.55%	7.92%	13.20%	9.52%	0.02%	6.33%
2011	3.19%	2.32%	0.10%	10.53%	14.72%	0.85%	6.56%	1.10%	11.02%	3.88%	7.95%	8.26%	13.58%	9.68%	0.02%	6.24%
Average	3.49%	2.40%	0.21%	15.22%	12.86%	1.01%	6.62%	1.36%	10.21%	4.09%	7.22%	7.50%	12.37%	9.19%	0.03%	6.22%

Table 19. Teachers per One Thousand Pupils by Job Category in DFG I Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2000	3.18	2.15	0.22	15.64	10.22	1.12	5.82	1.39	8.32	3.38	5.86	5.88	11.23	7.83	0.02	4.25	86.51
2001	3.34	2.13	0.19	14.79	10.44	1.00	5.74	1.32	8.37	3.51	5.97	5.95	11.24	7.42	0.02	4.97	86.40
2002	3.20	2.20	0.21	15.67	10.00	1.00	5.77	1.20	8.13	3.65	5.93	5.87	12.31	7.74	0.04	5.56	88.48
2003	3.34	2.13	0.19	15.62	9.95	0.94	6.03	1.13	8.01	3.78	6.11	5.94	12.68	7.86	0.06	5.90	89.66
2004	3.06	2.03	0.21	15.72	10.22	0.84	5.85	1.23	8.09	3.63	5.77	6.10	13.44	7.70	0.04	6.05	89.98
2005	2.95	2.05	0.22	13.97	6.19	0.97	5.80	1.37	8.55	3.46	6.10	6.68	14.08	8.14	0.02	5.67	86.23
2006	3.03	2.10	0.22	14.12	6.82	1.00	6.02	1.31	8.56	3.85	6.22	6.77	14.54	8.36	0.02	5.93	88.86
2007	3.28	2.35	0.18	15.17	14.30	0.89	6.27	1.41	10.88	3.92	7.44	7.91	5.66	8.83	0.00	5.86	94.36
2008	3.26	2.28	0.21	12.51	20.77	0.84	6.28	1.26	11.23	3.88	7.49	7.94	1.76	8.92	0.00	5.75	94.37
2009	3.24	2.34	0.18	11.45	14.36	0.84	6.26	1.09	10.91	4.08	7.46	7.73	11.98	9.46	0.02	5.99	97.40
2010	3.27	2.30	0.11	11.02	14.18	0.84	6.36	1.14	10.59	3.95	7.32	7.68	12.79	9.23	0.02	6.14	96.94
2011	3.01	2.18	0.09	9.91	13.86	0.80	6.17	1.03	10.37	3.65	7.48	7.78	12.78	9.11	0.02	5.87	94.10
Average	3.18	2.18	0.19	13.85	11.70	0.92	6.02	1.24	9.29	3.73	6.57	6.83	11.26	8.36	0.03	5.66	91.02

Table 20. Teacher Distribution by Job Category in DFG J Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2000	8	6	0	49	19	3	13	3	21	7	12	16	25	23	0	15	220
2001	9	7	0	54	19	2	14	5	23	9	13	15	34	24	0	17	245
2002	9	9	0	46	24	2	13	5	22	10	16	18	37	24	0	18	253
2003	9	9	0	47	21	2	13	5	30	11	18	17	38	24	1	19	264
2004	9	9	2	18	36	2	12	4	34	9	22	23	46	26	0	20	272
2005	45	30	2	187	64	9	65	13	98	46	66	72	166	87	1	84	1,035
2006	47	33	1	193	71	8	65	11	98	48	67	72	175	92	1	82	1,064
2007	44	30	1	196	153	9	66	13	106	51	93	80	84	111	5	82	1,124
2008	40	30	1	182	195	7	66	14	118	49	97	87	51	113	5	81	1,136
2009	38	32	2	215	138	8	67	11	105	47	96	79	107	106	5	82	1,138
2010	39	31	2	194	142	8	67	10	103	44	96	81	120	106	4	87	1,134
2011	38	28	2	175	143	7	64	10	112	45	93	85	133	96	5	83	1,119
Total	335	254	13	1,556	1,025	67	525	104	870	376	689	645	1,016	832	27	670	9,004

Table 21. Percentage of Teaching Staff by Job Category in DFG J Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language
2000	3.64%	2.73%	0.00%	22.27%	8.64%	1.36%	5.91%	1.36%	9.55%	3.18%	5.45%	7.27%	11.36%	10.45%	0.00%	6.82%
2001	3.67%	2.86%	0.00%	22.04%	7.76%	0.82%	5.71%	2.04%	9.39%	3.67%	5.31%	6.12%	13.88%	9.80%	0.00%	6.94%
2002	3.56%	3.56%	0.00%	18.18%	9.49%	0.79%	5.14%	1.98%	8.70%	3.95%	6.32%	7.11%	14.62%	9.49%	0.00%	7.11%
2003	3.41%	3.41%	0.00%	17.80%	7.95%	0.76%	4.92%	1.89%	11.36%	4.17%	6.82%	6.44%	14.39%	9.09%	0.38%	7.20%
2004	3.31%	3.31%	0.74%	6.62%	13.24%	0.74%	4.41%	1.47%	12.50%	3.31%	8.09%	8.46%	16.91%	9.56%	0.00%	7.35%
2005	4.35%	2.90%	0.19%	18.07%	6.18%	0.87%	6.28%	1.26%	9.47%	4.44%	6.38%	6.96%	16.04%	8.41%	0.10%	8.12%
2006	4.42%	3.10%	0.09%	18.14%	6.67%	0.75%	6.11%	1.03%	9.21%	4.51%	6.30%	6.77%	16.45%	8.65%	0.09%	7.71%
2007	3.91%	2.67%	0.09%	17.44%	13.61%	0.80%	5.87%	1.16%	9.43%	4.54%	8.27%	7.12%	7.47%	9.88%	0.44%	7.30%
2008	3.52%	2.64%	0.09%	16.02%	17.17%	0.62%	5.81%	1.23%	10.39%	4.31%	8.54%	7.66%	4.49%	9.95%	0.44%	7.13%
2009	3.34%	2.81%	0.18%	18.89%	12.13%	0.70%	5.89%	0.97%	9.23%	4.13%	8.44%	6.94%	9.40%	9.31%	0.44%	7.21%
2010	3.44%	2.73%	0.18%	17.11%	12.52%	0.71%	5.91%	0.88%	9.08%	3.88%	8.47%	7.14%	10.58%	9.35%	0.35%	7.67%
2011	3.40%	2.50%	0.18%	15.64%	12.78%	0.63%	5.72%	0.89%	10.01%	4.02%	8.31%	7.60%	11.89%	8.58%	0.45%	7.42%
Average	3.72%	2.82%	0.14%	17.28%	11.38%	0.74%	5.83%	1.16%	9.66%	4.18%	7.65%	7.16%	11.28%	9.24%	0.30%	7.44%

