Administrative Organizational Structures: Turbulence and Stability in Public Schools

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ABSTRACT

This quantitative study analyzed the relationship between district characteristics, the educational environment and the administrative organizational structure in public schools in the Commonwealth of Pennsylvania between the 1996-1997 school year and the 2006-2007. More specifically, this study conducted an assessment of the changes and stability that have occurred in the Commonwealth's 501 public school district's administrative positions and structures and determined the trends or relationships that exist between the administrative structure in comparison with district characteristics and the educational environment.

Pennsylvania public schools have increased in total number of administrators across the Commonwealth from 5,734 in the 1996-97 school year (Database 1996-97) to 7,348 administrators in the 2006-07 school year (Database 2006-07). This is an increase of 1,614 administrators across the 501 public school districts. These increases have not been consistent from one year to another or across districts. Little is known concerning the relationship between internal district characteristics, the external educational environment and administrative changes or stability. In addition, little is known about that combination of characteristics that have allowed some districts to remain stable in a changing educational environment. In an effort to provide more information on these issues, this quantitative study analyzed public school administrative positions and structures in the 501 Pennsylvania school districts over time in relation to the district's characteristics and educational environment. By assessing combinations of district characteristics and the educational environment, this study sought to find similarities and

differences in how districts administratively respond to forces and pressures on the organization.

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CHAPTER 1

INTRODUCTION

This quantitative study examined the relationship between internal district characteristics and changes in the external educational environment that led to administrative organizational structural change by identifying the types of positions that have changed and remained stable in the Commonwealth of Pennsylvania's 501 public school districts between the 1996-1997 school year and the 2006-2007 school year. By examining these data, this study identified trends and relationships between district characteristics, the educational environment and administrative changes in the 501 public school districts in the Commonwealth of Pennsylvania.

This study is broken into five chapters including the introduction, literature review, methodology, data analysis and conclusion. In the introductory section, the subsections begin with a statement of the problem the research sought to address. The following subsections include the purpose of the study, the research questions and related definitions. Following the definitions is a subsection of the delimitations and limitations of the study. The potential significance of the research is in the concluding subsection in the first chapter. The second chapter, the literature review, includes subsections on the theoretical base for this research and a review of related literature. The third chapter, the methodology and procedure chapter, includes the researcher's assumptions and rationale for a quantitative design, and a discussion of the role of the researcher that includes background knowledge of the phenomena, biases held by the researcher and the means of overcoming these biases. The methodology chapter also includes the defined parameters

for the population and the sample as well as the means of data collection, data analysis, and methods of verification. The final section of the methodology and procedure chapter speculated the anticipated outcomes of the study and the relation of these outcomes to the theories and literature. The data analysis chapter provides a detailed analysis of the inter-relationships between administration size, administrator characteristics, district characteristics and characteristics of the local community. In addition, an analysis was conducted concerning position stability within administrative structures and compared with legislation that occurred to identify correlations between new education legislation and the response in public school district administrative structures. The final chapter, conclusions, reviews the findings of the research, how these findings contribute to the literature and identifies areas for further research.

Statement of the Problem

The pressures on administrative organizational structures in public education come from two primary sources; change within a district's characteristics and change in the larger education environment. The educational environment has changed with new legislation, rules and regulations with which public schools must comply. While the districts are functioning under the same environmental influences, each district has addressed these issues by making different types of administrative change. In addition, each district has its own characteristics in terms of community type, wealth, size, socio-economic status of students, attendance and graduation rates, student achievement, administrative educational levels, salaries and tenure. Between the 1996-1997 school year and the 2006-2007 school year the size of public school administrations have increased in some districts, decreased in some districts, fluctuated in some districts and remained

stable in others. While these changes were observed over the time period, there is a gap in the literature concerning the relationship between the internal characteristics of the district, the changing educational environment and the corresponding change or stability of the public school district administrative structure. It was not clear if administrative structural changes were the result of individual district characteristics or if they were alternative solutions to the pressures and forces under which all districts were working.

Purpose of the Study

This study illuminates the trends and relationships between internal district characteristics and public school administration on one hand and the education environment and administrative change or stability in the public school districts in the Commonwealth of Pennsylvania on the other. More specifically, this study identifies significant relationships between the administrator, district and community characteristics in relation to the size of the administration, and the changes in the educational environment that was suggestive of cause with administrative structural change or stability between 1996-1997 and 2006-2007 school years in the 501 school districts in the Commonwealth of Pennsylvania. The research identified administrator, district and community characteristics to determine trends and significant relationships as they relate to administration size. In addition, this research identified trends and disruptions in the stability and structure of administrations from 1996-97 to 2006-07 as the result of environmental change events.

The research contributes to the literature concerning public school administrative structures in the Commonwealth of Pennsylvania. More specifically, this study was interested in the changes and stability of administrative positions and structures over time

with a goal of identifying trends and relationships between the administrator, district, and community characteristics in relation to the administration structure and size, as well as the educational environment and the corresponding changes or stability that occurred in administrative positions and structures. This study provides information that has not been addressed in the literature pertaining to the relationship between administrator, district, and community characteristics and the administration structure and size as well as the impact of the educational environment on administrative positions and structures.

Research Questions

1. What trends exist between the size of a district's administration and district characteristics?
2. What trends exist between environmental change events and district administrative structure and size?

Definitions

Aid Ratio: An indicator of relative wealth of a district that ranges during the time period from .1500, indicating the highest level of relative wealth, to .8597, indicating the lowest level of relative wealth.

Administrative Increases: Increases in the number of administrators in the district.

Administrative Decreases: Decreases in the number of administrators in the district.

Administrative Fluctuation: Districts that have the number and types of administrators in the district increase and decrease from year to year across the timeframe.

Average Daily Membership: An indicator of student size based on the daily attendance rate of students.

Average Total Years of Service: This is a measurement of the total years of service in education of an administrator. This measurement does not distinguish between years of service in public or private educational institutions nor does it distinguish between service inside or outside of Pennsylvania.

Average Unit Years of Service: This is a measurement of the years of service in the same district. This measurement does not distinguish between different positions held within the same educational agency.

Change Event: An external change such as new legislation or requirements that was enacted at a specific point in time.

Education Level: This is a measurement of the highest degree obtained by an administrator.

School Climate: "the perception someone has about the psychological and institutional attributes of an organization or those psychological and institutional attributes which give an organization its personality" (Bulach, Malone & Castleman, 1995).

Stable Administrative Structure: No changes in actual number of administrators in the district.

Delimitations and Limitations of the Study

A limitation of this study was the potential of missing data. While this was assumed to be minimal if at all due to the inclusion of all reported data, there is always the possibility for some non-reported administrative positions. Another limitation of this study is intergroup variability. It is recognized that identified groups for purposes of comparison and to identify relationships had great levels of intergroup variability.

This study was included the 501 public school districts in the Commonwealth of Pennsylvania. More specifically, it includes all reported administrative positions in these 501 districts between 1996-97 school year and the 2006-07 school year. While this population allowed for some trends to be identified, the results of this study are limited to what actually happened in the administrative structures in the 501 public school districts in Pennsylvania during the identified time period. In addition, it should be noted that one of these districts does not have an administration or students, but rather works with a neighboring district. As a result, all counts and analyses include the administrations in

the 500 districts unless otherwise noted and explained. This scope is a delimitation due to the scale of the study. As a result, some generalizations could be made beyond Pennsylvania, however, one should The results of the study cannot be generalized to districts outside of Pennsylvania or possible outside of the time period as a result the levels of significance.

Another delimitation of this research is it is a quantitative study only and is not supplemented with qualitative data. While statistical relationships were analyzed, the background and the qualitative data that would have provided a more complete picture were not part of this study.

Significance of the Study

There was an increase of 1,614 administrators in public schools in the Commonwealth of Pennsylvania between 1996 and 2007 (Database 1996-97 through 2006-07). While the overall number of administrators increased, certain types of positions increased in numbers, other positions remained relatively stable and some positions decreased during this time period across the Commonwealth. While there were minimal fluctuations, the following positions remained relatively stable in actual numbers within the Commonwealth of Pennsylvania between the 1996-1997 school year and the 2006-2007: Superintendents, Elementary School Principals, Assistant to the Superintendent for Business, and Assistant to the Superintendent for Curriculum and Instruction (Database 1996-97 through 2006-07). While there were fluctuations from one year to the next, the following positions increased in actual numbers within the Commonwealth of Pennsylvania between the 1996-1997 school year and the 2006-2007: Assistant Superintendents, Assistant Elementary Principals, Assistant High School

Principals, Middle School Principals, Assistant Middle School Principals, Athletic Directors, Supervisors, Business Managers, Directors of Management Information Systems, Directors of Personnel, Coordinators of Food Service, and Computer Technicians. (Database 1996-97 through 2006-07). The only position that decreased between 1996-97 with 930 positions and 2006-07 with 795 positions in the Commonwealth was the position of High School Principal (Database 1996-97 through 2006-07).

There was little information available concerning the internal characteristics of districts, what significant relationships or trends existed between specific characteristics or combinations of characteristics and the composition of the administration, as well as the corresponding change or stability of the administrative structure. In addition, districts responded to environmental pressures and changing district characteristics with varied administrative solutions. As a result, this study illuminates how districts responded in the structure of their administration to environmental change events and identifies if the change event produced similar changes across districts with varied internal characteristics.

Theoretical Base

The theoretical foundation for the study included Organization and Management Theories as well as Turbulence Theory. The researcher chose Organizational Theories as the broad based theory for the study because there has historically been a direct link between Organizational or Management Theories and educational administration. More specifically, educational administration was initiated and developed out of Management Theories. In addition educational administration has progressed with a close link to

popular Management Theories. As a result, this was a natural choice for a broad based theory to help understand and ground what has happened in educational administrative practice.

The second theory chosen by the researcher to help explain what happened was Turbulence Theory. Turbulence Theory provides insights as to the impact of change on organizations and provided a means to compare the level of turbulence experienced by districts. Turbulence Theory provides a turbulence gauge that allows for comparison between districts that were experiencing administrative increases, decreases, fluctuations and stability. The level of turbulence reflects the amount of change an organization or school district has absorbed within the leadership structure without moving into a state of chaos. The pairing of these two theories to develop the theoretical base for this study allowed for an understanding of the larger and historical context that impacted administrations as well as a more specific application to an individual organization or district through Turbulence Theory.

CHAPTER 2

REVIEW OF THE LITERATURE

Public school administrations have undergone major change and little is known about the interplay between district characteristics, the larger educational environment and the structure of the administrative team in regards to the positions filled and changes that occur over time. In addition, public schools progressively filled more extensive and comprehensive roles far beyond education and these expectations through new legislation and litigation continue to grow. With an historical foundation in Management Theory, how are public school administrative teams responding to the increasing demands to fill more varied roles and provide more extensive services? What environmental factors and district characteristics have a statistically significant relationship with administrative structural increases, decreases, fluctuation and stability in public school districts? How strong is the relationship or is there a relationship between district characteristics and the increase, decrease, fluctuation or stability of administrative positions collectively? Is there a relationship between district characteristics and change or stability of certain administrative positions? What is the impact of change in the external educational environment on administrative structures (increase, decrease, no change) and what types of environmental change have had the most impact on administrative structures?

History

Educational administration developed as the result of the increasing size, formality and professionalism of the American educational system in response to societal changes. To frame the development of educational administration, the following historical overview highlighted milestones in the field that contributed to current practice.

In addition, these milestones are linked with the prevailing organizational theories over time focusing on the close relationship between management theory and educational administration and the impact of management theory and practice on public school administration. This is followed by a review of the current educational environment, related studies, summative information concerning administrators in the Commonwealth of Pennsylvania as well as the advantages and disadvantages of recent developments in educational administrative structures in the commonwealth between the 1996-1997 and 2006-07 school years.

During the Colonial Period, the education of American children was restricted to religious teachings (Kizer). Dame or elementary schools existed to teach young boys limited math and reading skills. In addition, apprenticeships under the guidance of master craftsmen were a means for young men to learn a trade (Kizer). The Massachusetts Law of 1642 required parents and masters to see that the children under their guidance knew religious principles and laws of the new land. While not directly concerned with formal education, the only means of ensuring the fulfillment of this law was to teach children basic literacy skills (Matzat). This was followed by a law that created public education.

The establishment of public schools began in 1647 with the Act of Massachusetts General Court that "required towns to establish schools that would be under the control of the towns" (Kinbrough & Nunnery, 1988). More specifically, this law mandated localities with a minimum of fifty families employ a schoolmaster to teach the local children to read and write (Matzat). The response to this law was the establishment of the one room school house that persisted as the model form of schooling through the nineteenth-century (Tyack & Hansot, 1982). The limited professionalism in the field of education at

this time was widespread due to local control without strong oversight or mechanisms to maintain a balance with local politics. In addition, many of these school houses maintained an informal structure with all students taught by one teacher. The informal structure of the one room school house did not meet the demands for education in growing areas. More specifically, urban areas were undergoing growth that required additional organization and formal leadership. This led to the establishment of the position of Superintendent of Schools. "The district superintendent began as a hired agent of the school board in a few cities in the 1830s, and the practice of hiring such administrators rapidly spread across the nation in the most sizeable communities after mid-century" (Tyack & Hansot, 1982, p. 95). This practice became more common as public education changed with new federal leadership in education that supported and believed that to have a participating citizenship, there needed to be a general core knowledge base that could be provided through a common education. This created the means to establish a more formalized system of education. One of these leaders, Horace Mann, was appointed to the position of Secretary of Education on April 20, 1837. Mann was an advocate of the Common School as a means for equalization of opportunity for the poor. However, there were other obstacles inhibiting the common schools from equalizing social classes as desired.

Despite the desire to provide all children with a public education, child labor was flourishing. While these children were allowed to work and families needed the income, these children did not have the choice of attending school. In an effort to address the issues related to child labor conditions, the first compulsory attendance law was enacted in 1852 by the Commonwealth of Massachusetts. Under this law, age parameters and the

required annual schooling period was established for the first time (Grocke). Approximately twenty years later, this law was revised. "The age limit was reduced to twelve but the annual attendance was increased to twenty weeks per year. Additionally, a semblance of enforcement was established by forming jurisdictions for prosecution and the hiring of truant officers to check absences" (Grocke). This law created a greater need for the development of a formal organization by establishing jurisdictions as well as a need for greater administrative oversight to ensure compliance with the revised compulsory attendance law. Despite the strengthening of related laws, child labor continued unchecked for some time. Pennsylvania was noted as having a significant population of child laborers in spite of the new developments.

> As early as 1890 Florence Kelley wrote that in the state '...child labor flourishes almost unchecked.' Later, in 1907, despite the progress that had been made in legislative protection for children in the meantime, she was still condemning the state as one in which conditions are in some respects the worst to be found (Speakman, 2002, p. 266).

Despite the lack of progress in Pennsylvania, this was not the case in the nation. "Between 1880 and 1930, the occupation rate of children age 10 to 15 fell by over 75%" (Moehling, 1999, p. 73). As a result, these children were rapidly filling public schools resulting in a dramatic increase in school populations in a short period of time. Leadership interest in educating all youth accompanied by child labor and compulsory attendance laws changed American schools most notably in size, resulting in the need for greater organization and corresponding leadership. This forced schools to reorganize to meet the increased demand and to respond to growing societal concerns. When the need and demand for educational administration surfaced as a societal concern, the field was considered to be aligned with management more than education. Simultaneously and

reflective of the growth in schools, industry had experienced a large growth in size and complexity.

> The growth of large industries and the emergence of the modern corporation as the dominant image of the business firm by the 1870s convinced industrial leaders that new forms of administrative organization were required to tighten and centralize control over what, in some instances, had become unmanageable complex and highly diverse enterprises (Campbell, Fleming, & Bennion, 1987, p. 19-20).

Paralleling the complexity in corporations, schools were experiencing similar changes.

> Swelling school populations, great expansions in education services and in the curriculum at all levels, a boom in school construction, an increasingly diverse educational clientele, and the supervision of an enormously enlarged teaching body were all factors posing new and onerous problems for school managers in the first years of the new century (Campbell, Fleming, & Bennion, 1987, p. 28).

This rapid growth and increasing complexity led to the adoption of popular management theory into education. While the most popular work in this field did not become prevalent until the early 1900s, the link between industrial management and educational management was established early. The position of superintendent was at this time focused on management of the organization which led to incumbents serving as managers in contrast to educators. This created a link between management of industrial organizations and management of school districts that would prove to be influential in the early twentieth century.