Table 22. Teachers per One Thousand Pupils by Job Category in DFG J Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2000	3.24	2.43	0.00	19.86	7.70	1.22	5.27	1.22	8.51	2.84	4.86	6.49	10.13	9.32	0.00	6.08	89.18
2001	3.42	2.66	0.00	20.52	7.22	0.76	5.32	1.90	8.74	3.42	4.94	5.70	12.92	9.12	0.00	6.46	93.12
2002	3.33	3.33	0.00	17.02	8.88	0.74	4.81	1.85	8.14	3.70	5.92	6.66	13.69	8.88	0.00	6.66	93.60
2003	3.25	3.25	0.00	16.95	7.57	0.72	4.69	1.80	10.82	3.97	6.49	6.13	13.70	8.65	0.36	6.85	95.20
2004	3.12	3.12	0.69	6.24	12.47	0.69	4.16	1.39	11.78	3.12	7.62	7.97	15.94	9.01	0.00	6.93	94.25
2005	3.89	2.59	0.17	16.17	5.53	0.78	5.62	1.12	8.47	3.98	5.71	6.23	14.36	7.52	0.09	7.26	89.51
2006	4.17	2.93	0.09	17.14	6.30	0.71	5.77	0.98	8.70	4.26	5.95	6.39	15.54	8.17	0.09	7.28	94.47
2007	3.81	2.60	0.09	16.99	13.26	0.78	5.72	1.13	9.19	4.42	8.06	6.94	7.28	9.62	0.43	7.11	97.44
2008	3.47	2.60	0.09	15.79	16.92	0.61	5.73	1.21	10.24	4.25	8.42	7.55	4.43	9.80	0.43	7.03	98.57
2009	3.23	2.72	0.17	18.29	11.74	0.68	5.70	0.94	8.93	4.00	8.17	6.72	9.10	9.02	0.43	6.98	96.81
2010	3.26	2.59	0.17	16.23	11.88	0.67	5.60	0.84	8.62	3.68	8.03	6.78	10.04	8.87	0.33	7.28	94.86
2011	3.15	2.32	0.17	14.51	11.86	0.58	5.31	0.83	9.29	3.73	7.71	7.05	11.03	7.96	0.41	6.88	92.81
Average	3.52	2.67	0.14	16.36	10.78	0.70	5.52	1.09	9.15	3.95	7.24	6.78	10.68	8.75	0.28	7.04	94.67

Table 23. School Buildings Within DFG Groups A, B, I, and J

	DFG A	DFG B	DFG I	DFG J
Codistsch Code	11_5390_55	11_5300_70	13_2730_55	13_3630_50
	11_5390_65	11_5390_55	13_2730_60	21_5715_140
	11_950_50	11_5390_65	13_3310_116	21_5715_150
	13_1210_70	15_1730_78	13_4900_40	25_2720_50
	13_1210_95	15_860_45	13_4900_50	25_4570_50
	13_2330_135	17_2060_70	13_5370_95	27_3090_60
	13_2330_140	1_1300_30	13_660_60	27_3100_60
	13_3570_100	1_1960_60	13_760_58	27_3460_60
	13_3570_315	1_3480_25	19_1510_40	27_785_30
	17_2060_70	23_4920_55	19_2600_50	27_785_50
	1_1300_30	25_1640_60	19_370_20	27_820_20
	1_590_30	25_2770_60	19_4350_50	35_3320_70
	21_5210_100	27_1110_65	19_920_40	35_350_55
	23_4090_140	29_2520_83	21_2280_75	3_1760_60
	23_4090_150	29_2940_45	21_2580_50	3_4390_60
	25_100_70	29_3820_30	21_2580_85	3_4390_70
	25_2400_30	29_5020_70	21_4255_85	3_5330_50
	27_1110_65	29_770_50	21_5715_140	3_5880_50
	31_3970_95	33_4070_105	21_5715_150	7_1900_70
	31_4010_110	33_4070_80	23_1170_56	
	33_4070_105	39_2660_60	23_3120_70	
	33_4070_80	39_2660_70	23_4860_75	
	7_680_210	39_4160_60	25_2230_30	
	7_680_245	39_4160_70	25_2720_50	
	7_680_80	39_4540_40	25_3030_50	
	9_5790_70	39_4540_60	25_3200_40	
		3_1700_70	25_4570_50	
		3_2740_67	27_1530_30	
		41_4100_110	27_2000_40	
		5_3430_60	27_2460_65	
		5_4050_50	27_2870_100	
		5_4050_60	27_3090_60	
		5_4450_70	27_3340_30	
		7_260_15	27_4000_30	
		9_2820_60	27_4330_75	
		9_2840_50	27_4490_15	
		9_3130_91	27_5520_35	
			27_785_30	
			27_785_50	
			27_820_20	
			35_2170_35	
			35_350_55	
			35_510_20	
			35_5470_33	
			35_5540_50	
			35_555_10	
			35_555_48	
			35_555_65	
			39_310_30	
			39_3560_80	
			39_4670_60	
			39_4670_65	
			39_5090_60	
			39_5730_60	
			3_1070_40	
			3_1760_60	
			3_2620_55	
			3_2900_76	
			3_3330_20	
			3_3760_80	
			3_3850_30	
			3_40_10	
			3_4310_55	
			3_4390_60	
			3_4390_70	
			3_4405_60	
			3_4430_50	
			3_5160_95	
			3_5920_25	
			5_1420_40	
			5_1420_60	
			5_3080_55	
			5_3360_110	
			5_3440_60	
			7_1900_70	
			7_5400_100	
			7_800_67	
			7_800_73	
Total Schools	26	37	78	19
Total Observations	17,817	18,245	49,662	9,004

Table 24. Enrollment Data by DFG Group, 2000-2011

School Year	A	B	I	J
2000	12821	17216	44700	2467
2001	13186	17534	47047	2631
2002	14290	17799	48191	2703
2003	15123	18325	47946	2773
2004	14596	18356	48725	2886
2005	16854	15558	44451	11564
2006	15821	15288	45194	11263
2007	14839	14794	43841	11535
2008	14551	14708	43818	11525
2009	13981	14499	44088	11755
2010	13778	13975	44007	11955
2011	13573	13987	43593	12057
Total	173410	192036	545598	95114

Table 25. Distribution of Teaching Staff by Job Category in Low Accountability Pressure Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2000	607	358	54	3,379	2,041	249	1,073	297	1,440	548	966	979	2,501	1,458	10	454	16,414
2001	625	367	53	3,526	2,110	230	1,113	290	1,486	581	999	1,002	2,668	1,499	9	563	17,121
2002	627	395	64	3,809	2,108	222	1,139	275	1,491	611	1,009	1,032	2,866	1,565	12	666	17,891
2003	567	348	52	3,400	1,871	188	1,054	236	1,335	581	913	943	2,672	1,411	8	661	16,240
2004	566	355	54	3,393	1,934	173	1,054	231	1,382	579	929	966	2,825	1,442	9	706	16,598
2005	426	262	43	2,332	882	109	773	160	1,100	437	738	775	2,052	1,084	6	585	11,764
2006	428	265	41	2,179	1,015	105	784	156	1,140	448	777	814	2,090	1,107	6	592	11,947
2007	427	264	31	2,365	1,896	100	782	155	1,485	452	931	942	719	1,152	10	600	12,311
2008	455	284	27	2,122	2,891	99	854	142	1,729	484	1,041	1,080	226	1,243	12	639	13,328
2009	484	312	36	2,058	2,190	109	922	138	1,785	524	1,098	1,109	1,590	1,333	15	695	14,398
2010	522	331	33	2,063	2,253	107	958	144	1,853	536	1,126	1,155	1,776	1,354	12	733	14,956
2011	435	276	32	1,665	1,961	79	803	112	1,587	453	997	1,004	1,606	1,139	11	633	12,793
Total	6,169	3,817	520	32,291	23,152	1,770	11,309	2,336	17,813	6,234	11,524	11,801	23,591	15,787	120	7,527	175,761

Table 26. Percentage of Teaching Staff by Job Category in Low Accountability Pressure Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language
2000	3.70%	2.18%	0.33%	20.59%	12.43%	1.52%	6.54%	1.81%	8.77%	3.34%	5.89%	5.96%	15.24%	8.88%	0.06%	2.77%
2001	3.65%	2.14%	0.31%	20.59%	12.32%	1.34%	6.50%	1.69%	8.68%	3.39%	5.83%	5.85%	15.58%	8.76%	0.05%	3.29%
2002	3.50%	2.21%	0.36%	21.29%	11.78%	1.24%	6.37%	1.54%	8.33%	3.42%	5.64%	5.77%	16.02%	8.75%	0.07%	3.72%
2003	3.49%	2.14%	0.32%	20.94%	11.52%	1.16%	6.49%	1.45%	8.22%	3.58%	5.62%	5.81%	16.45%	8.69%	0.05%	4.07%
2004	3.41%	2.14%	0.33%	20.44%	11.65%	1.04%	6.35%	1.39%	8.33%	3.49%	5.60%	5.82%	17.02%	8.69%	0.05%	4.25%
2005	3.62%	2.23%	0.37%	19.82%	7.50%	0.93%	6.57%	1.36%	9.35%	3.71%	6.27%	6.59%	17.44%	9.21%	0.05%	4.97%
2006	3.58%	2.22%	0.34%	18.24%	8.50%	0.88%	6.56%	1.31%	9.54%	3.75%	6.50%	6.81%	17.49%	9.27%	0.05%	4.96%
2007	3.47%	2.14%	0.25%	19.21%	15.40%	0.81%	6.35%	1.26%	12.06%	3.67%	7.56%	7.65%	5.84%	9.36%	0.08%	4.87%
2008	3.41%	2.13%	0.20%	15.92%	21.69%	0.74%	6.41%	1.07%	12.97%	3.63%	7.81%	8.10%	1.70%	9.33%	0.09%	4.79%
2009	3.36%	2.17%	0.25%	14.29%	15.21%	0.76%	6.40%	0.96%	12.40%	3.64%	7.63%	7.70%	11.04%	9.26%	0.10%	4.83%
2010	3.49%	2.21%	0.22%	13.79%	15.06%	0.72%	6.41%	0.96%	12.39%	3.58%	7.53%	7.72%	11.87%	9.05%	0.08%	4.90%
2011	3.40%	2.16%	0.25%	13.01%	15.33%	0.62%	6.28%	0.88%	12.41%	3.54%	7.79%	7.85%	12.55%	8.90%	0.09%	4.95%
Average	3.51%	2.17%	0.30%	18.37%	13.17%	1.01%	6.43%	1.33%	10.13%	3.55%	6.56%	6.71%	13.42%	8.98%	0.07%	4.28%

Table 27. Teachers per One Thousand Pupils by Job Category in Low Accountability Pressure Schools, 2000-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2000	3.18	1.88	0.28	17.72	10.70	1.31	5.63	1.56	7.55	2.87	5.06	5.13	13.11	7.64	0.05	2.38	86.05
2001	3.15	1.85	0.27	17.80	10.65	1.16	5.62	1.46	7.50	2.93	5.04	5.06	13.47	7.57	0.05	2.84	86.42
2002	3.07	1.94	0.31	18.67	10.33	1.09	5.58	1.35	7.31	3.00	4.95	5.06	14.05	7.67	0.06	3.26	87.70
2003	3.06	1.88	0.28	18.34	10.09	1.01	5.68	1.27	7.20	3.13	4.92	5.09	14.41	7.61	0.04	3.57	87.59
2004	3.03	1.90	0.29	18.16	10.35	0.93	5.64	1.24	7.40	3.10	4.97	5.17	15.12	7.72	0.05	3.78	88.85
2005	3.13	1.92	0.32	17.12	6.48	0.80	5.68	1.17	8.08	3.21	5.42	5.69	15.07	7.96	0.04	4.30	86.38
2006	3.19	1.98	0.31	16.24	7.57	0.78	5.84	1.16	8.50	3.34	5.79	6.07	15.58	8.25	0.04	4.41	89.06
2007	3.27	2.02	0.24	18.11	14.52	0.77	5.99	1.19	11.37	3.46	7.13	7.21	5.51	8.82	0.08	4.59	94.26
2008	3.24	2.02	0.19	15.11	20.59	0.70	6.08	1.01	12.31	3.45	7.41	7.69	1.61	8.85	0.09	4.55	94.91
2009	3.25	2.10	0.24	13.83	14.71	0.73	6.19	0.93	11.99	3.52	7.38	7.45	10.68	8.96	0.10	4.67	96.74
2010	3.37	2.14	0.21	13.33	14.56	0.69	6.19	0.93	11.98	3.46	7.28	7.46	11.48	8.75	0.08	4.74	96.66
2011	3.19	2.02	0.23	12.21	14.38	0.58	5.89	0.82	11.64	3.32	7.31	7.36	11.78	8.35	0.08	4.64	93.82
Average	3.17	1.96	0.27	16.59	11.90	0.91	5.81	1.20	9.15	3.20	5.92	6.06	12.12	8.11	0.06	3.87	90.30

Table 28. Enrollment Data for Low Accountability Pressure Schools by Year, 2000-2011

School Year	Enrollment
2000	190,739
2001	198,104
2002	203,999
2003	185,402
2004	186,805
2005	136,182
2006	134,147
2007	130,607
2008	140,429
2009	148,836
2010	154,728
2011	136,355
Total	1,946,331

Table 29. Distribution of Teaching Staff by Job Category in Very High Accountability Pressure Schools, 2009-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2009	18	11	5	70	61	3	28	6	72	9	26	28	31	47	0	5	420
2010	19	11	6	90	72	2	28	5	70	11	25	26	23	46	1	7	442
2011	57	24	11	171	177	5	72	9	179	28	81	71	122	114	3	22	1,146
Total	94	46	22	331	310	10	128	20	321	48	132	125	176	207	4	34	2,008

Table 30. Percentage of Teaching Staff by Job Category in Very High Accountability Pressure Schools, 2009-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language
2009	4.29%	2.62%	1.19%	16.67%	14.52%	0.71%	6.67%	1.43%	17.14%	2.14%	6.19%	6.67%	7.38%	11.19%	0.00%	1.19%
2010	4.30%	2.49%	1.36%	20.36%	16.29%	0.45%	6.33%	1.13%	15.84%	2.49%	5.66%	5.88%	5.20%	10.41%	0.23%	1.58%
2011	4.97%	2.09%	0.96%	14.92%	15.45%	0.44%	6.28%	0.79%	15.62%	2.44%	7.07%	6.20%	10.65%	9.95%	0.26%	1.92%
Average	4.68%	2.29%	1.10%	16.48%	15.44%	0.50%	6.37%	1.00%	15.99%	2.39%	6.57%	6.23%	8.76%	10.31%	0.20%	1.69%

Table 31. Teachers per One Thousand Pupils by Job Category in Very High Accountability Pressure Schools, 2009-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2009	5.93	3.63	1.65	23.08	20.11	0.99	9.23	1.98	23.74	2.97	8.57	9.23	10.22	15.50	0.00	1.65	138.48
2010	6.10	3.53	1.92	28.87	23.10	0.64	8.98	1.60	22.46	3.53	8.02	8.34	7.38	14.76	0.32	2.25	141.80
2011	5.22	2.20	1.01	15.67	16.22	0.46	6.60	0.82	16.40	2.57	7.42	6.51	11.18	10.45	0.27	2.02	105.02
Average	5.51	2.70	1.29	19.40	18.17	0.59	7.50	1.17	18.81	2.81	7.74	7.33	10.32	12.13	0.23	1.99	117.68

Table 32. Enrollment Data for Very High Accountability Pressure Schools, 2009-2011