Scientific Management

Scientific Management was developed in the early twentieth century and became a popular theory of management in private industry. This approach was championed by Frederick Taylor who completed a series of time and motion studies to determine the most efficient means of completing a task.

At the heart of Scientific Management was a desire to make operations more efficient and in turn, cost efficient. Sentiments of Taylor's division of labor prevailed. "For school administrators, particularly, Taylor's principles of scientific management held special appeal" (Campbell, Fleming, & Bennion, 1987, p. 27). While this research was primarily completed with workers in the manufacturing field, the effects of were widespread.

Under Taylor's Scientific Management,

> The school was viewed essentially as a workplace and learning was perceived in terms of productivity. The amount of children that were immigrating to the United States with their families increased as well. Elwood Cubberly, a turn-of the century historian, stated that schools should be like factories. Referring to the teachers as the factory workers and the students as the raw material to be turned into the product which was to meet the specifications of the needs of the 20th century (Miller).

Beyond the early application, some ideas developed under Scientific Management theories have been maintained in the US educational system. One approach toward integrating Scientific Management into education is still present in current schools is the Platoon System. The Platoon System, "was designed to increase efficiency in the use of space within a school building by shifting students from classrooms to other indoor space, such as an auditorium, and to the playground in a systematic fashion" (Kliebard, 2004, p. 83). Essentially, developers of the Platoon System (Willard Wirt – Superintendent of the Gary, Indiana School System) figured under normal operations, approximately fifty percent of the physical plant was utilized during the school day. As a result, Willard Wirt developed a concept led by the "educational engineer" that increased use of the physical plant to one hundred percent efficiency (Kliebard, 2004, p. 83). The impact of the platoon system is still seen in secondary schools across the nation.

With increasing numbers of students due to immigration, the need for more school personnel became essential to meeting the demands. School executives turned to teachers to assist with administrative duties (Schroerder). However, there were concerns with teachers managing the organization due to the clear split between educators and management. "Educational administration was too important to be left to teachers to manage. People felt that leadership needed to be centralized" (Schroeder). Similar to the centralization of administration in corporations, education followed and central offices began to flourish in some of the largest districts in the nation. This centralization of administrative function in conjunction with the increasing complexity of the public school as an organization contributed to a desire for greater professionalism and reemphasized the desire for separation of labor and management. "Educational leaders in the Northeast were eager to improve regularity of attendance, lengthen the school term, professionalize teaching, improve school houses, introduce structural innovations like the graded schools and improve curriculum by standardizing textbooks and introducing new subjects and methods" (Tyack & Hansot, 1982, p. 31). This desire for greater professionalism coupled with the continued growth experienced in public schools resulted in a continued emphasis on Scientific Management models in schools.

In the 1920s, industry management and shortly thereafter school management began to shift from an emphasis on the ideas of Scientific Management and the division of labor to a human relations approach.

Human Relations Movement

The Human Relations Movement shifted the focus from management control to the employee. This approach, which started with the Hawthorne studies, had a strong

influence on organizational administration. The Hawthorne Studies, led by Elton Mayo and his associates included a number of studies that focused on the work environment and the impact of the environment on productivity. In addition, the studies assessed what workers did and did not like about their work environment (Lunenberg and Ornstein, 2004, p. 8). This approach "focused on the importance of the attitudes and feelings of workers" (Palestini, 1999, p. 3) and recognized that "informal roles and norms influenced performance" (Palestini, 1999, p. 3). The Human Relations movement led to the idea of democratic school administration. During this movement participatory, teacher – administrator relationships were highlighted as an ideal. Ultimately, the Human Relations movement encouraged a participative relationship between administrators, teachers and students in contrast to the prior emphasis on management control. Despite this new recognition of the individual in the organization, the Human Relations movement by some accounts did not have the same organization-wide influence on school administration as Scientific Management.

> In U.S. Education, the human relations movement had relatively little impact on school district administrators (for example, superintendent of schools), as compared with rather a substantial impact upon supervisory levels (for example, supervisors, elementary principals). Superintendents, in general, continued to emphasize such classical concepts as hierarchical control, authority, and formal organization, whereas supervisors emphasized to a much greater extent such human relations concepts as morale, group cohesiveness, collaboration, and the dynamics of informal organization (Owens, 1998, p. 18).

Recognizing differing accounts and different levels of management acceptance of the shift away from authoritative management, the Human Relations movement provided a number of new concepts for management to utilize which had a lasting impact on management practices. "Among them were (1) morale, (2) group dynamics, (3) democratic supervision, (4) personnel relations, and (5) behavioral concepts of

motivation" (Lunenburg & Ornstein, 2004, p. 15). Many of these concepts are present in different forms in schools today. As the result of the Human Relations movement, management recognized the need to understand both individual and group behavior (Lunenburg & Ornstein, 2004).

Despite the management move toward a concern with employee satisfaction and the work environment, public schools underwent a widespread consolidation that was aligned with the prior efficiency movement. In contrast to industry, schools continued in student growth and complexity patterns. In part, this is due to the consolidation of schools that led to continuously increasing school populations throughout the twentieth century. "In the 1930s and 1940s, the organizational structures developed for cities began to be applied outside urban areas. Numerous studies had concluded that consolidation was necessary for modern instruction and efficient administration" (Strang, 1987, p. 355). As a result, the number of schools decreased while the number of students enrolled continued to increase. This is evidenced by the decline in number of schools that were required to serve a growing school age population. "In 1931-32, the first year that adequate information was available, there were 127,531 local school districts in the United States; in 1945-46, there were 101,382; in 1959-60, 40,520; in 1975-76, 16,376; and in 1985-86, 15,746" (Kinbrough & Nunnery, 1988). As indicated by the decline in schools, consolidation significantly changed the organization and structure of schools. "Over the period 1938-1980, the local administrative units of American education were transformed from small and informal community arrangements into large, professionally run bureaucratic organizations" (Strang, 1987, p. 352). The impact was significant. "Over 100,000 school districts were eliminated between 1940 and 1980. The average

number of districts per state declined eightfold from 2,437 to 318, while the number of pupils per district increased from 216 to 2,646" (Strang, 1987, p. 352). While there was certainly resistance and some of the repercussions can still be observed today, consolidation did reach some of the intended goals. "Consolidation is thought to bring about more effective schools by increasing the tax base, quality of professional personnel, breadth of educational programs, special services, and transportation facilities and by reducing overall educational costs per student" (Lunenberg and Ornstein, 2004, p. 323). However, there is continued debate concerning the most cost efficient size of a school district. With the continued demand for greater efficiency, many small, rural and informal schools were forced to consolidate.

During this time of such extreme change, a number of management theories had become popular; however, they had a limited influence on educational administration practices. This is, in part, assumed to be the result of the long term growth patterns experienced in schools as compared to greater levels of stability in corporations that allowed for the implementation of new styles of management in organizations that could withstand an increase in the level of turbulence. While the direct impacts of the popular management thought may not have had an immediate and widespread impact on public school management, each of these movements have impacted current operations.

However, efforts at developing democratic school administration developed before the 1940s. Koopman, Miel and Misner published *Democracy in School Administration* in 1943. This book detailed how schools could translate democratic ideals into practice in public schools. In addition, it recognized the important role of the teacher within the school organization. "An administrative organization will be more

functional if it assumes that the faculty is a true social unit and the central unit in the total educational organization" (Koopman, Miel & Misner, 1943, p. 76-77). In addition, this text recognized prior efforts at democratic educational leadership. "There have been sporadic evidences in the literature of the past two decades that there was concern here and there with making administration more democratic" (Koopman, Miel & Misner, 1943, p. 5). This would indicate some documentation of efforts at democratic administration in the 1920s. In addition, this text detailed necessary components toward including democratic practices in public education while recognizing the history and development of the field and the ties to business and industry.

Group Dynamics

The group dynamics school of thought that came to the forefront in the 1940s "encouraged individual participation in decision-making" (Palestini, 1999, p. 3) and recognized the "impact of the work group on performance" (Palestini, 1999, p. 3). While management theories concerning group dynamics and motivational concepts had been established and confirmed by a number of studies, these ideas, similar to those of the Human Relations movement were not readily adopted. The private sector was slow to adopt Group Dynamics theories and education did not embrace such concepts until they had been tested. Group Dynamics "emerged in the 1980s as the central idea in the transformation of organization life and leadership in U.S. business and industry and, eventually, education (Owens, 1998, p. 125-126). There was an approximate 40 year delay from the development of Group Dynamics theories until implementation in the 1980s. In addition, education delayed acceptance until after the private sector had adopted these practices. Educational administration did not embrace the ideas of group

dynamics and motivational concepts as related to the work groups until well after the theories had been thoroughly developed and confirmed over many years.

Decision Making

Decision-making and the idea of "satisficing" or recognizing "that organizations can never be fully rational and thus have to be content with 'satisficing' " (Morgan, 1997, p. 79) was developed as a theory in the 1950s by Herbert Simon. A disconnect between the researchers studying decision making as compared to practicing administrations has been identified. Simplified, the essence of this disconnect lies in the approach of researchers who assumed time to logically think through issues and make a logical, linear decision based on the options available and time to gather all necessary information pertaining to the situation. However, in practice, "it has become apparent that many of our most trenchant educational problems are so ambiguous, multifaceted, and complex that they simply cannot be reduced to algorithms" (Owens, 1998, p. 252). Due to this disconnect, administrative decision making theories, with time, have been recognized as having a number of limitations in practice. "Since the dramatic rise of awareness by Americans in the 1970s that both their industrial and educational organizations were faltering in competition with others in the world, there has been a marked trend toward the more effective use of participative decision-making methods" (Owens, 1998, p. 252). These participative decision-making practices are present formally and informally, in most if not all public school systems. As a result, organizational decision making theories have persisted in education while many approaches to management have passed.

Sociotechnical Organization

A focus on decision making in management theory was followed by a sociotechnical school of thought in the 1960s that "called for considering technology and work groups when understanding a work system" (Palestini, 1999, p. 3). After several studies, "researchers concluded that technological changes must be made in conjunction with a strong social system and that both social and technical/structural aspects of jobs must be considered simultaneously" (Palestini, 1999, p. 9). This recognition has practical application in educational systems through staff development. With rapidly changing technologies, this has become more important with time and developed a need for administrators of technology departments to implement, oversee and integrate technologies with the curriculum. In application today, a number of technologies have been recently developed to serve as tools to enhance instruction and educational programs. To properly integrate such technologies, a district must first consider the necessary resources and costs (fiscal, human, time, maintenance) as compared with the intangible or anecdotal benefits.

Systems Theory

Systems theory, also of importance in the 1960s, emphasized that "an organization must be studied as a whole, taking into consideration the interrelationships among its parts and its relationship with the external environment" (Morgan, 1997, p. 32). Systems theory, as applied to public education, highlights the need to account for the many stakeholders and contributors to the system. Of particular interest to this research is the shift in influence in systems theory. "The early development of systems theory was very much influenced by perspectives emphasizing equilibrium and homeostasis. In

recent years, however, much more attention has been devoted to the analysis of instability" (Morgan, 387, 1997, p. 387). This is quite appropriate for current educational administrative structures and will be explored further in the summative administrative data.

Contingency Theory

By the 1980s, Contingency Theory was developed, placing an emphasis on "the fit between organizational processes and characteristics of the situation" (Palestini, 1999, p. 3) and "called for fitting the organization's structure to various contingencies" (Palestini, 1999, p. 3). This is a difficult task to fulfill as the result of numerous opposing positions in public education. Peter M. Senge referred to this as the Fifth Discipline "that integrates the disciplines, fusing them into a coherent body of theory and practice" (Senge, 2006, p. 12). Senge recognizes the importance of all of the disciplines of an organization, "but system thinking also needs the disciplines of building a shared vision, mental models, team learning, and personal mastery to reach its potential" (Senge, 2006, p. 12). As applied to a specific leader or administrator and "according to the theory, the effectiveness of a leader in achieving high group performance is contingent on the leader's motivational system and the degree to which the leader controls and influences the situation" (Lunenburg & Ornstein, 2004, p. 155). These ideas highlight the volatility of administrative positions in today's complex educational environment in which there are numerous stakeholder groups, often with conflicting interests that look to the administration to provide desired leadership aligned with the group's interests.

The overview of management theories highlights aspects with a direct application and lasting impact on America's public schools as well as the theories that have proven to

be less applicable with time. What is evidenced through this brief history is the direct connection between management theories and practices and educational administration. With the relationship explored, it is worthwhile to briefly review the role of the school board. This is followed by a review of current related research and an overview concerning Pennsylvania's administrative structures and the educational environment.

School Boards

A public school stakeholder group that must be recognized when discussing administrative and governance structures is the school board. The establishment of public schools came with a local level oversight through the Board of School Directors or School Board. "School board members, as agents of the state who are selected locally, find that they must, on the one hand, carry out the mandates of the state and, on the other hand, try to be responsive to the desires of the local people" (Kinbrough & Nunnery, 1988). The strength of local school boards was established early and maintained by the continued practice of locally elected members of the board. While the structure of the school board varies from state to state, "most local school boards have five to nine members" (Kinbrough & Nunnery, 1988). In Pennsylvania, each school board is comprised of nine members. "In practically all states the law provides that local board members serve for a specified period of time. The usual term is two to six years. Most frequently members of a board serve overlapping terms" (Kinbrough & Nunnery, 1988). Similar to other states, Pennsylvania school board members are elected to four year terms that are overlapping. These shifts in governance can certainly impact the administrative structure of the district based on the positions of the current board members. With

potential shifts in the board every two years, an expectation of administration stability may be unrealistic.

Current Studies

This section reviews current studies that analyzed data similar to this study; however, the focus of these studies was slightly different but worth noting to highlight how this study contributes to the current literature. Many of these studies were commissioned to look at a specific issue within a context, often at the state level.

Size and Efficiency

Among these studies, some relevant findings were identified. For example, in regards to the per pupil costs, a report prepared by the Arizona Legislative Council titled "A Report to the School District Redistricting Commission," the per pupil costs when plotted against number of pupils develops a "U Shape." In other words, per pupil costs are high in small districts, are lower in medium sized districts and again increase in some of the largest districts in the nation. While recognizing a number of other factors could be contributing to the increasing costs, when considering this finding in relation to administration size a potentially important relationship was identified. Most generally, it was assumed that the smallest districts have the fewest administrators that perform the most varied roles in less volume. As the size of the district increased, the number of administrators are assumed to increase along with the level of specialization and an increase in the volume of work. However, the "U Shape" in regards to cost (and possibly the size of the administration) may suggest that the efficiencies of size decline after a certain point. This same trend was also identified by others; however, the point at which costs begin to increase varies by report. "Diseconomies of size begin to occur as district

size exceeds 6,000 students" (Schmidt & Schlottmann, p. 11). In contrast to 6,000 students, another study sited 25,000. "School districts with fewer than 2,500 students had the greatest per pupil expenditures. Districts with between 2,500 and 25,000 students were most efficient. Per student costs began increasing again for districts with more than 25,000 students" (Council, 2006, p. 10). While not directly addressed, such data may suggest there is also a size range per an administration that is most efficient.

Size, Student Achievement and Socio-economic Status

Aligned with the studies about size and efficiency from an educational cost perspective are studies that have been completed concerning size and achievement. "An increase in competition to some threshold level appears to improve efficiency and student achievement" (Council, 2006, p. 33). However, these findings appear to vary by school level. "The size of a school district had no impact on student achievement at the elementary level, although low SES middle and high school students performed better in smaller school districts" (Council, 2006, p. I). In addition, the findings were not consistent concerning student achievement levels and other student characteristics in relation to school size. An example of this was students with a low socio-economic status. "Low SES students perform better in smaller districts than in larger districts. High SES students perform better in larger districts. However, not all the studies found this relationship" (Council, 2006, p. 33). More specifically, "There is a negative relationship between SES and student achievement. Small school districts help low SES students break this relationship, while large districts help high-SES student achievement" (Council, 2006, p. I). This same finding has been supported by other researchers. "Research on school size has found socioeconomic status to be the confounding variable

in the size/achievement equation, noting that as school size increases, achievement levels for schools with less advantaged students decreases" (Abbott, Joireman, & Stroh, 2002, p. 3). Beyond student performance defined by standardized tests, school size has been tied to graduation rates. "Decreasing the size of school districts has a substantial, statistically significant positive effect on graduation rates" (Schmidt & Schlottmann, 9). The studies relating to student achievement and size have most often included other variables to more directly link the data with a student group.