School Year	Enrollment
2009	3,033
2010	3,117
2011	10,912
Total	17,062

Table 33. Distribution of Teaching Staff by Job Category in Moderate Accountability Pressure Schools, 2003-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2003	87	37	9	480	219	28	120	27	139	46	93	95	322	185	5	40	1,932
2004	64	34	9	455	229	27	115	24	144	45	87	92	305	174	5	37	1,846
2005	174	109	18	621	450	51	313	67	468	144	296	330	873	413	5	169	4,501
2006	171	108	19	626	505	47	324	62	486	151	325	339	922	421	7	178	4,691
2007	174	112	23	708	897	41	329	56	726	155	409	408	241	469	6	174	4,928
2008	114	64	16	366	723	23	191	37	463	88	246	250	28	302	3	97	3,011
2009	88	50	10	408	390	17	154	25	307	68	168	169	292	254	2	74	2,476
2010	69	32	5	223	330	8	110	16	264	49	141	139	233	196	1	51	1,867
2011	108	60	9	420	466	13	190	27	388	79	231	227	381	291	3	108	3,001
Total	1,049	606	118	4,307	4,209	255	1,846	341	3,385	825	1,996	2,049	3,597	2,705	37	928	28,253

Table 34. Percentage of Teaching Staff by Job Category in Moderate Accountability Pressure Schools, 2003-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language
2003	4.50%	1.92%	0.47%	24.84%	11.34%	1.45%	6.21%	1.40%	7.19%	2.38%	4.81%	4.92%	16.67%	9.58%	0.26%	2.07%
2004	3.47%	1.84%	0.49%	24.65%	12.41%	1.46%	6.23%	1.30%	7.80%	2.44%	4.71%	4.98%	16.52%	9.43%	0.27%	2.00%
2005	3.87%	2.42%	0.40%	13.80%	10.00%	1.13%	6.95%	1.49%	10.40%	3.20%	6.58%	7.33%	19.40%	9.18%	0.11%	3.75%
2006	3.65%	2.30%	0.41%	13.34%	10.77%	1.00%	6.91%	1.32%	10.36%	3.22%	6.93%	7.23%	19.65%	8.97%	0.15%	3.79%
2007	3.53%	2.27%	0.47%	14.37%	18.20%	0.83%	6.68%	1.14%	14.73%	3.15%	8.30%	8.28%	4.89%	9.52%	0.12%	3.53%
2008	3.79%	2.13%	0.53%	12.16%	24.01%	0.76%	6.34%	1.23%	15.38%	2.92%	8.17%	8.30%	0.93%	10.03%	0.10%	3.22%
2009	3.55%	2.02%	0.40%	16.48%	15.75%	0.69%	6.22%	1.01%	12.40%	2.75%	6.79%	6.83%	11.79%	10.26%	0.08%	2.99%
2010	3.70%	1.71%	0.27%	11.94%	17.68%	0.43%	5.89%	0.86%	14.14%	2.62%	7.55%	7.45%	12.48%	10.50%	0.05%	2.73%
2011	3.60%	2.00%	0.30%	14.00%	15.53%	0.43%	6.33%	0.90%	12.93%	2.63%	7.70%	7.56%	12.70%	9.70%	0.10%	3.60%
Average	3.71%	2.14%	0.42%	15.24%	14.90%	0.90%	6.53%	1.21%	11.98%	2.92%	7.06%	7.25%	12.73%	9.57%	0.13%	3.28%

Table 35. Teachers per One Thousand Pupils by Job Category in Moderate Accountability Pressure Schools, 2003-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2003	4.23	1.80	0.44	23.32	10.64	1.36	5.83	1.31	6.75	2.24	4.52	4.62	15.65	8.99	0.24	1.94	93.88
2004	3.27	1.74	0.46	23.25	11.70	1.38	5.88	1.23	7.36	2.30	4.45	4.70	15.59	8.89	0.26	1.89	94.34
2005	3.33	2.09	0.34	11.88	8.61	0.98	5.99	1.28	8.95	2.75	5.66	6.31	16.70	7.90	0.10	3.23	86.10
2006	3.30	2.09	0.37	12.09	9.75	0.91	6.26	1.20	9.39	2.92	6.28	6.55	17.81	8.13	0.14	3.44	90.59
2007	3.37	2.17	0.45	13.72	17.39	0.79	6.38	1.09	14.07	3.00	7.93	7.91	4.67	9.09	0.12	3.37	95.53
2008	3.72	2.09	0.52	11.96	23.62	0.75	6.24	1.21	15.13	2.87	8.04	8.17	0.91	9.87	0.10	3.17	98.37
2009	3.54	2.01	0.40	16.40	15.68	0.68	6.19	1.00	12.34	2.73	6.75	6.79	11.74	10.21	0.08	2.97	99.53
2010	3.67	1.70	0.27	11.86	17.55	0.43	5.85	0.85	14.04	2.61	7.50	7.39	12.39	10.43	0.05	2.71	99.32
2011	3.34	1.86	0.28	13.00	14.43	0.40	5.88	0.84	12.01	2.45	7.15	7.03	11.80	9.01	0.09	3.34	92.91
Average	3.47	2.00	0.39	14.24	13.92	0.84	6.11	1.13	11.19	2.73	6.60	6.78	11.90	8.95	0.12	3.07	93.44

Table 36. Enrollment Data for Moderate Accountability Pressure Schools by Year, 2003-2011

School Year	Enrollment
2003	20,580
2004	19,568
2005	52,274
2006	51,780
2007	51,586
2008	30,609
2009	24,878
2010	18,799
2011	32,300
Total	302,371

Table 37. Distribution of Teaching Staff by Job Category in High Accountability Pressure Schools, 2005-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2005	58	31	9	280	144	23	97	18	141	35	93	88	275	159	2	29	1,482
2006	60	30	9	261	150	22	100	20	156	37	91	101	283	157	2	31	1,510
2007	61	28	8	357	263	19	93	17	226	34	100	109	14	143	1	40	1,513
2008	115	56	10	468	575	19	168	21	403	69	181	182	23	249	5	55	2,599
2009	78	36	8	326	301	11	124	12	266	48	118	116	192	182	5	42	1,865
2010	69	36	8	272	281	12	112	13	229	45	111	113	200	184	3	41	1,729
2011	47	21	3	218	194	4	70	10	145	33	73	83	143	146	2	37	1,229
Total	488	238	55	2,182	1,908	110	764	111	1,566	301	767	792	1,130	1,220	20	275	11,927

Table 38. Percentage of Teaching Staff by Job Category in High Accountability Pressure Schools, 2005-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language
2005	3.91%	2.09%	0.61%	18.89%	9.72%	1.55%	6.55%	1.21%	9.51%	2.36%	6.28%	5.94%	18.56%	10.73%	0.13%	1.96%
2006	3.97%	1.99%	0.60%	17.28%	9.93%	1.46%	6.62%	1.32%	10.33%	2.45%	6.03%	6.69%	18.74%	10.40%	0.13%	2.05%
2007	4.03%	1.85%	0.53%	23.60%	17.38%	1.26%	6.15%	1.12%	14.94%	2.25%	6.61%	7.20%	0.93%	9.45%	0.07%	2.64%
2008	4.42%	2.15%	0.38%	18.01%	22.12%	0.73%	6.46%	0.81%	15.51%	2.65%	6.96%	7.00%	0.88%	9.58%	0.19%	2.12%
2009	4.18%	1.93%	0.43%	17.48%	16.14%	0.59%	6.65%	0.64%	14.26%	2.57%	6.33%	6.22%	10.29%	9.76%	0.27%	2.25%
2010	3.99%	2.08%	0.46%	15.73%	16.25%	0.69%	6.48%	0.75%	13.24%	2.60%	6.42%	6.54%	11.57%	10.64%	0.17%	2.37%
2011	3.82%	1.71%	0.24%	17.74%	15.79%	0.33%	5.70%	0.81%	11.80%	2.69%	5.94%	6.75%	11.64%	11.88%	0.16%	3.01%
Average	4.09%	2.00%	0.46%	18.29%	16.00%	0.92%	6.41%	0.93%	13.13%	2.52%	6.43%	6.64%	9.47%	10.23%	0.17%	2.31%