School Climate

A study of district characteristics and school climate had a number of findings that concluded some of the negative relationships can be overcome. "The relationship between school climate and achievement is stronger than the relationship between achievement and the socioeconomic status of the students" (Bulach, Malone, & Castleman, 1995). The same study also noted the importance of involvement as it related to student achievement. "The importance of involving students, parents and the community in the school cannot be overlooked as a significant factor related to student achievement" (Bulach, Malone, & Castleman, 1995). Again, the study pulled in an additional variable to provide more meaningful findings.

Administrative Costs

Jacques and Brorsen (2002) completed a study in Oklahoma that assessed the relationship of school expenditure categories in relation to student performance as measured by standardized testing scores. Generally, they found a negative or "unproductive" relationship between administrative expenditures and student achievement at both the building and central office level. However, they concluded that

it was not as much a negative outlay as much as it was the result of more effective spending in other categories that would more directly impact students. A noted limitation included no account of the effectiveness of the administrator as a leader (Jacques & Brorsen, 2002). Some researchers have supported similar findings. "Stronger fiscal condition is associated with a larger share of spending on central administration and conversely, poorer fiscal condition is associated with lower spending on administration—both because of lower overall spending and because the share of that spending devoted to central administration would be lower" (Ladd, 1996, p. 56). Such findings would suggest that a district with a lower aid ratio or high level of relative wealth would carry a greater administrative cost. However, other researchers have found the opposite. For example, The Association of California School Administrators stated, "School districts operate with very lean management structures in which only a small percentage of the school budget is directed to overhead and administration" (Association of California School Administrators, 1994, p. 3). This report, while only looking at California, presented some convincing data. For example, "On average, California school districts employ only one administrator for every 12 teachers. When other school personnel are included, the average district has one administrator supervising the work of 23 employees. Few private sector businesses operate within such a lean management structure" (Association of California School Administrators, 1994, p. 3). In addition, this report made a comparison between the size of the budgets school administrators were responsible for and their salaries as compared to the budgets and salaries of private sector employees. While this can recognizably be argued effectively as public positions with the service and benefits entailed, the difference in actual numbers is astounding. However, the statistic

that put the administrative/teacher spending argument in perspective is, "if every school administrator in California were fired, it would only generate enough money for a one-time 5 percent salary hike for teachers, or for reducing class size by only one pupil" (Association of California School Administrators, 1994, p. 4). While the studies on administrative costs have produced varied results, additional variables such as student achievement or graduation rates were not included in these studies.

The Current Educational Environment

The educational environment within which public school districts must function and comply has undergone major change between the 1996-1997 school year and the 2006-2007 school year. Most of the changes that had the greatest impact of public schools are tied to legislation and reporting requirements. As a result, this analysis of the educational environment focused on these changes.

Academics

Bilingual Education Act, 1974

Diversity is a recognized strength in educational programming, however, in the current educational environment, that which should be embraced as creating a positive learning environment can also create some organization challenges. "In 1968, Congress passed the Bilingual Education Act and amended it in 1974 to ensure instruction be given in English or the native language of the child, whichever is more suitable, 'to allow the child to progress effectively through the educational system'" (Lunenburg & Ornstein, 2004, p. 279). The Bilingual Education Act of 1968 was amended as the result of *Lau v. Nichols.* This supreme court ruling placed requirements on school districts to assist students who "are certain to find their classroom experiences wholly incomprehensible"

as a result of the students inability to speak and understand English (Lunenburg & Ornstein, 2004, p. 279). While this requirement has been in place for over thirty years, the number of students who require this assistance has been increasing rapidly. "The United States is undergoing considerable ethnic change – largely because of immigration trends – and the federal government is responding in the schools by requiring that the states and local educational agencies meet the needs of these children" (Lunenburg & Ornstein, 2004, p. 280). Currently, "there are approximately 42,542 students in Pennsylvania who are Limited English Proficiency (LEP), speaking in 175 different languages" (PDE ESL). According to the Pennsylvania Department of Education, "educating these students is a challenge to and a responsibility of our public/charter schools. Many schools in Pennsylvania are experiencing a substantial increase in the enrollment of students who cannot speak, read or write English well enough to participate meaningfully in educational programs" (PDE ESL). The substantial increase of LEP/ESL students places an academic pressure on our public schools. While providing the education these students need is an additional pressure on the public school system, administrators need to comply with the Bilingual Education Act and strive to achieve the best results under No Child Left Behind in addition to ensuring the district has adequate qualified staff to meet the need of this growing population.

IDEA, 1997 and 2005

Public Law 94-142, the Education for All Handicapped Children Act, of 1975 "has been rewritten several times and was renamed the Individuals with Disabilities Education Act (IDEA) in 1990" (Lunenburg & Ornstein, 2004, p. 281). The expectations of public schools under this law increased each time the law was rewritten. "Whereas

Public Law 94-142 issued a national challenge to ensure access to education for all children with disabilities, the 1997 Amendments to IDEA articulated a new challenge to improve results for these children and their families" (US Office of Special Education Programs). More specifically,

> In 1997, Congress strengthened the role of parents, emphasized student progress, encouraged nonadversarial resolution of disputes by adding mediation procedures, added disciplinary procedures, and made extensive changes to the IEP, including requirements regarding (a) participation and progress in the general education curriculum, (b) participation in state- or districtwide assessments, and (c) involvement of general education teachers (Yell, Shriner & Katsiyannis, 2006, p. 3).

IDEA was again rewritten in 2004 which again increased responsibilities for public schools. The reauthorization, Individuals with Disabilities Education Improvement Act (IDEIA), was implemented in 2005. The "changes, which take effect on July 1, 2005, include modifications in the IEP process and procedural safeguards, increased authority for school personnel in special education placement decisions, and alignment of IDEA with the No Child Left Behind Act of 2001" (Education History Timeline). However, it is recognized that court cases will further define and clarify the provisions of the most recent regulations. As a result, "to understand and implement IDEIA appropriately, teachers and administrators will have to monitor these due process hearings, court cases, and state law, regulations, and guidelines" (Yell, Shriner & Katsiyannis, 2006, p. 1). Special Education and the large number of cases that have gone to court have been reflective of the increasing demands on special education professionals and certainly special education administrators that oversee special education programs.

Cedar Rapids V. Garret, 1997

The Cedar Rapids V. Garret case resulted in greater requirements of public schools. "In *Cedar Rapids v. Garret,* the U.S. Supreme Court ruled in 1999 that schools are required to provide medical equipment and nursing services during school hours" (Lunenburg & Ornstein, 2004, p. 281). The increased pressure on school administrators was recognized. "Because of this decision and related legislation (expansion of ADA and IDEA), the level of responsibility placed on principals and school personnel has increased and will most likely continue to increase" (Lunenburg & Ornstein, 2004, p. 281). In addition, there are shortages in the applicant pool for qualified personnel (special education, nurses) to meet the established requirements.

No Child Left Behind, 2001

One of the major changes in the educational environment was the passage of the No Child Left Behind Act (NCLB) of 2001. "The *No Child Left Behind Act of 2001* is a landmark in education reform designed to improve student achievement and change the culture of U.S. schools. The law was passed by Congress with overwhelming bipartisan support and signed into law by President George W. Bush on January 8, 2002" (US Dept of Edu, 2005, p. 7). Under NCLB, the Commonwealth of Pennsylvania has implemented the Pennsylvania Accountability System that "is based upon the Commonwealth's content and achievement standards, student testing, and other key indicators of school and district performance such as attendance and graduation rates" (Summary of Pennsylvania Performance Standards). In addition, this system is aligned with the requirements of NCLB and has the same end goal of 100 percent proficiency by 2014 (Summary of Pennsylvania Performance Standards).

In response to the Federal No Child Left Behind legislation, the Department of Education for the Commonwealth of Pennsylvania established the Pennsylvania Accountability System. This system includes a definition of what students should master at specified grade levels and the corresponding indicators for twelve academic areas. "The *No Child Left Behind Act of 2001* (NCLB) included a mandate that by July 1, 2006, all public schools employ only teachers who are highly qualified at every grade level and in every core academic area (English, reading or language arts, math, science, history, civics and government, geography, economics, the arts, and foreign language)" (Spradlin & Prendergast, 2006, p. 1). This requirement has had clear consequences for districts that already were having difficulty filling certain teaching assignments with the prior qualification requirements. In turn, such requirements increased pressure for greater recruiting efforts or the addition of a position committed to human resource functions.

In addition to these standards being applied to all 500 public schools in the Commonwealth, students are required to take standardized tests, Pennsylvania System of School Assessment (PSSA), to determine proficiency levels. This determination is then tied to funding and has clear consequences for failure to meet Adequate Yearly Progress (AYP). The PSSA currently assesses student's abilities in reading, writing and mathematics and the different tests are implemented at specified grades. More specifically, "every Pennsylvania student in grades 3-8 and grade 11 is assessed in reading and math. Every Pennsylvania student in grades 5, 8, and 11 is assessed in writing" (Summary of Pennsylvania Performance Standards). In addition to these developments and requirements in the educational environment, the testing requirements are expanding to include science.

As a result, the high stakes standardized tests placed pressure on districts to conform to the defined standards as well as to find and employ Highly Qualified Teachers. Many districts have had to alter or increase staffing levels or instructional time in the tested content areas to be successful under the new requirements. Also, the extensive implementation and reporting requirements increased the responsibilities of administrators throughout the Commonwealth.

Business Operations

While significant changes have been made concerning instruction and the academic programs between 1996-97 and 2006-2007, another area that experienced significant change are the business operations of school districts in the Commonwealth of Pennsylvania.

Title 1 Funds

On the Federal Level, Title I funding was initially implemented by the Johnson administration under the Elementary and Secondary Education Act (ESEA) of 1965. "Title I schools are those schools that receive federal funds under Title I of the *Elementary and Secondary Education Act [ESEA]*: Improving the Academic Achievement of the Disadvantaged. Title I supports programs to improve the academic achievement of children of low-income families; and currently about 55 percent of U.S. public schools receive funds under Title I" (US Dept of Edu, 2005). While Title I funding and corresponding reporting has been in place for a number of years, the amount of monies coming through this program have increased. "By 1999 funding has increased to $8.4 billion or $700 per disadvantaged child" (Lunenburg & Ornstein, 2004, p. 277). By 2002, "ESEA funding reached $10.2 billion" nationally (Lunenburg & Ornstein,

2004, p. 278). While the increased funding is clearly a benefit to districts, the increase in funding that is provided to 55 percent of school districts calls for increased fiscal oversight and reporting.

Equalized Subsidy for Basic Education

The fiscal environment for Pennsylvania Public Schools prior to the timeframe of this study was inconsistent at best and frequently changed. More specifically, the state was unable or unwilling to fulfill the fiscal commitment made to the public schools. The Equalized Subsidy for Basic Education or ESBE formula reimbursed districts for part of their instructional costs, with wealthier districts receiving less per pupil than poorer districts. The basic formula was a per pupil dollar amount set annually by the General Assembly (originally the median district's instructional costs per pupil) multiplied by the number of weighted pupils and the district's aid ratio (EPLC, 10). However, the Commonwealth's inability to provide funding aligned with expenditures resulted in great variance in per pupil spending as the result of the increasing local burden. "By the beginning of the 1990s, ESBE was so badly out-of-joint with school district expenditures and growth patterns that the General Assembly essentially abandoned it" (EPLC, 10). There has been no commitment from the Commonwealth to follow a consistent formula since the ESBE formula was abandoned in 1992 (EPLC). As a result, the local communities were required to pay an increased percentage of educational costs. This in turn led to greater variability in the relative wealth of public schools due to the reliance on the local community to support public education. "Lawsuits aimed at funding equalization or adequacy were filed in 40 states since the early 1980s. In 25 cases the courts have ruled that the states must change their funding formulas and funding

calculations to ensure an equal opportunity to learn for every child" (PA Legislative History). While other states have faced similar funding issues, it does not appear that this issue has been resolved in the Commonwealth.

Foundation Funding

A number of different approaches toward funding public education in Pennsylvania have been tried. Early in the 1993-94 school year, the Pennsylvania Legislature implemented a new funding program. "Known as foundation funding, it established a specified level of per-pupil spending. The concept was to establish state support based on a minimum level of spending. Local resources to satisfy locally determined needs would then be used to enhance minimum spending" (PSBA). This system lasted two years. Since then, the Commonwealth has approved a number of ad hoc methods of funding including the foundation funding program.

Costing Out Study

In 2006, the Commonwealth allocated funds for a third party research firm to conduct a costing out study to determine the funding necessary to educate a child to meet the educational standards established by the state. The findings of the study indicated that on a per pupil basis, most districts were not spending enough nor receiving enough fiscal support from the state to meet the educational requirements established at the state level. More recently, the Pennsylvania State Board of Education commissioned a study to be conducted to assess and determine the discrepancy, if any, between the costs of education for students to reach the expected student achievement levels as defined by state policy makers in comparison to the funds allocated and utilized for education. Those conducting

the Costing Out study described the issues to be addressed in the executive summary of the report.

> Many state education finance systems have not addressed the question of what it really costs to meet student performance expectations. In many states, including Pennsylvania, policymakers have developed academic standards and timetables to achieve performance expectations, and they have created accountability systems with consequences for schools and districts when expectations are not met. Most often, however, these expectations and consequences are created without understanding what it costs for schools and districts to meet desired outcomes (Augenblick, Palaich & Associates, 2007, p. I).

The results of the study found a clear gap in the amount that it would take to meet the stated goals and the amount being spent on public education in Pennsylvania. "The average total costing out estimate per student is $11,926. By comparison, in 2005-2006 school districts in Pennsylvania actually spent $9,512 per student" (Augenblick, Palaich & Associates, 2007, p. IV). The study found that there were 471 school districts that were spending less than their costing out estimate. Cumulatively, these figures were even more astounding. "In the aggregate, the costing out estimate is $4.38 billion higher than current spending (25.4 percent higher than current spending). This number rises to $4.57 billion if those districts that now spend more than required by the costing out estimates continue to do so" (Augenblick, Palaich & Associates, 2007, p. IV). As a result, Governor Rendell has proposed increased educational spending.

Act 50, Act 72 and Act 1

In 1998, Act 50 was passed as the first in a series of modifications to the taxing structure. "The act offers the opportunity for school districts to shift the local tax burden away from the real property tax (sometimes called the "real estate" or "property" tax) and towards the earned income tax" (Act 72). At the heart of Act 50 was a tax shift from

real estate taxes toward earned income taxes. In addition, Act 50 implemented Homestead Exclusions.

> Act 72 differs from the previous version of statewide property tax relief, including Act 50 of 1998, in a number of important ways. Most importantly, it uses state revenues, in the form of proceeds from a 34% tax on profits from expanded gaming, as well as local revenues, in the form of a mandatory 0.1% earned income tax, to reduce school property taxes (Act 72).

Act 72 was considered to be somewhat controversial because it allowed tax payers to vote on school district tax increases above an inflationary index. Act 72 was overwhelmingly rejected by both school districts (who chose not to opt in) and tax payers alike. This rejection led to the passage of Act 1. Act 1 was identified as tax relief when actually it was once again a tax shift. Act 1 required districts to alter the budget cycle to allow for a front-end referendum and potentially a back-end referendum. The front-end referendum required a primary ballot question concerning whether an earned income tax or a personal income tax were to be levied within the district. In addition, Act 1 required districts to go to a back-end referendum in which the taxpayers could vote to allow the district to levy taxes above an index. Under Act 1, there were eleven exceptions that allowed districts to levy taxes above the index without voter approval. However, the district must apply through a strict process to be awarded an exception. Act 1 was a complicated piece of legislation and in preparation for the primary election in the spring of 2007 the responsibility of explaining Act 1 to the public for the vote for either an EIT or PIT to be levied fell on districts. Act 1 placed more restrictions on districts and therefore, decreased local control in addition to adding the responsibility of educating the larger community about complicated legislation and complying with new taxing restraints as the result of Act 1.

Reporting Requirements

In addition to the inconsistent fiscal commitment from the state, business officials have been required to comply with new reporting requirements. Two Governmental Accounting Standards Board (GASB) statements have had a substantial impact on the fiscal reporting of public schools. These include GASB 34 and GASB 39. GASB 34 was issued in June of 1999 and there were three phases for the effective dates based on total annual revenues. "GASB 34 will be phased in on a district-by-district basis during the period 2001 through 2004 starting with the districts that receive the largest amounts of total revenues. It is the biggest change in government accounting in several decades; it is designed to improve overall accountability for all government entities, including school districts" (School Finance 101). GASB 34 called for additional responsibilities for financial mangers regarding disclosure and added additional financial reporting sections to allow for greater understanding. Under GASB 34, "financial managers will be asked to share their insights in a required management's discussion and analysis by giving readers an objective and easily readable analysis of the government's *financial* performance for the year" (GASB 34). The goal of the analysis was to "provide users with the information they need to help them assess whether the government's financial position has improved or deteriorated as a result of the year's operations" (GASB 34). Ultimately, GASB 34 requires financial managers to prepare two additional financial reporting sections. "GASB 34, while retaining individual fund accounting concepts, requires two additional financial statements. These statements cover all funds. They will give information on the district as one accounting entity—like one business" (School Finance 101).

In addition to the requirements of GASB 34, GASB 39 was issued in May of 2002 and effective for periods after June 15 2003 (GASB 39). GASB 39 continues the requirements of Statement 14 "to apply professional judgment in determining whether the relationship between a primary government and other organizations for which the primary government is not financially accountable and that do not meet these criteria is such that exclusion of the organization would render the financial statements of the reporting entity misleading or incomplete" (GASB 39). However, GASB 39 provides additional information concerning "the application of existing standards for the assessment of potential component units in determining the financial reporting entity" (GASB 39). In essence, GASB 39 requires "all entities associated with a primary government are potential component units and should be evaluated for inclusion in the financial reporting entity" (GASB 39).

Other changes for school district business were the changes concerning pension reporting at the end of 2003 from the Financial Accounting Standards Board (FASB) that released a new Statement of Financial Accounting Standards (SFAS). "In March 2003, responding to user requests, FASB again reviewed pension plan disclosures. SFAS 132(R) requires the annual statement footnote to provide additional information beyond the earlier standard" (Klamm & Spindle). In addition, SFAS 132(R) placed additional requirements on business offices in regards to disclosures for interim reports. These requirements included "pension cost for the period, including the major components separately stated; and employer contributions for the current fiscal year if they differ significantly from amounts previously disclosed" (Klamm & Spindle). With increasing

reporting and financial requirements required of schools, the demand for astute business managers has become a necessity.

Child Nutrition Programs

Another area subjected to greater requirements over the time period was the food service programs in public schools. The increased expectations of food service programs came in two forms. The first was districts were required to meet nutritional standards on a defined timeline as identified by the Commonwealth to receive program related funding. "The following nutrition standards must be implemented in all identified areas, exactly as written in order for schools to receive the supplemental state reimbursement. At a minimum, Year One of the standards must be implemented in the 2007-2008 School Year, and, at a minimum, Year Two of the standards must be implemented on or before the 2008-2009 School Year and each school year there after" (PDE – Child Nutrition Standards). The second expectation was the result of the rapidly increasing rate of childhood obesity. Essentially, public school food service programs were a mean of addressing this growing epidemic. "Between 1999 and 2004, there was a significant increase in the prevalence of overweight among girls (13.8% in 1999 to 16.0% in 2004). Similarly, among boys, the prevalence increased significantly from 14.0% in 1999 to 18.2% in 2004" (NCHS). By the 2003-2004 school year, "17.1% of children and adolescents 2-19 years of age (over 12 and a half million) were overweight (NCHS). These grim statistics placed an increased pressure on school districts to change what is offered for children to eat and to introduce nutrition education programming.

Athletics

Athletics proved to be another area that placed increasing responsibilities on school district administrators. As indicated by the Pennsylvania Interscholastic Athletic Association, ultimate responsibility concerning athletic programming is on the principal. According to the PIAA website, areas of responsibility not only include oversight of athletic programming and contests, but also include "establishing and enforcing rules governing the eligibility of high school athletes to participate in interscholastic athletics, including rules for academic performance and attendance, age, amateur status, and transfers" (PIAA). Due to the many and increasing pressures on principals, this position often requires an additional administrator or an assistant principal to have primary oversight of such programs.

Technology

Technology is another area that has rapidly changed since the 1980. In the early 1980s, the personal computer began a period of widespread use and "the IBM brand began to enter homes, small business and schools" (IBM). With time, computer software and hardware allowed for more advanced technologies to be utilized by greater populations. In addition, federal and state level funds became available to assist public school districts with the cost of implementing and enhancing school technology programs. The first source of major funds came from the federal government. "In reaction to the proliferation of technology in schools in the mid-1990s, the United States Department of Education (USDOE, 1996) formulated the Technology Literacy Challenge Fund (TLCF). The purpose of this five-year, $2 billion program was to see that all teachers were technology literate by the year 2000" (The Technology Source Archives).

More recently, the Commonwealth passed Act 183 in 2004 that "created several opportunities for school entities to promote and accelerate broadband deployment. As part of the law, an annual $10 million E-Fund was established to assist schools with purchasing services, hardware, technical assistance and distance education over the next six years" (PDE Technology). As time progressed, the technologies that are available and are present in today's public schools have exponentially expanded. However, this progression of technological advancements has resulted in the demand for expertise and oversight within public school districts. An additional pressure is the recent increase of social websites and security issues that place greater responsibilities on technological security and policies to govern the appropriate use of such resources.

Act 22 of 1997, Charter Schools

The enactment of charter schools had an impact on a number of aspects of public school districts and the administrative structures. In fact, one study on the impact of charter schools on public school districts "found that every district with declining enrollment also reported that charter schools had a negative impact on their budget. In these districts, administrators reported laying-off staff, downsizing their central offices, closing schools, increasing class sizes, placing a greater emphasis on customer service, changing staffing arrangements, and adding new educational programs" (Ericson, Silverman, Berman, Nelson, & Solomon, 2001, p. 10-11). With such an extensive list of district operations that were impacted, it is worthwhile to look specifically at how charter schools progressed in Pennsylvania. It should be noted that the data utilized for this study did not include charter school administrators.

Act 22 of 1997 set up the funding for charter schools in Pennsylvania. According to the Pennsylvania Department of Education, "a charter school is an independent public school established and operated under a charter from the local board of school directors. Charter schools must be established as public nonprofit, nonsectarian entities by teachers, parents, institutions of higher education or museums" (Pennsylvania Department of Education, 2006). During the first year, the 1997-1998 school year six charter schools were created and were comprised primarily of minority students at 87.8% of the student population. All but one of these charter schools were in urban districts with high minority populations (Pennsylvania Department of Education). The following school year, the number of charter schools in Pennsylvania jumped to 31 and the percent of minority students declined to 81.5% (Pennsylvania Department of Education). During the third year, the 1999-2000 school year, the number of charter schools in the Commonwealth once again increased to 47 and consistent with the prior year, the percent of minority students declined again to 77.3% of charter school students. These trends continued for the following school years as follows; in the 2000-01 school year, the number of charter schools increased to 65 and the percentage of minority students declined to 70.2% of enrolled students (Pennsylvania Department of Education), and in the 2001-02 school year, the number of charter schools increased to 77 and the percentage of minority students declined to 63% of enrolled students (Pennsylvania Department of Education). These trends did not continue in the 2002-03 school year. While the number of charter schools increased to 91, the percentage of minority students also increased slightly to 64.4% of enrolled students (Pennsylvania Department of Education). This was a significant minority population as "compared to the total public

enrollments which consisted of 22.9% minorities" during the 2002-03 school year (Pennsylvania Department of Education). During the 2003-04 school year, the number of charter schools increased to 102 that consisted of 63% minorities as compared to the 23.7% minorities in public schools in the Commonwealth (Pennsylvania Department of Education). The 2004-05 school year was the first year in which Pre-kindergarten enrollments were included. Despite this change, the number of charter schools again increased to 109 and were comprised of 61.1% minority students (Pennsylvania Department of Education). While the rapid growth in the number of charter schools slowed down, it continued to increase to 116 schools in the 2005-06 school year and to 119 in the 2006-07 school year (Pennsylvania Department of Education). The percentage of minority students continued to decline as well from 60.3% of charter school students in the 2005-06 school year and to 58.7% of charter school students in the 2006-07 school year (Pennsylvania Department of Education).

While not explicitly stated, it was assumed that the increasing number of charter schools concentrated in urban areas contributed to declining enrollments in certain urban districts. In addition, it was also assumed that such changes in enrollment as well as educational administrators leaving the public schools to work in the charter schools could contributed to higher levels of turnover or decline in the actual number of administrative positions during the time frame. The following charts represent the enrollment trends in Pennsylvania charter schools since the establishment of funding under Act 22 of 1997. All data was from the Pennsylvania Department of Education website. Figure 2.1 presents the increasing number of charter schools over the time period followed by

Figure 2.2 indicating charter school enrollment and Figure 2.3 depicting charter school enrollment as a percent of total public school enrollments.

Figure 2.1: Number of Charter Schools

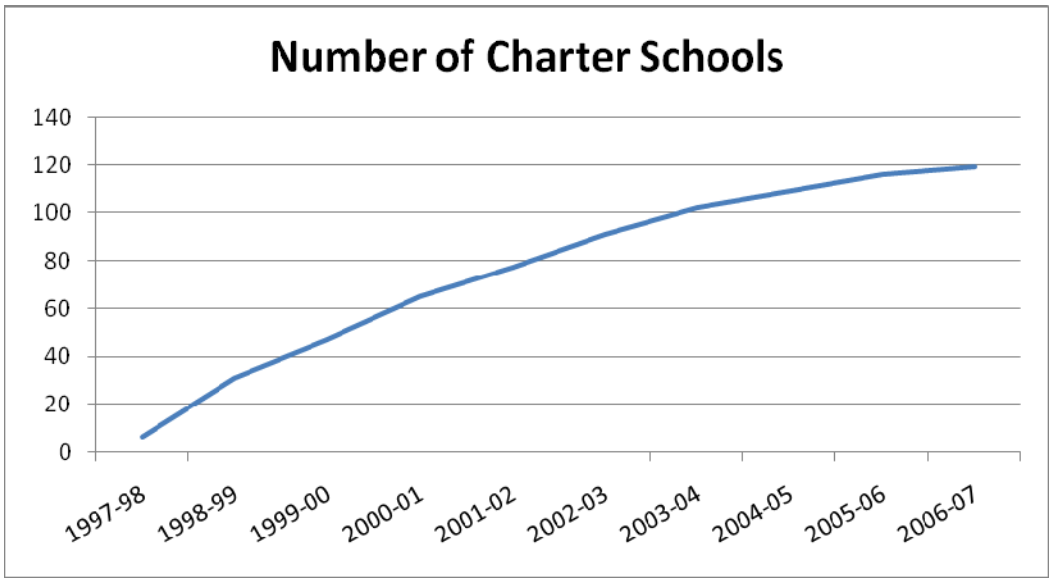


Figure 2.2: Total Charter School Enrollment

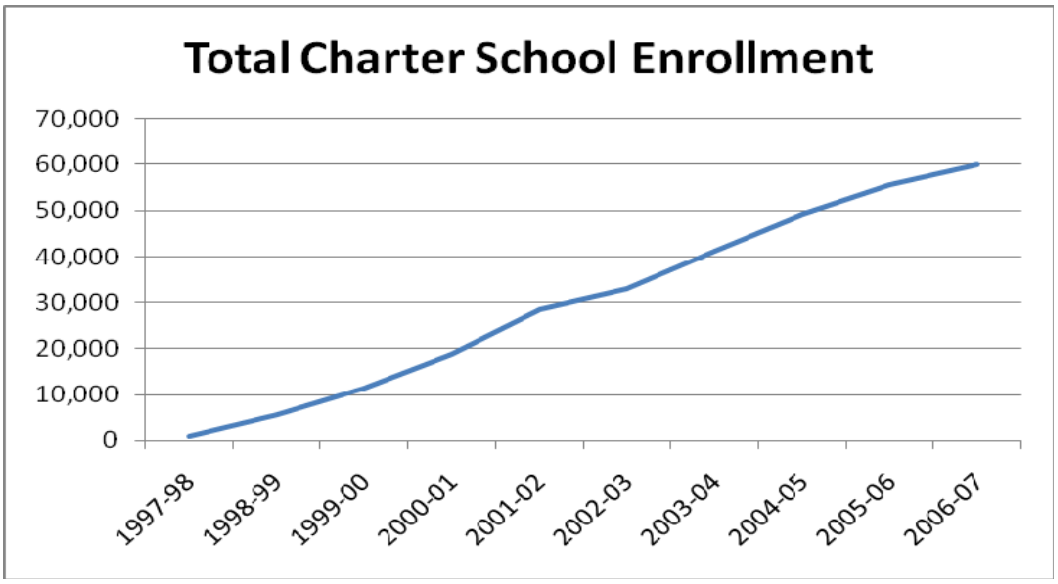
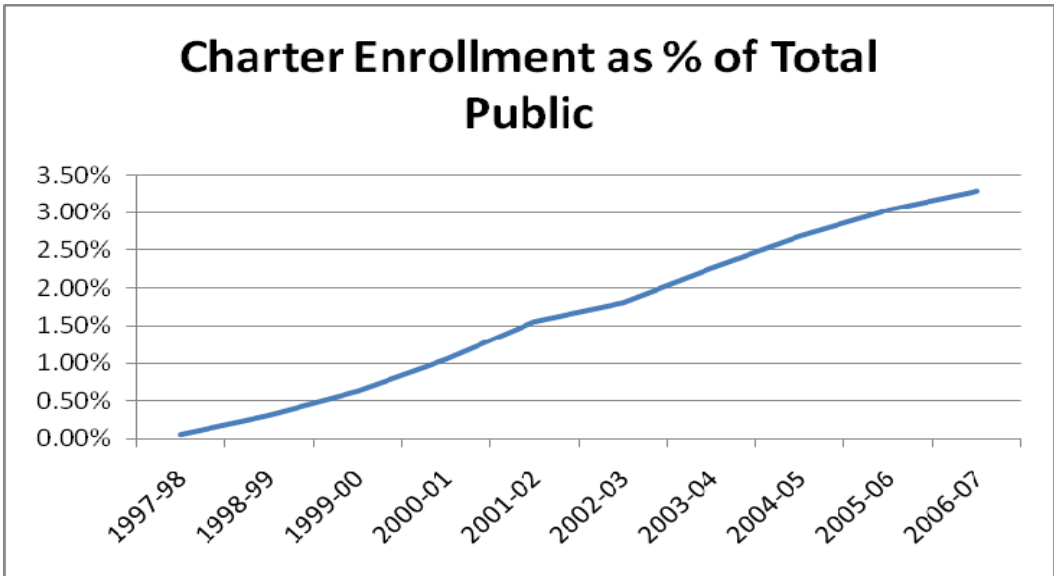


Figure 2.3: Charter School Enrollment as Percent of Total Public School Enrollment



Pennsylvania Administrative Positions

Due to the many pressures on public school districts in the Commonwealth and the interplay between district characteristics and the educational environment, Pennsylvania school districts represent a number of organizational structures. Some characteristics are present in all school districts in Pennsylvania such as having a Superintendent and a nine member Board of Directors. However, these characteristics are driven by current law. Despite these consistencies, the differences seem to be abundant. For example, districts ranged in size in the 2006-07 school year from an average daily membership of 242 students K-12 and two administrators (Superintendent and Business Manager) up to an average daily membership of 211,059 and six hundred and seventy-one administrators (PDE Database). Also of interest were the changes that occurred in Pennsylvania public school administrations over time. While some administrative positions remained stable, most changed. From the 1996-97 school year to the 2006-07 school year total administrative positions increased from 5,734 to 7,348

(PDE Database). This is a total increase of 1,614 administrative positions across the 500 districts.

Over this timeframe, there were six administrative positions that remained relatively stable. These included Superintendent, Assistant to the Superintendent (Curriculum & Instruction), Assistant to the Superintendent (Business), and three different types of supervisors (Secondary Education, Elementary Education and Pupil Personnel Services). None of these positions increased or decreased more than ten positions across the Commonwealth within this time frame. However, with the limited number of Assistant to the Superintendent for Curriculum & Instruction as well as for Business positions, these positions were excluded from the individual position analyses as a protection to the incumbents.

The Elementary School Principal position fluctuated across the timeframe. There were 1,672 Elementary Principals in the commonwealth during the 1996-97 school year and 1,692 during the 2006-07 school year. While this is only a difference of twenty positions, this position had the greatest number at 1,732 Elementary Principals during the 2003-04 school year and the fewest at 1,655 during the 1997-98 school year.