Table 39. Teachers per One Thousand Pupils by Job Category in High Accountability Pressure Schools, 2005-2011

School Year	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
2005	3.66	1.96	0.57	17.67	9.09	1.45	6.12	1.14	8.90	2.21	5.87	5.55	17.36	10.03	0.13	1.83	93.53
2006	3.94	1.97	0.59	17.14	9.85	1.44	6.57	1.31	10.24	2.43	5.98	6.63	18.58	10.31	0.13	2.04	99.15
2007	4.26	1.96	0.56	24.96	18.39	1.33	6.50	1.19	15.80	2.38	6.99	7.62	0.98	10.00	0.07	2.80	105.77
2008	4.78	2.33	0.42	19.45	23.90	0.79	6.98	0.87	16.75	2.87	7.52	7.56	0.96	10.35	0.21	2.29	108.03
2009	4.50	2.08	0.46	18.83	17.38	0.64	7.16	0.69	15.36	2.77	6.81	6.70	11.09	10.51	0.29	2.43	107.71
2010	4.23	2.21	0.49	16.66	17.21	0.74	6.86	0.80	14.03	2.76	6.80	6.92	12.25	11.27	0.18	2.51	105.92
2011	4.17	1.86	0.27	19.34	17.21	0.35	6.21	0.89	12.86	2.93	6.48	7.36	12.69	12.95	0.18	3.28	109.04
Average	4.27	2.08	0.48	19.08	16.69	0.96	6.68	0.97	13.70	2.63	6.71	6.93	9.88	10.67	0.17	2.40	104.30

Table 40. Enrollment Data for High Accountability Pressure Schools by Year, 2005-2011

School Year	Enrollment
2005	15,846
2006	15,229
2007	14,304
2008	24,059
2009	17,316
2010	16,323
2011	11,272
Total	114,348

Table 41. Percent Change in Teacher per One Thousand Pupils Ratios Statewide by Job Category, 2000-2011

	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
Initial Average Ratio	3.15	1.88	0.29	18.26	10.46	1.15	5.63	1.41	7.38	2.96	4.98	5.07	13.79	7.66	0.05	2.97	87.10
Final Average Ratio	3.46	2.07	0.28	14.15	16.63	0.66	6.19	0.93	12.60	3.26	7.33	7.44	8.91	9.16	0.10	4.19	97.36
% Change	10.10%	10.15%	-2.34%	-22.51%	58.99%	-42.61%	9.88%	-34.32%	70.72%	10.25%	46.97%	46.69%	-35.40%	19.60%	83.60%	40.98%	11.78%

Table 42. Average Teacher per One Thousand Pupils Ratio Values and Percent Change Over Time by Job Category in DFG A Schools, 2000-2011

	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
Initial Average Ratio	4.13	1.67	0.56	26.42	9.85	1.29	5.37	1.68	6.12	2.14	3.09	3.46	14.87	9.86	0.32	1.14	91.96
Final Average Ratio	5.08	2.16	0.69	23.87	19.13	0.46	6.58	0.95	15.73	2.50	6.76	6.49	7.76	14.77	0.14	1.95	115.03
% Change	22.94%	29.94%	21.47%	-9.63%	94.17%	-64.30%	22.71%	-43.49%	156.85%	17.06%	118.83%	87.70%	-47.80%	49.83%	-55.25%	71.48%	25.09%

Table 43. Average Teacher per One Thousand Pupils Ratio Values and Percent Change Over Time by Job Category in DFG B Schools, 2000-2011

	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
Initial Average Ratio	3.27	1.88	0.06	24.31	10.00	0.99	5.67	1.00	6.86	2.62	4.37	4.39	16.01	7.86	0.03	1.45	90.76
Final Average Ratio	3.87	1.89	0.07	19.14	17.41	0.38	5.80	0.53	13.85	3.04	7.04	7.06	9.31	9.04	0.21	2.55	101.20
% Change	18.18%	0.56%	23.97%	-21.26%	74.13%	-61.17%	2.28%	-47.46%	101.99%	16.04%	61.04%	60.88%	-41.83%	15.07%	652.95%	76.20%	11.50%

Table 44. Average Teacher per One Thousand Pupils Ratio Values and Percent Change Over Time by Job Category in DFG I Schools, 2000-2011

	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
Initial Average Ratio	3.26	2.15	0.20	15.43	10.15	1.01	5.84	1.26	8.21	3.58	5.97	5.91	11.87	7.71	0.04	5.17	87.76
Final Average Ratio	3.20	2.27	0.15	11.22	15.79	0.83	6.27	1.13	10.77	3.89	7.44	7.78	9.83	9.18	0.02	5.94	95.70
% Change	-2.01%	5.73%	-26.91%	-27.27%	55.53%	-17.89%	7.36%	-10.37%	31.23%	8.74%	24.55%	31.63%	-17.19%	19.01%	-53.73%	14.79%	9.04%

Table 45. Average Teacher per One Thousand Pupils Ratio Values and Percent Change Over Time by Job Category in DFG J Schools, 2000-2011

	Administration and Supervision	Art	Business Education	Elementary Generalist	English/LAL	Family/Consumer Science	Health/Physical Education	Industrial Arts	Mathematics	Music	Science	Social Studies	Special Education	Support Services	Vocational Education	World Language	Total
Initial Average Ratio	3.31	2.92	0.00	18.59	7.84	0.86	5.02	1.69	9.05	3.48	5.55	6.24	12.61	8.99	0.09	6.51	92.78
Final Average Ratio	3.28	2.56	0.15	16.21	13.10	0.63	5.58	0.95	9.27	3.92	8.08	7.02	8.65	8.91	0.40	7.04	95.76
% Change	-0.92%	-12.23%	0.00%	-12.82%	67.00%	-26.17%	11.20%	-43.62%	2.39%	12.48%	45.51%	12.48%	-31.42%	-0.91%	346.03%	8.11%	3.22%

APPENDIX B

Description of Study Variables and Variable Sources

Variable Name	**Description of Variable**	**Description of Variable Source**
county_code	State issued code for the county in which the school is located	New Jersey School Report Card Header Sheets, New Jersey Annual Fall Enrollment Reports, New Jersey Fall Staffing Reports
district_code	State issued code for the district in which the school is located	New Jersey School Report Card Header Sheets, New Jersey Annual Fall Enrollment Reports, New Jersey Fall Staffing Reports
school_code	State issued code for the individual school building	New Jersey School Report Card Header Sheets, New Jersey Annual Fall Enrollment Reports, New Jersey Fall Staffing Reports
codistsch	Combination of ***county_code***, ***district_code***, and ***school_code***; Utilized to generate a unique code for each school building in the state of New Jersey	Generated by researcher from ***county_code***, ***district_code***, and ***school_code***
row_total	Total enrollment value by school building	New Jersey Annual Fall Enrollment Reports
dfg	District Factor Group	New Jersey School Report Card Header Sheets
last	Last name of teacher	New Jersey Fall Staffing Reports
first	First name of teacher	New Jersey Fall Staffing Reports
si_year	School in Need of Improvement Status Year for a particular school building	New Jersey Schools Identified as in Need of Improvement and Yearly Status Reports, 2006-2011; New Jersey No Child Left Behind Annual Reports, 2001-2005
si_cat	Categorical representation of accountability pressure experienced by school	Generated by researcher based upon si_year
jc1	Job Code 1; Primary teaching assignment for a school employee	New Jersey Fall Staffing Reports
job_cat	Categorical representation of curricular area category associated with ***jc1***	Generated by researcher based upon jc1 and New Jersey State Department of Education Certificated Staff Status Coding Manual; See tables 1-4
school_year	Calendar year associated with data fields	Input by researcher based upon year of corresponding data

APPENDIX C

List of New Jersey Middle Schools, 1999-2011

codistsch	School Name	County
1_10_50	EMMA C ATTALES	Atlantic
1_1300_30	FANNY D RITTENBERG MIDDLE SCHOOL	Atlantic
1_1940_120	WILLIAM DAVIES MIDDLE SCHOOL	Atlantic
1_1960_60	HAMMONTON MIDDLE SCHOOL	Atlantic
1_2680_20	BELHAVEN MIDDLE SCHOOL	Atlantic
1_3020_10	EUGENE A TIGHE MIDDLE SCHOOL	Atlantic
1_3480_25	MULLICA TOWNSHIP MIDDLE SCHOOL	Atlantic
1_570_30	BRIGANTINE NORTH SCHOOL	Atlantic
1_590_30	CLEARY MIDDLE SCHOOL	Atlantic
3_1070_40	DEMAREST MIDDLE SCHOOL	Bergen
3_1345_60	MIDDLE SCHOOL	Bergen
3_1370_76	J E DISMUS MIDDLE SCHOOL	Bergen
3_1450_60	THOMAS JEFFERSON MIDDLE SCHOOL	Bergen
3_1450_70	MEMORIAL MIDDLE SCHOOL	Bergen
3_1550_100	LEWIS F COLE MIDDLE SCHOOL	Bergen
3_1700_70	GARFIELD MIDDLE SCHOOL	Bergen
3_1760_60	GLEN ROCK MIDDLE SCHOOL	Bergen
3_1860_130	MIDDLE SCHOOL	Bergen
3_2180_20	GEORGE G WHITE	Bergen
3_2620_55	LEONIA MIDDLE SCHOOL	Bergen
3_2740_67	THOMAS JEFFERSON MIDDLE SCHOOL	Bergen
3_2900_76	RAMAPO RIDGE	Bergen
3_300_75	ROY W BROWN MIDDLE SCHOOL	Bergen
3_3330_20	FIELDSTONE MIDDLE SCHOOL	Bergen
3_3550_85	DAVID E OWENS MIDDLE SCHOOL	Bergen
3_3600_90	NORTH ARLINGTON MIDDLE SCHOOL	Bergen
3_3730_50	NATHAN HALE	Bergen
3_3760_80	VALLEY MIDDLE SCHOOL	Bergen
3_3850_30	CHARLES DEWOLF	Bergen
3_3930_60	WEST BROOK MIDDLE SCHOOL	Bergen
3_3930_65	EAST BROOK MIDDLE SCHOOL	Bergen
3_40_10	BROOKSIDE	Bergen
3_4310_55	ERIC S SMITH	Bergen
3_4390_60	BENJAMIN FRANKLIN MIDDLE SCHOOL	Bergen
3_4390_70	GEORGE WASHINGTON MIDDLE SCHOOL	Bergen
3_4405_60	RIVER DELL MID RIVR EDGE	Bergen
3_4430_50	HOLDRUM	Bergen

codistsch	School Name	County
3_5150_60	BENJAMIN FRANKLIN MIDDLE SCHOOL	Bergen
3_5150_70	THOMAS JEFFERSON MIDDLE SCHOOL	Bergen
3_5160_95	TENAFLY MIDDLE SCHOOL	Bergen
3_5330_50	EMIL A CAVALLINI	Bergen
3_5830_70	GRETA OSTROVSKY MIDDLE SCHOOL	Bergen
3_5880_50	WOODCLIFF MIDDLE SCHOOL	Bergen
3_5920_25	DWIGHT D EISENHOWER MIDDLE SCHOOL	Bergen
5_1030_60	WALNUT ST	Burlington
5_1060_7	DELRAN MIDDLE SCHOOL	Burlington
5_1280_70	SAMUEL M RIDGWAY SCHOOL	Burlington
5_1420_40	FRANCES DEMASI MIDDLE SCHOOL	Burlington
5_1420_60	MARLTON MIDDLE SCHOOL	Burlington
5_1520_55	FLORENCE TOWNSHIP MIDDLE SCHOOL	Burlington
5_2850_60	LUMBERTON MIDDLE SCHOOL	Burlington
5_3010_100	RALPH J STEINHAUER ELEM	Burlington
5_3080_55	MEDFORD TOWNSHIP MEMORIAL	Burlington
5_3360_110	WM ALLEN III MIDDLE SCHOOL	Burlington
5_3430_60	F W HOLBEIN	Burlington
5_3440_60	T E HARRINGTON MIDDLE SCHOOL	Burlington
5_3690_60	N. BURLINGTON COUNTY REGIONAL MID SCHOOL	Burlington
5_4050_50	HELEN A FORT MIDDLE SCHOOL	Burlington
5_4050_60	MARCUS W NEWCOMB	Burlington
5_4450_70	RIVERSIDE MIDDLE SCHOOL	Burlington
5_4740_55	INDIAN MILLS MEMORIAL SCHOOL	Burlington
5_475_90	MAC FARLAND INTERMEDIATE SCHOOL	Burlington
5_5130_40	KENNETH R OLSON MIDDLE SCHOOL	Burlington
5_5720_50	WESTAMPTON MIDDLE SCHOOL	Burlington
5_5805_57	WILLINGBORO MEMORIAL UPPER	Burlington
5_840_53	CINNAMINSON MIDDLE SCHOOL	Burlington
7_1780_35	CHARLES W LEWIS	Camden
7_1780_55	GLEN LANDING	Camden
7_1900_70	MIDDLE	Camden
7_190_30	WOODLAND	Camden
7_260_15	BELL OAKS	Camden
7_340_30	DWIGHT EISENHOWER MIDDLE SCHOOL	Camden
7_3420_20	RAYMOND W KERSHAW	Camden
7_4060_55	HOWARD M PHIFER MIDDLE SCHOOL	Camden
7_5080_60	SAMUEL S YELLIN	Camden
7_5400_100	VOORHEES MIDDLE SCHOOL	Camden
7_680_210	HATCH MIDDLE SCHOOL	Camden

codistsch	School Name	County
7_680_245	MORGAN VILLAGE MIDDLE SCHOOL	Camden
7_680_80	VETERANS MEMORIAL MIDDLE SCHOOL	Camden
7_800_67	JOHN A CARUSI MIDDLE SCHOOL	Camden
7_800_73	HENRY C BECK MIDDLE SCHOOL	Camden
7_940_40	COLLINGSWOOD MIDDLE SCHOOL	Camden
9_2820_60	RICHARD M TEITELMAN SCHOOL	Cape May
9_2840_50	SANDMAN CONSOLIDATED	Cape May
9_3130_91	MIDDLE TWP ELEM NO 4	Cape May
9_3780_60	INTERMEDIATE	Cape May
9_5340_30	UPPER TOWNSHIP MIDDLE SCHOOL	Cape May
9_5790_70	WILDWOOD MIDDLE SCHOOL	Cape May
11_5300_70	WOODRUFF SCHOOL	Cumberland
11_5390_55	LANDIS INTERMEDIATE SCHOOL	Cumberland
11_5390_65	ANTHONY ROSSI INTERMEDIATE SCHOOL	Cumberland
11_950_50	PORT NORRIS	Cumberland
13_1210_70	JOHN L COSTLEY MIDDLE SCHOOL	Essex
13_1210_95	PATRICK F HEALY MIDDLE SCHOOL	Essex
13_2330_135	UNIVERSITY MIDDLE SCHOOL	Essex
13_2330_140	UNION AVE MIDDLE SCHOOL	Essex
13_250_25	BELLEVILLE MIDDLE SCHOOL	Essex
13_2730_55	HERITAGE MIDDLE SCHOOL	Essex
13_2730_60	MT PLEASANT MIDDLE SCHOOL	Essex
13_3310_116	GLENFIELD MIDDLE SCHOOL	Essex
13_3570_100	LUIS MUNOZ MARIN MIDDLE SCHOOL	Essex
13_3570_315	CAMDEN MIDDLE SCHOOL	Essex
13_3630_50	GOULD MOUNTAIN SCHOOL	Essex
13_3750_60	FRANKLIN MIDDLE SCHOOL (JOHN H WALKER MS)	Essex
13_4900_40	MAPLEWOOD MIDDLE SCHOOL	Essex
13_4900_50	SOUTH ORANGE MIDDLE SCHOOL	Essex
13_5370_95	HENRY B WHITEHORNE MIDDLE SCHOOL	Essex
13_5680_70	EDISON MIDDLE SCHOOL	Essex
13_5680_90	ROOSEVELT MIDDLE SCHOOL	Essex
13_660_60	GROVER CLEVELAND MIDDLE SCHOOL	Essex
13_760_58	CEDAR GROVE MEMORIAL MIDDLE SCHOOL	Essex
15_1100_45	MONONGAHELA MIDDLE SCHOOL	Gloucester
15_1730_78	GLASSBORO INTERMEDIATE SCHOOL	Gloucester
15_1830_60	NEHAUNSEY MIDDLE SCHOOL	Gloucester
15_2440_60	KINGSWAY REGIONAL MIDDLE SCHOOL	Gloucester
15_4140_75	PITMAN MIDDLE SCHOOL	Gloucester
15_4940_60	DELSEA REGIONAL MIDDLE SCHOOL	Gloucester