Other positions experienced moderate growth. The Director of Personnel position increased from 52 positions in the 1996-97 school year up to 99 positions in the 2004-05 school year after which the number of positions remained the same through the 2006-07 school year. The Assistant Superintendent had a total increase of 60 positions across the timeframe rising from 215 to 275. However, this position peaked at 287 during the 2003-04 school year. Similarly, the Athletic Director position had a total increase over the time frame of 61 positions rising from 79 to 140. The Supervisor of Curriculum and

Instruction had a total increase of 74 positions rising from 120 to 194. The Business Manager position had a total increase of 75 positions rising from 352 to 457.

The Assistant Elementary School Principal had a total increase of 182 positions rising from 110 to 292. The Supervisor of Special Education had a total increase of 186 rising from 258 to 444. The Coordinator of Food Services had a total increase of 205 positions. However, there was a sharp increase from 8 during the 2003-04 school year to 211 during the 2004-05 school year. This led to the suspicion that a reporting change had occurred as opposed to such a sharp increase in the number of Food Service Coordinators. Middle School Principals increased by 105 positions from 295 to 400. Assistant Middle School Principals increased by 167 positions from 208 to 375. The Assistant High School Principal increased by 194 positions rising from 691 to 885.

Interestingly, the only position that decreased over the timeframe was the High School Principal. This position decreased by a total of 135 positions. There was not a constant decrease. There were 930 High School Principals during the 1996-97 school year and 795 High School Principals during the 2006-07 School Year. The greatest single year decrease occurred between the 1998-99 school year and the 1999-00 school year with a decrease of 52 positions. The detailed count is presented in Table 2.1.

Table 2.1: Position Counts by School Year

Position	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Superintendent	497	493	494	498	491	497	495	497	496	496	494
Asst Superintendent	215	218	235	248	262	269	265	287	272	266	275
Elementary School Principal	1,672	1,655	1,673	1,688	1,712	1,682	1,718	1,732	1,721	1,708	1,692
Asst Elementary Principal	110	113	126	176	190	203	260	236	249	276	292
High School Principal	930	914	915	863	886	888	870	851	842	806	795
Asst High School Principal	691	658	663	744	778	773	824	837	856	886	885
Middle School Principal	295	294	290	340	347	343	358	369	369	402	400
Asst Middle School Principal	208	206	214	281	292	318	326	351	384	379	375
Director	79	88	89	98	108	110	105	109	114	133	140
Supervisors	521	522	570	564	580	604	645	663	689	739	789
Asst to Superintendent, C&I	39	35	37	39	41	40	42	42	38	33	32
Asst to Superintendent, Business	15	16	17	15	13	10	10	10	12	12	16
Business Manager	352	346	363	371	385	400	403	391	407	418	427
Director of MIS	35	44	48	47	49	49	65	73	82	95	102
Director of Personnel	52	59	62	63	68	70	80	86	99	99	99
Food Service Coordinator	23	23	21	21	21	22	23	13	8	211	228
Other	-	-	1	1	106	126	164	239	244	284	307
Total	5,734	5,684	5,818	6,057	6,329	6,404	6,653	6,786	6,882	7,243	7,348

Advantages

The increasing number of administrators governing public schools has both advantages and negative consequences. The advantages of this trend included greater specialization of function, more expansive programmatic offerings for students as well as increased oversight of district personnel and operations. More specifically, with the ever increasing demands and expectations of public schools to fill roles and provide services well beyond education results in the need for a more comprehensive administrative team to meet these expectations. In addition, many of the requirements of public schools are the result of factors outside of the districts control. Districts are required by federal and state law to provide a number of services and to comply with requirements related to education directly as well as other services not directly related to education. In addition and to protect their interests, districts must also align functions with current case law decisions. While these ideas may appear compliance based or punitive, the result is a comprehensive public school system that provides much needed services to meet the needs of youth.

Disadvantages

In contrast, the increasing number of administrators has also increased the costs of public education in addition to many other factors contributing to the growth in cost. Some large districts may have some concerns about too much specialization that results in narrow roles that are hard to replace. In addition, the increasing number of administrative positions has led to shortages of individuals to fill the increasing number of administrative positions. While there are more than enough qualified candidates, it has

been reported by the Educational Leadership and Policy Center that many of these individuals are not applying.

> Between 2000-01 and 2004-05, PDE issued 859 letters of eligibility to candidates for the superintendency. This averages 172 per year, or enough candidates to fill superintendent slots in one-third of all Pennsylvania school districts annually. Clearly, the demand for new superintendents is less than this. But those conducting searches report that there are fewer applicants for the top school district post than there were a decade ago and that more applicants are seeking their first superintendency — many without prior central office experience (The Educational Leadership and Policy Center, 2006).

One can speculate that the reasons for the decline in applicant pools may be the result of the ever increasing demands on our public school administrators coupled with the increasing salaries awarded to teachers with long tenures. Both of these factors result in less appeal and incentive for teachers to move into administrative ranks. In addition, the pool outside of educators is limited by the established qualification requirements developed at the state level.

Turbulence

With identified advantages and disadvantages to the changing and summative increases in administrative positions, one item that was not clear and has not been well developed in the literature is trends and characteristics of the administrative team and how it has changed over time. "Organizational theorists emphasize that organizations must adapt to their environment if they are to remain viable. One of the central issues in this process is coping with uncertainty" (Duncan, 313). Uncertainty is well established in the current educational environment. One means of assessing and comparing levels of uncertainty and change is through Turbulence Theory (Gross 1998, 2004, Gross & Shapiro, 2004). This theory suggests a Turbulence gauge can be utilized to assess the level of change created by a situation. The gauge includes four levels to include light,

moderate, severe and extreme (Shapiro & Gross, 2008). Light turbulence suggests normal or no disruption to the organization. Moderate turbulence is associated with widespread awareness of an issue. Severe turbulence is associated with a sense of crisis in the organization and extreme turbulence is associated with structural damage or dismantling of the organization (Shapiro & Gross, 2008). These levels of turbulence create a tool to assess organizational situations undergoing change and provide a means for comparison. The gauge is supplemented with some additional ideas to assist with the assessment of the change the organization is undergoing.

Positionality recognizes that different groups or individuals in the organization experience different levels of turbulence based on their position within the organization (Shapiro & Gross, 2008). This idea highlights the need to recognize the position and interests of the various stakeholder groups with a vested interest in the organization. In addition, Turbulence Theory presents the idea of cascading in which change events seem to gain momentum and create a situation in which one additional change event, even if it would seem minor in a different environment, could lead to a severe or extremely turbulent situation (Shapiro & Gross, 2008). Finally, Turbulence Theory suggests, especially as applied to public schools, that stability is achieved through leadership commitment to dialogue, democracy and innovation (Gross, 2001). Dialogue suggests a continuous commitment to communication. Democracy encourages participation in decision making and innovation recognizes the willingness of leaders to refine operations to meet the mission of the organization (Shapiro & Gross, 2008). Turbulence Theory provides a tool to assess the changes educational organizations are experiencing and the role of leadership in the change process.

While districts may experience unexpected and dramatic change in either the organization or in the external educational environment, they must and are responding as evidenced by changes in the leadership team over time. As highlighted by the sociotechnical management theories, the interplay between the structure and the demands/services are of interest to understanding the changes that are occurring in the leadership teams in the Commonwealth. With the volatile environment and the increasing demands, along with the noted variance of total administrators in the Commonwealth, questions arose as to whether there was a relationship between the administrative structure and the district characteristics as well as a relationship between changes in the administrative structure in response to the educational environment in which all school districts in the Commonwealth are functioning.

CHAPTER 3

METHODOLOGY

The Methodology chapter is comprised of eight subsections to include assumptions and rationale for a quantitative design, the role of the researcher, population and sample, data collection, data analysis, methods of verification, ethical issues, and the anticipated outcomes of this study and its relation to the theories and literature.

Assumptions and Rationale for a Quantitative Design

A quantitative study design was selected for this study to allow for the analysis of large data sets to identify trends and relationships between administrator, districts and community characteristics and administration size as well as correlations between environmental change events and administrative positions and structures of the 500 public school districts in the commonwealth of Pennsylvania between the 1996-1997 school year and the 2007-2007 school year. By maximizing the data available, the researcher was able to identify trends and relationships affecting administrative positions and structures. This goal was best aligned with a quantitative design. In addition, complete datasets based on the available data allowed for greater validity in the results.

By utilizing a quantitative design, the researcher was able to collect and analyze data concerning administrators, districts and communities. The administrator data included average number of administrators across the time period, direction of administrator position count change, average education level of administrators, average salaries, average total years of service and average unit years of service. District data included aid ratio, average daily membership, SAT score averages, Average Yearly Progress and aid ratio, student race, student to administrator ratio, student to teacher ratio,

and student size. Finally, community data included school completion levels, males and females in the workforce, household incomes, population below poverty level, population above poverty levels, housing occupancy rates and housing occupied levels. These data were analyzed to identify trends and significant relationships between these characteristics themselves and with administration size. In addition, external or educational environment change events as the result of new legislation, rules and regulations were identified by implementation date and functional areas effected to identify correlations. While the researcher had some assumptions as to the motivation for structural adjustments, they were all speculative. To identify trends and significant relationships, the researcher collected quantitative internal and external data.

Role of the Researcher

The researcher has a background familiarity with how administrative structures are organized but had limited information concerning the collective trends and the relationship between the administrative structure and either the district characteristics, the educational environment or both. The researcher is familiar with K-12 organizational structures generally and has observed trends of increases and decreases in certain types of positions; however, there was not corresponding information as to the collective trends that occurred across districts. Utilizing all public schools in the Commonwealth of Pennsylvania, the researcher collected internal and external data, and analyzed the relationships between internal districts characteristics, the external educational environment and the administrative positions and structures in Pennsylvania between the 1996-1997 school year and the 2006-2007 school year.

Potential Bias

As a result of the researchers' experiences working with school districts on organizing administrative structures, the researcher carried some bias concerning the types of districts that were making changes. To overcome these judgments, the researcher was continuously aware of these expectations and consciously limited any judgment to the best of the researchers' ability throughout the study. Utilizing a statistical methodology and large data sets allowed such district specific judgments to have little if any influence on the research.

Population and Sample

The population consisted of all 500 public school districts Commonwealth of Pennsylvania. As a result, there was not any selection of districts to be included or districts removed by nature of the Commonwealth's boundary. This population maximized the number of schools and characteristics represented that were all functioning within the same external educational environment. The administrative positions and structures were those reported for each of the 500 school districts between the 1996-1997 school year and the 2006-2007 school year. This time period allowed for change over time to be assessed without getting too extensive to effectively work with the data sets. In addition, these are the years that were most current taking into account the time delay in reporting such data.

Data Collection

Data collection consisted of the review and input of administrator, district, and community characteristics based on databases that are available to the public but not compiled into one database. As the data were collected, characteristics were codified and

entered into an ACCESS database that was created to allow for the systematic collection and extraction of data. This relational database provided a systematic system of sorting and extracting data. The researcher utilized the Common Core of Data from the National Center for Education Statistics to collect school specific data while using data spreadsheets from the Pennsylvania Department of Education as the basis for the administrative position information. The educational environment data was collected from a number of sources. The researcher sought both major legislation and legislation that primarily impacted specific functional areas to identify correlations.

Data

The researcher planned to look at the data in two primary ways to assess the size and type of change in relation to other characteristics categorized as internal or district characteristics and external or change events that impact all districts. The first was to run statistical analyses of correlations for the data measurements using size categories as the independent variable. The second process was to identify disruptions in administrative position trends as aligned with the implementation of new legislation.

The first intended approach was to assess the strength of the relationship between the size of the administration and changes over time. In this approach, the researcher would identify and define distinctions in size of administrations on a continuum from those that decrease, are stable, increase and increase a lot. Size was intended to serve as the independent variable. These groups were then to be assessed in relation to the dependent variables such as location, community type, level of education, years of service, relative wealth, and student population characteristics such as average daily membership, student achievement as measured by standardized test scores, socio-

economic status, English Language Learners, student enrollment growth, and demographics to determine the strength of the relationship between the size of the administration and the characteristics that have been broadly grouped as district or internal characteristics. However, the researcher found limitations in this proposed approach and made some modifications to better assess the data to find the relationships that were sought.

The initial proposal included having other data run as the dependent variables to identify significant relationships between these data measurements and the independent variable of administration size. After working with the data, it was concluded that the proposed approach did not effectively address different data as they related to administration size to produce meaningful findings between data categories. The size categories as initially proposed were found to be arbitrarily applied to continuous data and the community type categories were found to be a non arbitrary means of including size in these analyses. In addition, a further breakdown of the other data measurements into categories for analysis served as a better means of organization and comparing data to identify trends and relationships. As a result, the researcher modified the approach and organization of the data to identify trends and significant relationships between administration size, and administrator, district and community characteristics, with each data measurement identified as falling into one of the three categories.

The size categories planned to be identified by the researcher were actually found to not be an effective means of categorizing data. Rather, the researcher found community type to be a more effective representation of size that was not arbitrarily imposed. The selection of community type as a measurement of size is detailed in the

first section of the data analysis chapter. Measurements of size included community type, mean number of administrators across the time period, total number of administrators and direction of administrator position count change.

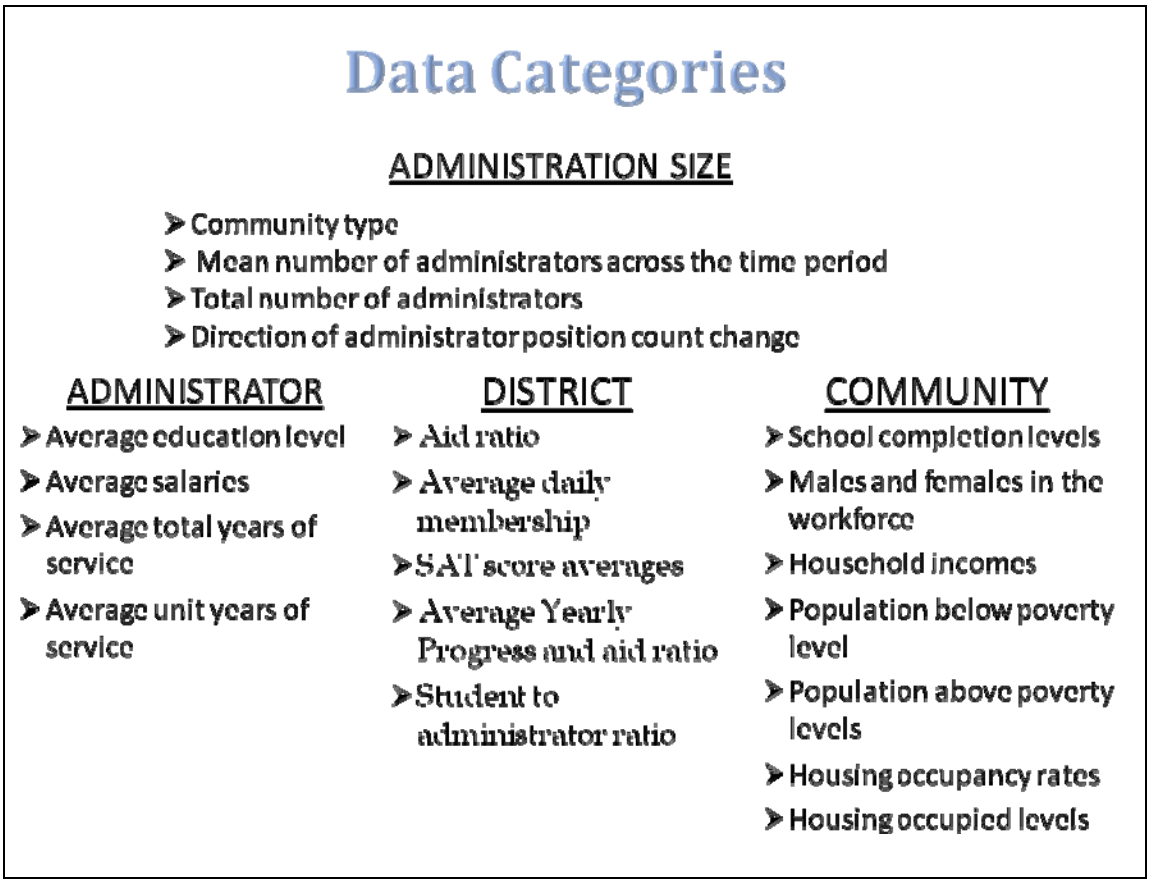
The first category of data were administrator characteristics and included average education level of administrators, average salaries, average total years of service and average unit years of service.