codistsch	School Name	County
15_5500_26	CHESTNUT RIDGE MIDDLE SCHOOL	Gloucester
15_5500_50	ORCHARD VALLEY MIDDLE SCHOOL	Gloucester
15_5620_130	WEST DEPTFORD MIDDLE SCHOOL	Gloucester
15_860_45	CLAYTON MIDDLE SCHOOL	Gloucester
15_870_30	CLEARVIEW REGIONAL MIDDLE SCHOOL	Gloucester
17_2060_70	WASHINGTON NO 1	Hudson
17_4730_80	SECAUCUS MIDDLE SCHOOL	Hudson
19_1510_40	READING FLEMING INTERMEDIATE	Hunterdon
19_20_5	ALEXANDRIA SCHOOL	Hunterdon
19_2140_55	HIGH BRIDGE MIDDLE SCHOOL	Hunterdon
19_2600_50	WOODGLEN	Hunterdon
19_370_20	ETHEL HOPPOCK ELEM	Hunterdon
19_4350_50	READINGTON	Hunterdon
19_920_40	ROUND VALLEY	Hunterdon
21_1245_70	MELVIN H KREPS SCHOOL	Mercer
21_1430_60	GILMORE J FISHER MIDDLE SCHOOL	Mercer
21_1950_70	ALBERT E GRICE MIDDLE SCHOOL	Mercer
21_1950_80	EMILY C REYNOLDS MIDDLE SCHOOL	Mercer
21_1950_83	RICHARD C CROCKETT MIDDLE SCHOOL	Mercer
21_2280_75	TIMBERLANE MIDDLE SCHOOL	Mercer
21_2580_50	LAWRENCE MIDDLE SCHOOL	Mercer
21_2580_85	LAWRENCE INTERMEDIATE SCHOOL	Mercer
21_4255_85	J WITHERSPOON MIDDLE SCHOOL	Mercer
21_5210_100	GRACE A DUNN MIDDLE SCHOOL	Mercer
21_5715_140	COMMUNITY MIDDLE SCHOOL	Mercer
21_5715_150	MILLSTONE RIVER SCHOOL	Mercer
23_1170_56	HAMMARSKJOLD MIDDLE SCHOOL	Middlesex
23_1290_55	JOHN ADAMS MIDDLE SCHOOL	Middlesex
23_1290_57	HERBERT HOOVER MIDDLE SCHOOL	Middlesex
23_1290_60	THOMAS JEFFERSON MIDDLE SCHOOL	Middlesex
23_1290_63	WOODROW WILSON MIDDLE SCHOOL	Middlesex
23_2370_75	GRACE M BRECKWEDEL	Middlesex
23_3120_70	EDGAR MIDDLE SCHOOL	Middlesex
23_3140_85	VON E MAUGER MIDDLE SCHOOL	Middlesex
23_3220_50	JOYCE KILMER	Middlesex
23_3290_20	APPLEGARTH MIDDLE SCHOOL	Middlesex
23_3620_65	LINWOOD MIDDLE SCHOOL	Middlesex
23_3845_103	CARL SANDBURG MIDDLE SCHOOL	Middlesex
23_3845_110	JONAS SALK MIDDLE SCHOOL	Middlesex
23_4090_140	MC GINNIS MIDDLE SCHOOL	Middlesex

codistsch	School Name	County
23_4090_150	SAMUEL E SHULL MIDDLE SCHOOL	Middlesex
23_4130_105	MARTIN LUTHER KING	Middlesex
23_4130_53	CONACKAMACK MIDDLE SCHOOL	Middlesex
23_4130_55	QUIBBLETOWN MIDDLE SCHOOL	Middlesex
23_4130_57	THEODORE SCHOR MIDDLE SCHOOL	Middlesex
23_4130_60	ARBOR	Middlesex
23_4660_55	SAYREVILLE MIDDLE SCHOOL	Middlesex
23_4860_75	CROSSROADS SOUTH	Middlesex
23_4910_53	SOUTH PLAINFIELD MIDDLE SCHOOL	Middlesex
23_4920_55	SOUTH RIVER MIDDLE SCHOOL	Middlesex
23_4970_90	SPOTSWOOD MEMORIAL SCHOOL	Middlesex
23_5850_45	AVENEL MIDDLE SCHOOL	Middlesex
23_5850_60	COLONIA MIDDLE SCHOOL	Middlesex
23_5850_70	FORDS MIDDLE SCHOOL	Middlesex
23_5850_80	ISELIN MIDDLE SCHOOL	Middlesex
23_5850_90	WOODBRIDGE MIDDLE SCHOOL	Middlesex
25_100_70	ASBURY PARK MIDDLE SCHOOL	Monmouth
25_1260_70	MEMORIAL MIDDLE SCHOOL	Monmouth
25_1640_60	INTERMEDIATE	Monmouth
25_1660_23	CLIFTON T BARKALOW	Monmouth
25_1660_24	DWIGHT D EISENHOWER	Monmouth
25_2105_105	HAZLET MIDDLE SCHOOL	Monmouth
25_2230_30	WILLIAM SATZ INTERMEDIATE SCHOOL	Monmouth
25_2290_25	HOWELL TWP MIDDLE SCHOOL NORTH	Monmouth
25_2400_30	JOSEPH R BOLGER MIDDLE SCHOOL	Monmouth
25_2720_50	MARKHAM PLACE	Monmouth
25_2770_60	LONG BRANCH MIDDLE SCHOOL	Monmouth
25_2920_60	MANALAPAN ENGLISHTOWN MIDDLE SCHOOL	Monmouth
25_2920_75	PINE BROOK	Monmouth
25_3030_50	MARLBORO MIDDLE SCHOOL	Monmouth
25_3040_53	MATAWAN ABERDEEN MIDDLE SCHOOL	Monmouth
25_3160_55	BAYSHORE MIDDLE SCHOOL	Monmouth
25_3160_57	THOMPSON MIDDLE SCHOOL	Monmouth
25_3160_59	THORNE MIDDLE SCHOOL	Monmouth
25_3200_40	MILLSTONE TOWNSHIP MIDDLE SCHOOL	Monmouth
25_3510_55	NEPTUNE MIDDLE SCHOOL	Monmouth
25_3810_40	OCEAN TOWNSHIP INTERMEDIATE SCHOOL	Monmouth
25_3830_30	MAPLE PLACE	Monmouth
25_4360_60	RED BANK MIDDLE SCHOOL	Monmouth
25_4570_50	FORRESTDALE	Monmouth

codistsch	School Name	County
25_5185_70	TINTON FALLS	Monmouth
25_5420_75	INTERMEDIATE	Monmouth
25_5640_50	FRANK ANTONIDES	Monmouth
27_1110_65	DOVER MIDDLE	Morris
27_1190_50	EAST HANOVER MIDDLE SCHOOL	Morris
27_1530_30	RIDGEDALE	Morris
27_2000_40	MEMORIAL JUNIOR	Morris
27_2380_45	JEFFERSON TOWNSHIP MIDDLE SCHOOL	Morris
27_2460_65	PEARL R MILLER MIDDLE SCHOOL	Morris
27_2870_100	MADISON JR	Morris
27_3090_60	MOUNTAIN VIEW	Morris
27_3100_60	MENDHAM TOWNSHIP MIDDLE SCHOOL	Morris
27_3340_30	ROBERT R LAZAR MIDDLE SCHOOL	Morris
27_3385_75	FRELINGHUYSEN MIDDLE SCHOOL	Morris
27_3460_60	BRIARCLIFF	Morris
27_3950_55	BROOKLAWN MIDDLE SCHOOL	Morris
27_3950_60	CENTRAL MIDDLE SCHOOL	Morris
27_4000_30	CENTRAL MIDDLE SCHOOL	Morris
27_4080_80	PEQUANNOCK VALLEY MIDDLE	Morris
27_4330_75	RANDOLPH MIDDLE SCHOOL	Morris
27_4480_50	THOMAS JEFFERSON MIDDLE SCHOOL	Morris
27_4490_15	COPELAND MIDDLE SCHOOL	Morris
27_450_30	JOHN HILL	Morris
27_4560_55	EISENHOWER MIDDLE SCHOOL	Morris
27_4560_80	LINCOLN ROOSEVELT	Morris
27_5520_35	LONG VALLEY MIDDLE SCHOOL	Morris
27_5770_30	A C MAC KINNON MIDDLE SCHOOL	Morris
27_630_30	RICHARD BUTLER	Morris
27_785_30	CHATHAM MIDDLE SCHOOL	Morris
27_785_50	LAFAYETTE ELEM	Morris
27_820_20	BLACK RIVER MIDDLE SCHOOL	Morris
29_185_50	RUSSELL O BRACKMAN MIDDLE SCHOOL	Ocean
29_2360_48	CHRISTA MCAULIFFE MIDDLE SCHOOL	Ocean
29_2360_55	CARL W GOETZ MIDDLE SCHOOL	Ocean
29_2520_83	LAKEWOOD MIDDLE SCHOOL	Ocean
29_2940_45	MANCHESTER TOWNSHIP MIDDLE SCHOOL	Ocean
29_3820_30	FREDERIC A PRIFF ELEM	Ocean
29_4210_50	MEMORIAL MIDDLE SCHOOL	Ocean
29_4950_60	SOUTHERN REGIONAL MIDDLE SCHOOL	Ocean
29_5020_70	STAFFORD INTERMEDIATE SCHOOL	Ocean

codistsch	School Name	County
29_5190_60	TOMS RIVER INTERMEDIATE EAST	Ocean
29_5190_63	TOMS RIVER INTERMEDIATE NORTH	Ocean
29_530_43	LAKE RIVIERA MIDDLE SCHOOL	Ocean
29_530_90	VETERANS MEMORIAL MIDDLE SCHOOL	Ocean
29_770_50	CENTRAL REGIONAL MIDDLE SCHOOL	Ocean
31_2100_70	LINCOLN MIDDLE SCHOOL	Passaic
31_2700_50	NUMBER 1	Passaic
31_3640_50	HIGH MOUNTAIN	Passaic
31_3970_95	NUMBER 4 LINCOLN	Passaic
31_4010_110	NUMBER 7	Passaic
31_4230_55	LAKESIDE	Passaic
31_4400_50	ELEANOR G HEWITT	Passaic
31_4400_53	MARTIN J RYERSON	Passaic
31_5570_145	SCHUYLER COLFAX MIDDLE SCHOOL	Passaic
31_5570_83	GEORGE WASHINGTON	Passaic
31_5650_55	MACOPIN	Passaic
31_5690_70	MEMORIAL	Passaic
31_900_35	CHRISTOPHER COLUMBUS MIDDLE SCHOOL	Passaic
31_900_70	WOODROW WILSON MIDDLE SCHOOL	Passaic
33_4070_105	PENNS GROVE MIDDLE SCHOOL	Salem
33_4070_80	PAUL W CARLETON	Salem
33_4075_55	PENNSVILLE MIDDLE SCHOOL	Salem
33_4150_70	PITTSGROVE TOWNSHIP MIDDLE SCHOOL	Salem
33_5910_70	WOODSTOWN MIDDLE SCHOOL	Salem
35_1610_160	FRANKLIN MIDDLE SCHOOL	Somerset
35_2170_35	HILLSBOROUGH MIDDLE	Somerset
35_3000_65	ALEXANDER BATCHO INTERMEDIATE	Somerset
35_3320_70	MONTGOMERY UPPER MIDDLE SCHOOL	Somerset
35_350_55	WILLIAM ANNIN MIDDLE SCHOOL	Somerset
35_3670_80	SOMERSET	Somerset
35_4820_55	SOMERVILLE MIDDLE SCHOOL	Somerset
35_510_20	CENTRAL	Somerset
35_5470_33	MIDDLE	Somerset
35_5540_50	VALLEY VIEW	Somerset
35_555_10	BRIDGEWATER RARITN MIDDLE SCHOOL	Somerset
35_555_48	EISENHOWER	Somerset
35_555_65	HILLSIDE	Somerset
37_2240_40	HOPATCONG MIDDLE SCHOOL	Sussex
37_3590_60	HALSTED ST	Sussex
37_5100_60	SUSSEX MIDDLE SCHOOL	Sussex

codistsch	**School Name**	**County**
37_5360_25	GLEN MEADOW	Sussex
37_5360_30	LOUNSBERRY HOLLOW	Sussex
39_2190_85	WALTER O KRUMBIEGEL	Union
39_2660_60	MYLES J MCMANUS MIDDLE SCHOOL	Union
39_2660_70	JOSEPH E SOEHL MIDDLE SCHOOL	Union
39_310_30	COLUMBIA	Union
39_3560_80	NEW PROVIDENCE MIDDLE SCHOOL	Union
39_4160_60	HUBBARD	Union
39_4160_70	MAXSON	Union
39_4290_60	RAHWAY MIDDLE SCHOOL	Union
39_4540_40	LEONARD V MOORE	Union
39_4540_60	WILDAY	Union
39_4550_85	ROSELLE PARK MIDDLE SCHOOL	Union
39_4670_60	PARK MIDDLE SCHOOL	Union
39_4670_65	TERRILL MIDDLE SCHOOL	Union
39_5000_60	FLORENCE M GAUDINEER	Union
39_5090_60	L C JOHNSON SUMMIT MIDDLE SCHOOL	Union
39_5290_60	BURNET MIDDLE SCHOOL	Union
39_5290_70	KAWAMEEH MIDDLE SCHOOL	Union
39_5290_85	CENTRAL FIVE JEFFERSON	Union
39_5730_60	ROOSEVELT INTERMEDIATE SCHOOL	Union
39_850_35	CARL H KUMPF	Union
41_1870_60	HACKETTSTOWN MIDDLE SCHOOL	Warren
41_4100_110	PHILLIPSBURG MIDDLE SCHOOL	Warren
41_5465_60	WARREN HILLS REGIONAL MIDDLE SCHOOL	Warren

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