The second category was district characteristics that included aid ratio, average daily membership, SAT score averages, Average Yearly Progress and aid ratio, student race, student to administrator ratio, student to teacher ratio, and student size.

The third category was community characteristics that included school completion levels, males and females in the workforce, household incomes, population below poverty level, population above poverty levels, housing occupancy rates and housing occupied levels. Figure 3.1 displays the selected data categories.

These data were run through SPSS to identify significant relationships between the characteristics and by community type. Through this process, it was identified that certain characteristics had significant relationships with data in the different categories while many did not. As a result, the sections that were reported addressed the significant relationships that were identified and not all data were addressed in the results chapter. Further details are provided in the appendices.

Figure 3.1: Data Categories



The second proposed approach was better aligned with how the data would serve to answer the question concerning the trends between administrative structure and size and environmental change events, however, some limitations to the proposed approach were also identified. The researcher initially planned to look at the number of positions in relation to the education environment to identify a relationship between legislative implementation and change in the number of positions in a related functional area. More specifically, the researcher found this collective approach was limited in defining the relationships that were suggestive of cause that were sought. This was essentially a

review of the timing of change events and the aggregate change in administrative positions as they may have been impacted by the event. In addition, the researcher suspected an assessment of change in positions would be the result of this analysis.

However, in working with the data, the researcher found this proposed approach to not be an effective means to addressing the question. The researcher chose to look at how different groups, often defined by community type, of districts responded to change events in the environment that had an impact on all districts. In addition, the researcher included collective measures of educational levels of administrators, total years of service, unit years of service, and salaries to better identify changes in the environment as compared to only looking at collective position counts. In addition, each of these measures was assessed by position and by community type over the time period to provide more detail in assessing if different types of districts were impacted differently by the environment. The researcher found this to be a valid and more meaningful means of assessing environmental change events that were suggestive of cause as compared to the collective position count data that did not recognize how the environment placed different pressures on administrations with different characteristics. The most notable difference between the proposed approach and the approach selected was a shift from seeking stability and change as the categorical results of the environmental impact to including change and stability as a means of identifying the correlations.

To assess stability in structures, the researcher addressed the stable number of positions within the structure for fifteen administrative positions. In other words, the researcher sought to identify the percent of stable positions by community type across the eleven year time period that maintain the same number of positions. To do this, the

researcher calculated the percent of each of the positions by community type that did not change in actual numbers per the given district during the time period. The results of this indicated most positions had the highest level of stability in rural districts. However, the researcher discovered that zero value or non positions were calculated as stable and increased the corresponding position percent. As a result and to be reflective of actual position stability within a given structure, the researcher chose to remove all zero- value or non-positions.

An additional initial concern in identifying change in administrations was the variance of using a self-referential percent change as a means of addressing change. While this issue did occur in the administration stability assessment, the researcher effectively addressed this potential issue by utilizing average counts with percent change as well as counts of change categories to include decrease, no net change and increase. By providing a number of means of assessing change beyond the self referential percent change, the researcher is confident these data are not indicating change levels that are not effectively addressed in the results chapter.

In summation, the first approach toward data analysis utilized community type as an indicator of administration size and ran analyses through SPSS to identify trends and significant relationships between data categorized as administrator, district and community characteristics. The second approach included both an aggregate analysis and community type analyses of individual positions stability, educational levels, total years of service, unit years of service and salaries in relation to environmental change events to identify correlations.

While the researcher utilized means of analyzing the data that varied from the initial proposal, the researcher is confident that the selected means are more appropriate and provide more accurate results in addressing the questions.

Methods of Verification

Four primary means of verification were utilized for this study to include data that was as complete as was available, a detailed description of the methodology in approach as well as a definition of what the data represent, consistent analytical approach and close collaboration and review by experts familiar with administrative positions and structures in Pennsylvania. The complete data sets that were reported representing all 500 public school districts in the Commonwealth of Pennsylvania were utilized. The researcher described the methodology as well as modification in approach to meet the goals of the research and to allow for replication with similar data and methods. In addition, consistent analytical approach was utilized to produce comparable results across characteristics as was applicable to the question and to limit unintended forms of bias to enter the study. The final approach toward verification, the researcher discussed preliminary and final findings with experts in the field who were familiar with the type of data being utilized and have a working knowledge of administrative positions and structures.

Ethical Issues

The researcher had a few ethical concerns at the onset of the research. While only publically available data was utilized, there were some concerns that the data sets for the extreme characteristics such as extremely large or extremely small districts may allow identification to occur despite codification. In addition, the researcher had some minor

concerns about how the data and conclusions of this study may be utilized for generalization or assumptions about current positions and structures despite continued changes in the educational environment.

Anticipated Outcomes of the Study and its Relation to Theory and Literature

The following hypotheses section will first describe the characteristics of the districts that the researcher suspects would have experienced administrative increases, decreases, fluctuations and stability in actual number of positions. This is followed by a brief section concerning the administrators' characteristics in relation to the district characteristics where they may serve. The final section describes the researchers' assumptions about the effect of environmental change events on administrative numbers and structures.

Regarding administrative increases, the researcher suspected that the largest increases in numbers of positions would occur in large, urban districts; however, this was assumed to be accompanied by an increased amount of turnover within the positions in these districts. This was also suspected to be the case, especially with lower and mid level administrators in districts that were experiencing increased enrollments over the time period. The greatest increases in terms of percent change were suspected to be suburban districts with increasing enrollments.

Decreases in total number of administrators were suspected to occur in small and medium sized rural districts; however, the actual individuals occupying the positions were suspected to remain the same. Generally, these districts would also have relatively less wealth than other districts and student achievement would be average or low and either stable or decreasing over time.

Fluctuations in the number of administrative positions were suspected to occur in medium sized suburban districts with lower relative wealth. These were assumed to be districts where student achievement levels were average or low and may have been decreasing over time.

The greatest stability in the total number of administrative positions were suspected to be relatively wealthy, small to medium sized suburban districts that were experiencing only minimal changes in the enrollment and high levels of student achievement.

In regards to administrator characteristics, it was suspected that those with the highest educational levels and experience were in the highest administrative positions, employed in medium sized wealthy districts with high student achievement or large districts with more varied levels of wealth and student achievement. The relationship between administrators with long tenures without terminal degrees was suspected to be tied to small, rural districts with average or low student achievement levels.

In addition, certain environmental change events were suspected to have an impact on the number of administrators, particularly certain positions. For example, it was suspected that the federal legislation *No Child Left Behind* led to an increase in administrators particularly those specializing in Special Education and Curriculum and Instruction whereas it was suspected that the federal legislation Individuals with Disabilities Education Act and each reauthorization in which the requirements of school districts increased also led to an increase in Special Education administrators.

The outcomes of this study were further clarified and contextualized through the theories. While the literature review detailed the close relationship between popular

Management Theories and educational administration as well as the development of educational administrative practices, the theories chosen provided a broader context and application of the results. More specifically, Organizational and Management Theories provided the context under which school administration had developed and continues to progress. In addition, Turbulence Theory allowed for the use of a gauge to better understand how the changes in the administrative positions and structures are affecting organizations. This research illuminates and contributes to the literature information concerning the relationship between administration size, and administrator, districts and community characteristics as well as how administrative teams are responding structurally to environmental change events.

Ultimately, the theories and literature provided a context within which the results of this study were linked both to the larger historical and societal influences of the field of education administration.

CHAPTER 4

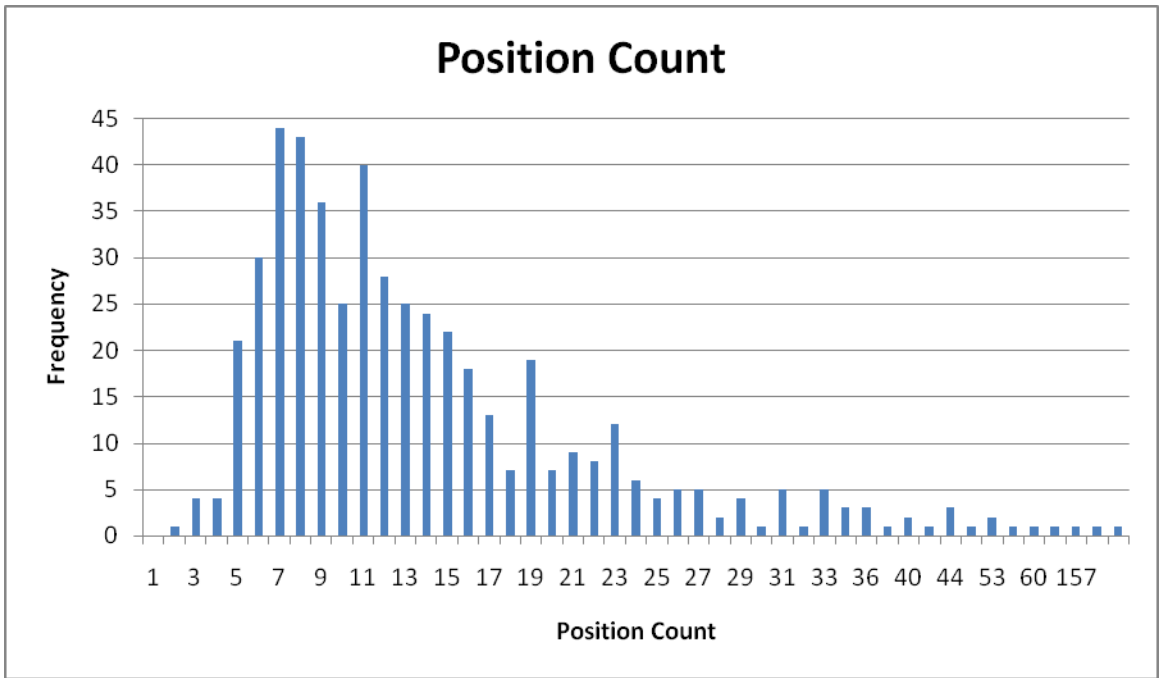
RESULTS

The following data analysis chapter presents a detailed investigation of public school district administration characteristics, structure and size identifying trends and significant relationships between characteristics as well as identifying environmental events that resulted change in administrative structures and size. To identify trends and significant relationships between characteristics, three categories were identified and compared from the 1996-97 school year to the 2006-07 school year: administration, district and community characteristics. This is followed by a detailed analysis of administration size and structure changes that were aligned with environmental change events, primarily legislative, to identify potential correlations that were not otherwise explained by the significant relationships between administration, district and community characteristics.

Administrative Size

The initial analysis is of the size of school district administrations in the final year of the time period, 2006-07. The distribution of size data are presented in Figure 4.1. As demonstrated in Figure 4.1, the number of administrative positions ranged from 1 to 671. The mean was 14.69 with majority of the districts having between 4 and 20 administrators. While there were many recognized approaches toward distinguishing the data for comparison purposes, community type was selected as a result of the mutually exclusive nature of this identification and because these categories are not on a continuum resulting in arbitrary distinctions of the data. In addition, there are two primary benefits of looking at size of an administration by community type. First, there

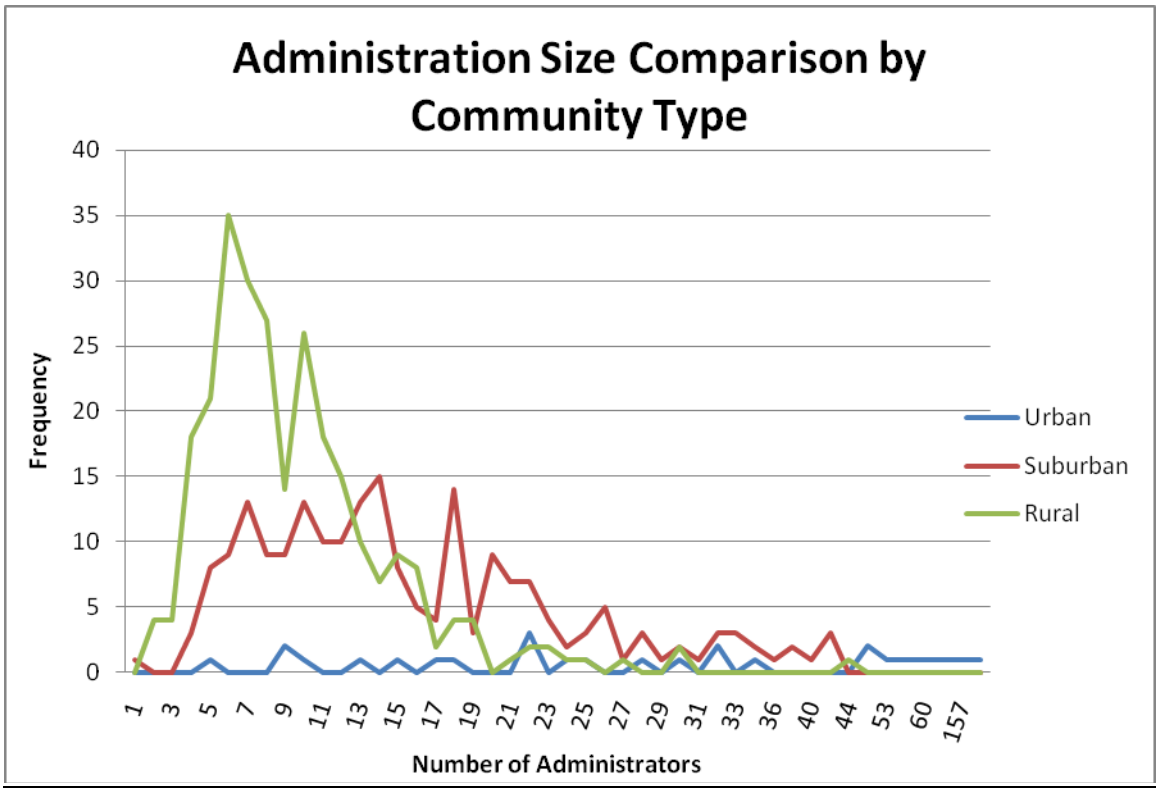
Figure 4.1: Frequency of Positions per District in 2006-07 School Year (N=500)



are patterns in the size of the administration by community type and second, districts from the same community type have similarities in district characteristics. Figure 4.2 compares the administration size by community type for the 2006-07 school year.

The 500 districts included 267 rural district's with a mean of 9.59 administrators, 207 suburban district's with a mean of 15.78 and 26 urban districts with a mean of 58.5 administrators. These data demonstrate administration size differences by community type. Additional related details are presented in Appendix A. Position Count and Change Tables.

Figure 4.2: Administration Size Frequency by Community Types (N=500)



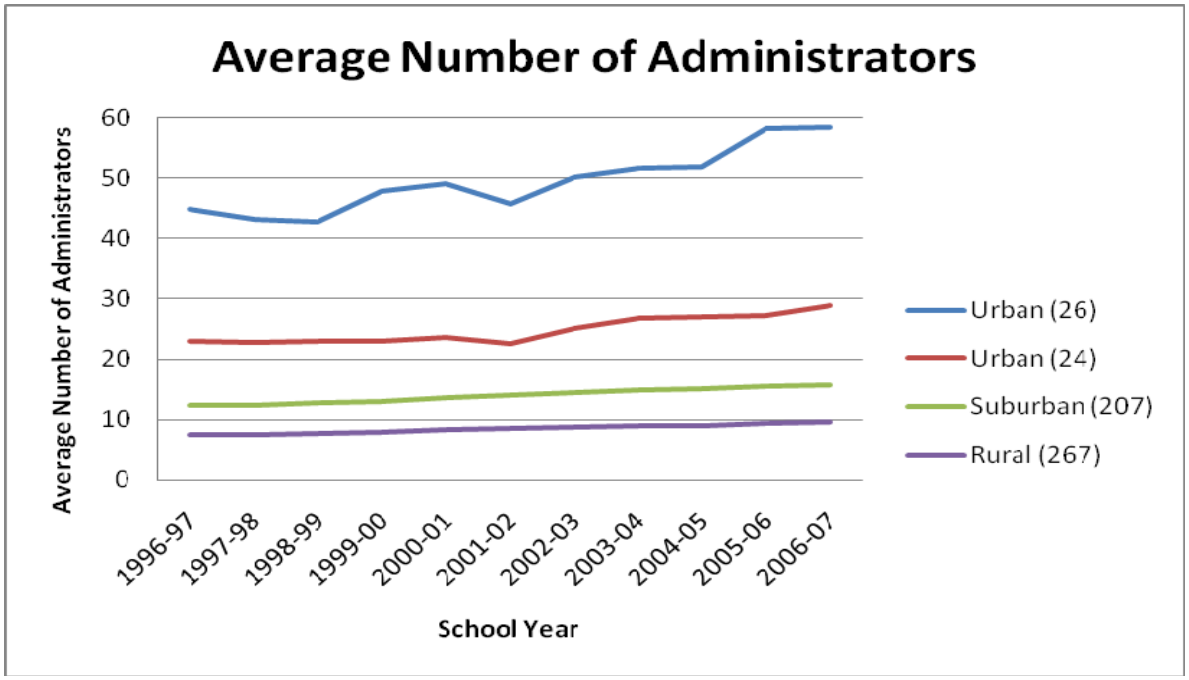
Administrative Positions by School Year and Community Type

As an initial analysis of change across time in administrative positions, the total number of administrative positions by community type was analyzed across the 11 year time period. The urban districts include the two largest school systems in the Commonwealth. Due to the size of these two districts, these data skewed the results. Due to this, the urban district data are presented as Urban (26) that include all urban districts and Urban (24) that have the two largest removed from the data set. The averages for each year by community type are presented in Table 4.1 and depicted in Figure 4.3.

Table 4.1: Administrative Position Count by Community Type and School Year

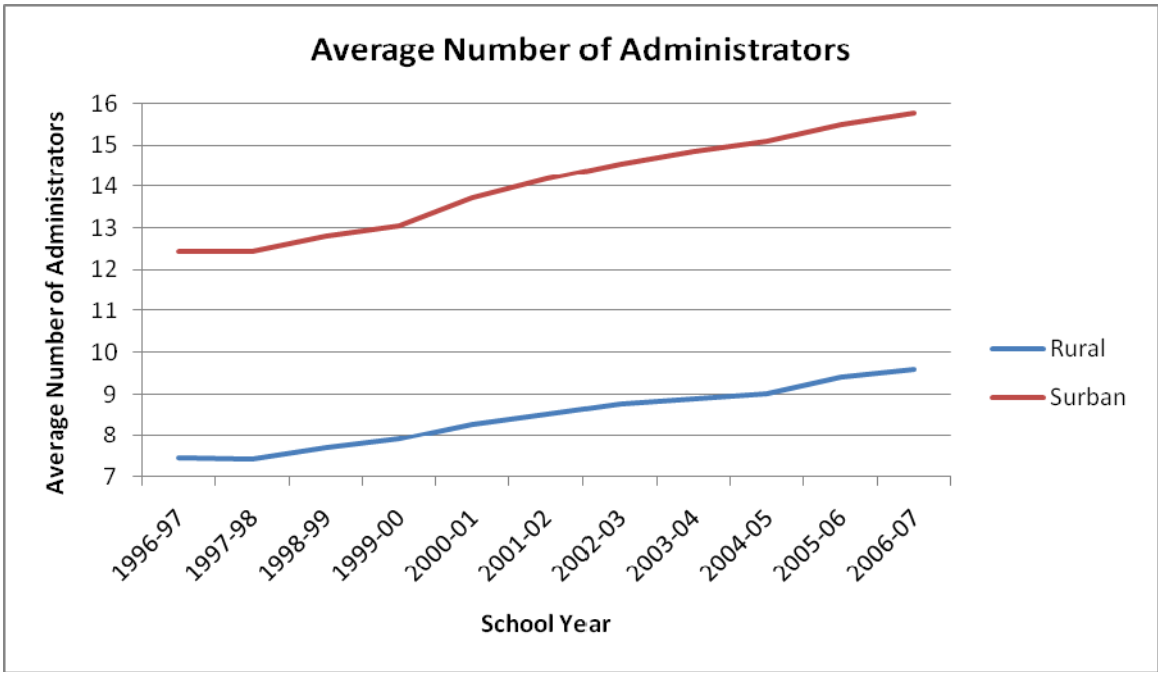
Average #	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Rural	7.46	7.43	7.70	7.91	8.28	8.54	8.76	8.88	9.01	9.42	9.59
Surban	12.45	12.45	12.81	13.06	13.72	14.18	14.55	14.86	15.10	15.51	15.78
Urban (26)	44.85	43.04	42.69	47.73	49.12	45.69	50.12	51.62	51.92	58.35	58.50
Urban (24)	22.92	22.75	23.00	23.08	23.63	22.58	25.00	26.79	27.00	27.29	28.88

Figure 4.3: Average Number of Administrators by Community Type and School Year



As demonstrated in Table 4.1 and Figure 4.3, there was a gradual increase in administrative positions across the 11 years in the data set. Since the data for urban districts somewhat distorts the graph, the same data are presented in Figure 4.4 with the urban districts eliminated.

Figure 4.4: Rural and Suburban Average Number of Administrators by School Year



Additional details concerning average numbers and percent of change during the time period are presented in Appendix B. Administration Size Averages.

To identify trends and significant relationships, administration, district and community characters were analyzed. The administration characteristics included average number of administrators across the time period, direction of administrator position count change, average education level of administrators, average salaries, average total years of service and average unit years of service.

The district characteristics included the aid ratio, average daily membership, Average Yearly Progress, Average Yearly Progress scores and aid ratio, student to administrator ratio, and student size.

The community characteristics included school completion levels, males and females in the workforce, household incomes, population below poverty level, population

above poverty levels, housing occupancy rates and housing occupied levels. By assessing each community by these characteristics, some trends emerged.

Administration Characteristics

Direction of Administration Change

To better assess the changes occurring and to how many districts, the size of each districts' administration during the 1996-97 school year was compared with the size of the administration in the 2006-07 school year. Each district was then categorized as decreasing in administrators over the time period, having no net change or increasing in administrators over the time period. The results of this analysis are summarized by community type in Table 4.2

Table 4.2: Direction of Administrative Change by Community Type

		Total Administrators		
		Decrease	No Net Change	Increase
Rural	Count	24	37	206
267	%	9.0%	13.9%	77.2%
Subur	Count	21	28	158
207	%	10.1%	13.5%	76.3%
Urban	Count	5	1	20
26	%	19.2%	3.8%	76.9%
Total	Count	50	66	384
500	%	10.0%	13.2%	76.8%

A similar percent of districts in all three community types increased administrators over the time period. The rural and suburban districts also had similar percents of districts with no net change. Urban districts did not follow this pattern indicating that these districts had the smallest percentage of districts that did not change the size of the administration from the first year to the final year of the time period.

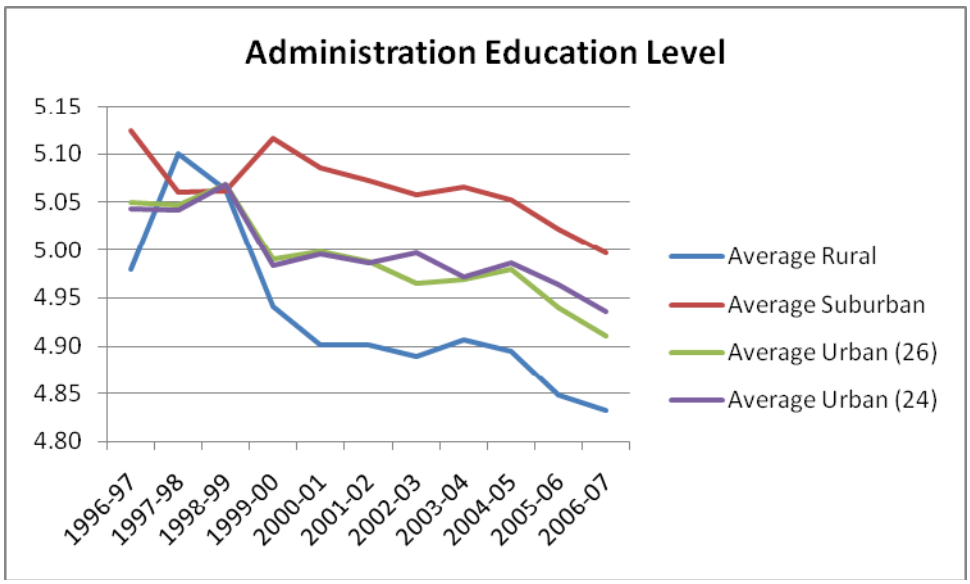
Education Level of Administrators

The highest degree obtained was numerically codified per administrator as follows: Doctorate Degree = 6, Maters Degree = 5, Bachelors Degree = 4, Associates Degree = 3, and a High School Diploma = 2. The average educational level for administrators in urban, suburban and rural districts all declined during the time period. These data are detailed in Figure 4.5 and Table 4.3.

Table 4.3: Average Administration Education Level by Community Type

Education Level	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Average Rural	5.0	5.1	5.1	4.9	4.9	4.9	4.9	4.9	4.9	4.8	4.8
Average Suburban	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.0	5.0
Average Urban (26)	5.1	5.0	5.1	5.0	5.0	5.0	5.0	5.0	5.0	4.9	4.9
Average Urban (24)	5.0	5.0	5.1	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.9

Figure 4.5: Average Administration Education Level by Community Type



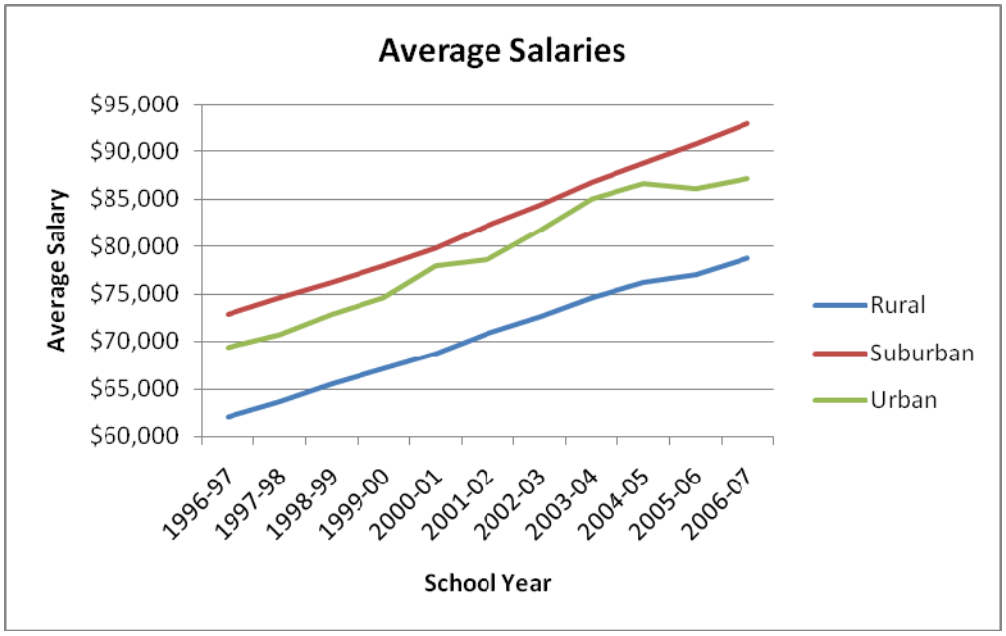
As related to the size of the administration, these data indicate the smallest administrations have the lowest average educational level, the largest administrations are in the middle and the midsized administrations have the highest average education level.

However, all community types experienced decreases in the average education level of the administration. Additional related details are presented in Appendix C. Education Level.

Average Salaries

Average administrator salaries by community type are depicted in Figure 4.6.

Figure 4.6: Average Administrator Salaries by Community Type



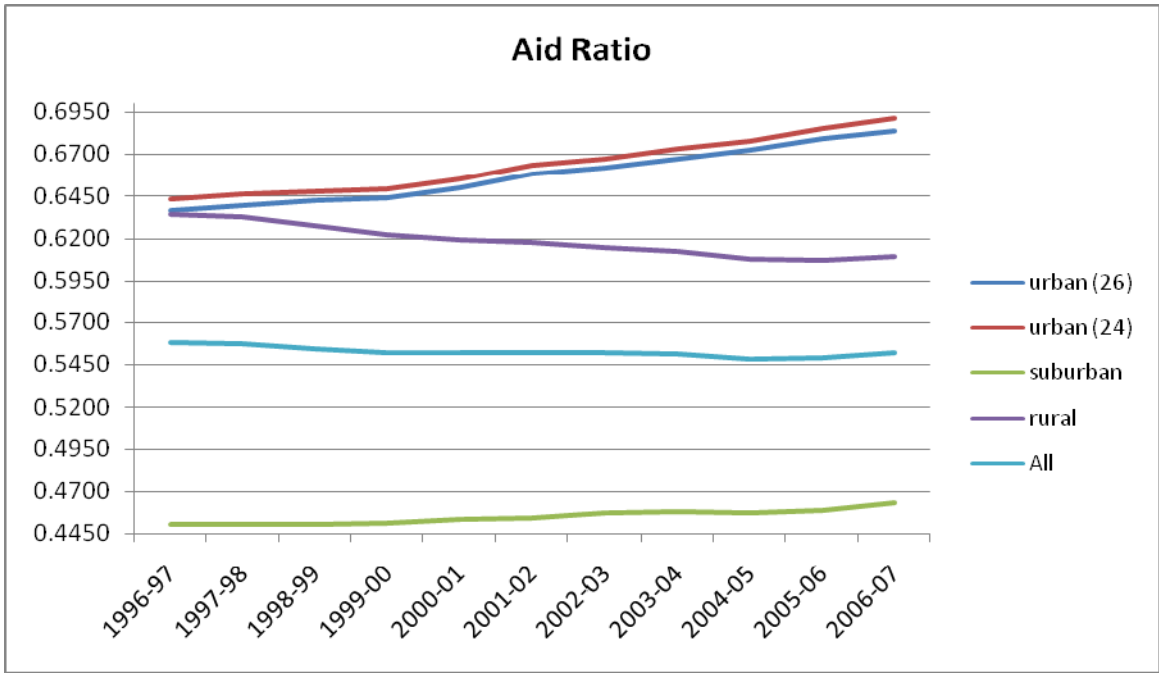
Rural administrations had the lowest average salaries. Urban administrators' average salaries closely followed the suburban administrators' average salaries which were the highest. All three community types indicated increasing average administrator salaries across the time period and are generally consistent with the slope of an average administrative market movement of approximately 3% annually – the historical average during the identified time period. Additional related details are presented in Appendix D.

District Characteristics

Aid Ratio

The aid ratio is an inverse indicator of relative wealth. The lower the aid ratio, the greater the relative wealth of the district. As a result, a decrease in the aid ratio over the time period would reflect increasing relative wealth. Figure 4.7 depicts how the average aid ratios by community type changed over the time period.

Figure 4.7: Average Aid Ratio by Community Type

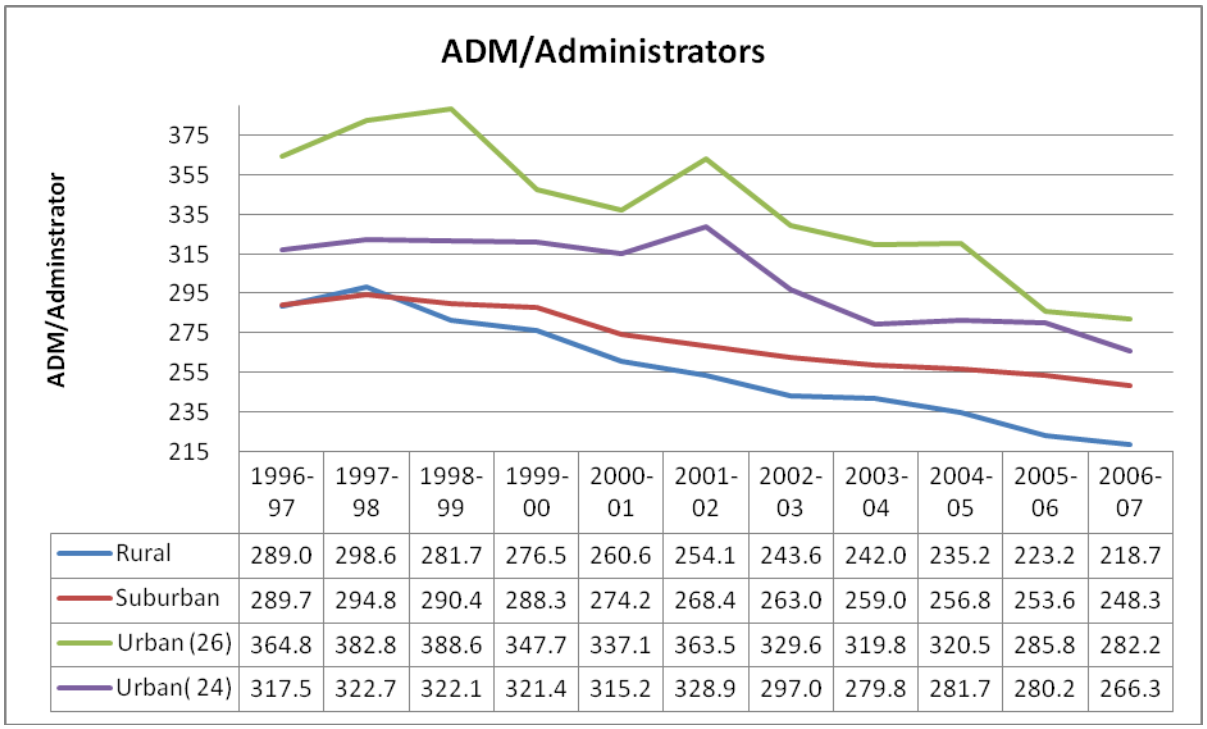


These data indicate that suburban districts with mid-sized administrations have the greatest relative wealth although this was slightly decreasing over the time period. In comparison, rural districts with the smallest administrations had low but increasing relative wealth. Urban districts with the largest administrations had low and decreasing relative wealth. Additional related details are presented in Appendix E. Aid Ratio.

Average Daily Membership

The Average Daily Membership is an indicator of size of a district as measured by the average attendance of students. Figure 4.8 presents the Average Daily Membership per administrator ratio by community type over the time period.

Figure 4.8: Average Daily Membership per Administrator



	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Rural	289.0	298.6	281.7	276.5	260.6	254.1	243.6	242.0	235.2	223.2	218.7
Suburban	289.7	294.8	290.4	288.3	274.2	268.4	263.0	259.0	256.8	253.6	248.3
Urban (26)	364.8	382.8	388.6	347.7	337.1	363.5	329.6	319.8	320.5	285.8	282.2
Urban(24)	317.5	322.7	322.1	321.4	315.2	328.9	297.0	279.8	281.7	280.2	266.3

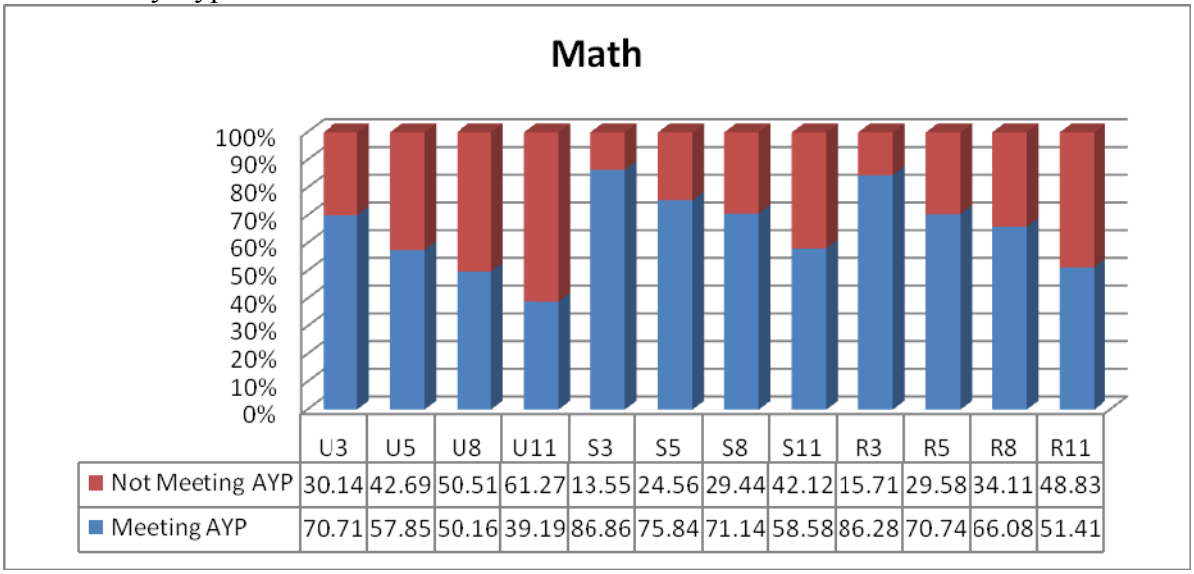
All three community types decreased in the average daily membership per administrator over the time period. Not surprisingly, the urban ratios, despite having the largest administrations were the highest and the rural districts, despite having the smallest administrations had the lowest ratios. Additional related details are presented in Appendix F. Average Daily Membership.

Adequate Yearly Progress

The details of the Adequate Yearly Progress data are presented in Appendix G. Standardized Test Scores. In summation, the trend lines of the percent of students testing

at the different PSSA levels and in the different grades were very similar between suburban and rural districts, the smallest and mid-sized schools and administrations. Urban districts maintained different trend lines across the categories. By adding together the percent of students that tested at proficient and advanced levels in comparison to the percent of students that tested at the basic and below basic levels, the percentage of students meeting AYP by grade level and by community type was identified. Figure 4.9 depicts the percents of students Meeting and Not Meeting AYP in math by grade and community type.

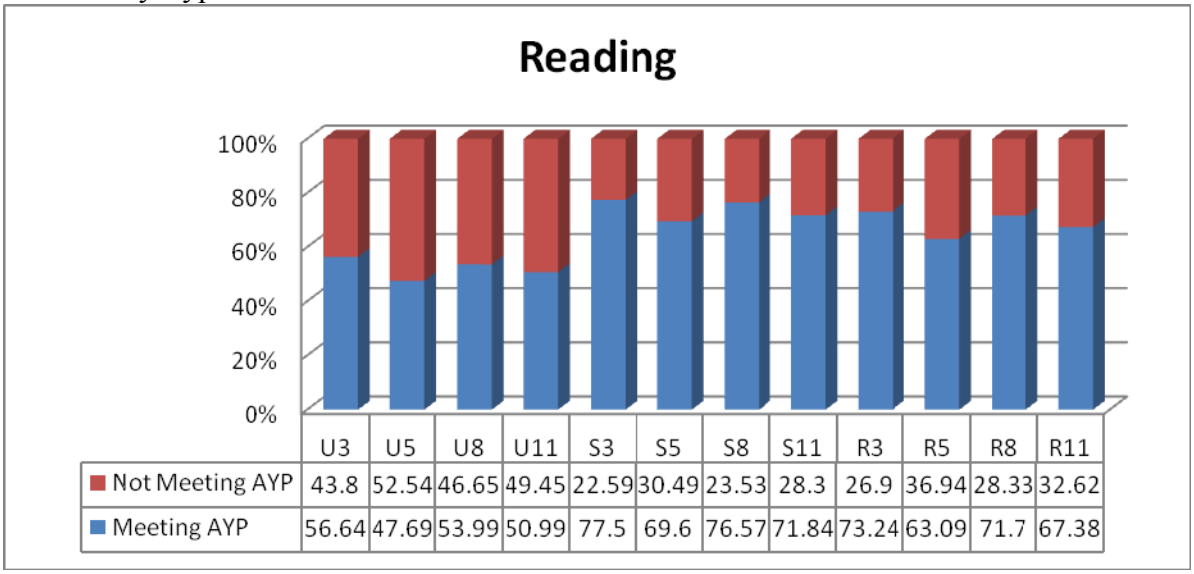
Figure 4.9: Percent of Students Meeting and Not Meeting AYP in Math by Grade and Community Type



	U3	U5	U8	U11	S3	S5	S8	S11	R3	R5	R8	R11
Not Meeting AYP	30.14	42.69	50.51	61.27	13.55	24.56	29.44	42.12	15.71	29.58	34.11	48.83
Meeting AYP	70.71	57.85	50.16	39.19	86.86	75.84	71.14	58.58	86.28	70.74	66.08	51.41

Figure 4.10 depicts the percents of students Meeting and Not Meeting AYP in Reading by grade and community type.

Figure 4.10: Percent of Students Meeting and Not Meeting AYP in Reading by Grade and Community Type



	U3	U5	U8	U11	S3	S5	S8	S11	R3	R5	R8	R11
Not Meeting AYP	43.8	52.54	46.65	49.45	22.59	30.49	23.53	28.3	26.9	36.94	28.33	32.62
Meeting AYP	56.64	47.69	53.99	50.99	77.5	69.6	76.57	71.84	73.24	63.09	71.7	67.38

Of particular interest, all three community types displayed similar patterns from one grade to the next in the percent of students meeting and not meeting AYP in both math and reading. However, and as expected, the mid-sized suburban districts and administrations performed at the highest levels followed closely by the small rural districts and administrations. The largest districts and administrations trailed.

Collectively, the standardized test scores demonstrate the most pronounced similarities between rural and suburban districts in terms of the performance levels of students although suburban students performed slightly better. As measured by student performance, this would indicate mid-sized schools with mid-sized administrations performed the best and smaller administrations overseeing smaller schools performed well. Students in urban districts, also the largest, consistently did not perform at the same levels as districts in the other community types. However, and of particular interest, all three community types demonstrated consistency in the increases and decreases of student performance levels across grades.

AYP and Aid Ratio and Student Size

Significant relationships were identified concerning the percent of students testing Advanced, Proficient, Basic and Below Basic in reading and math by community type with Aid Ratio as well as with Student Size.

Table 4.4: Correlations Between Aid Ratio and Student Size With Math Test Results

	Aid Ratio	**Student Size**	**Student Size without 2 Largest Districts**
3rd Advanced Math	-.465**	-.104*	.018
3rd Proficient Math	.197**	-.005	-.087
3rd Basic Math	.436**	.093*	-.021
3rd Below Basic Math	.405**	.213**	.052
5th Advanced Math	-.540**	-.011	.182**
5th Proficient Math	.310**	-.117**	-.193**
5th Basic Math	.433**	-.002	-.143**
5th Below Basic Math	.423**	.126**	-.043
8th Advanced Math	-.582**	-.017	.183**
8th Proficient Math	.198**	-.120**	-.177**
8th Basic Math	.497**	-.010	-.161**
8th Below Basic Math	.487**	.100*	-.063
11th Advanced Math	-.641**	.006	.225**
11th Proficient Math	-.145**	-.133**	-.127**
11th Basic Math	.374**	-.112*	-.218**
11th Below Basic Math	.520**	.094	-.076

Table 4.5: Correlations between Aid Ratio and Student Size with Reading Test Results

	Aid Ratio	**Student Size**	**Student Size Without 2 Largest Districts**
3rd Advanced Reading	-.592**	-.057	.109*
3rd Proficient Reading	.065	-.124**	-.130**
3rd Basic Reading	.421**	.041	-.092*
3rd Below Basic Reading	.466**	.157**	-.013
5th Advanced Reading	-.642**	-.011	.196**
5th Proficient Reading	-.198**	-.133**	-.034
5th Basic Reading	.472**	-.012	-.153**
5th Below Basic Reading	.524**	.118**	-.093*
8th Advanced Reading	-.671**	-.039	.180**
8th Proficient Reading	.423**	-.077	-.195**
8th Basic Reading	.578**	.026	-.141**
8th Below Basic Reading	.508**	.096*	-.083
11th Advanced Reading	-.622**	-.041	.138**
11th Proficient Reading	.098	-.159**	-.141**
11th Basic Reading	.459**	.000	-.122**
11th Below Basic Reading	.460**	.159**	-.019

As demonstrated, suburban districts, on average, maintained the highest level of relative wealth which had a pattern of negative significant relationships with advanced testing groups. This explains, in part, the highest performance levels in suburban districts.

The correlations of all districts indicate a pattern between student testing and student size. Most generally, a negative significant relationship was identified with the proficient level indicating the smaller the student size, the larger the percent of students

testing proficient. However, the pattern was less consistent when the two largest districts were removed. Most notably, positive significant relationships were identified at the advanced level and negative significant relationships were identified at both the proficient and basic levels. As a result, the student size and AYP correlations indicated mixed results as attributed to the size of the district and the administration.

In summation, two conclusions can be made concerning the relationship between testing groups and student size and aid ratio. First, the greater the district's relative wealth, the larger the advanced groups in both reading and math. The lower the district's relative wealth, the larger the other testing groups. The strongest positive relationships occurred at the basic and below basic levels. Second, the smaller the student size, the larger the student groups testing proficient (and in some cases advanced but these were often not significant or less significant than with the proficient groups). However, with the two largest districts removed these significant negative relationships occurred at both the proficient and basic levels. As expected, significant positive relationships occurred most often at the below basic level indicating the larger the student size, the larger the student group as a percent testing below basic.

In addition, with student size closely related to administration size, some conclusions can be made concerning the relationship between the size of a districts' administration and district characteristics to include student performance levels and relative wealth. Small administrations, and in turn small schools, perform well despite having lower relative wealth. Medium sized administrations, and in turn mid-sized districts, perform well; however, this is mostly attributed to the high relative wealth of the district. Large administrations, and in turn the large schools they oversee, do not perform

as well on standardized tests, and through no action of their own, are also characterized by low relative wealth.

Multiple Relationships Between District Characteristics and Administrator Characteristics

While a number of characteristics were analyzed in an effort to identify relationships, only those characteristics demonstrating significant relationships will be mentioned in this section. There was a relationship between the average unit years of service with aid ratio and student size indicating the higher the aid ratio or lower the relative wealth, the higher the average unit years of service. Administrators served on average longer in districts with lower relative wealth. This lengthened service also provides more leadership stability for districts of low relative wealth.

The greater the student size, the higher the average unit years of service. Suburban districts had a significant relationship between student size and average unit years of service. This supports the conclusion that in suburban districts, the larger the district, the longer an administrator stays in the district. There were also longer years of service in larger districts suggesting greater leadership stability in districts with potentially more turbulence. However, these relationships were different by community type.

Only suburban and rural districts had statistically significant relationships between the aid ratio and the average salary as well as aid ratio and the average unit years of service. This supports the conclusion that the relative wealth of the district in rural and suburban communities affects the average administrator salary and also affects length of service and stability in rural and suburban community school district administrations.

Both suburban and rural districts had statistically significant relationships between student size and average salary. This supports the conclusion that in rural and suburban communities, larger districts are aligned with higher administrator salaries providing a possible motivation for retention.

To summarize the administrator and district characteristics as related to administration size over time, a number of trends emerged all of which are detailed in the appendices. First and most apparent, there were clear trends between the size of the administration, the size of the student body and the community type of the district. Second, both district and administrator characteristics were aligned with the community type. From these data, some conclusions were made concerning the inter-relation between the size of an administration and administrator and district characteristics. Small administrator size was aligned with small schools, rural communities, increasing administrator size, decreasing average administrator education levels, low but increasing wealth, decreasing average daily membership or student size and comparatively high levels of student performance.

Medium administrator size was aligned with mid-sized schools, suburban communities, increasing administrator size, decreasing average administrator education level, high but decreasing relative wealth, increasing average daily membership or student size and the highest levels of student performance.

Large administrator size is aligned with large schools, urban communities, increasing administrator size, decreasing average administrator education level, low and decreasing relative wealth, increasing average daily membership or student size and low

levels of student performance. A consistent and underlying association between administrator size and community type was identified.

Community Characteristics

As a result, and to provide a more complete picture of the trends in administration in public school districts, it is necessary to identify community characteristics which are detailed in Appendix H. Community Characteristics. In summation, the community characteristics data supported and reflected the district data findings. Across the community characteristics, a clear pattern developed with suburban communities leading in many of the categories, followed by rural and then urban. There were few disruptions to this pattern. This was the same pattern that was established by the meeting and not meeting AYP standardized test scores across the three community types with suburban districts performing at the highest level. The community schooling completion data reflected this pattern as well with a greater percent of the population in suburban communities having completed higher levels of schooling as compared to other community types.

As the significant relationships confirmed, there was an inter-relatedness between the size of the administration, characteristics of the administration, characteristics of the district and characteristics of the community. With the interconnectedness between community, district and administration characteristics, it would appear that the public school is a reflection of the community.

However, there were some trends that were present in all three community types that could not be explained by the characteristics already identified. As a result, an alternative explanation for some of these trends within the public schools in the

Commonwealth during the time period was sought. More specifically, the characteristics that were present in all three community types included the decreasing educational levels of administrators, the increasing number of administrators, and the decreasing average years of service. In addition, there were certain points at which there was a disruption in trends that were unexplained as the result of the administration, district or community characteristics or changes within these characteristics. As a result, the following section provides an analysis of the collective changes in public school characteristics to identify the trends that existed between environmental change events and district administrative structure and size.

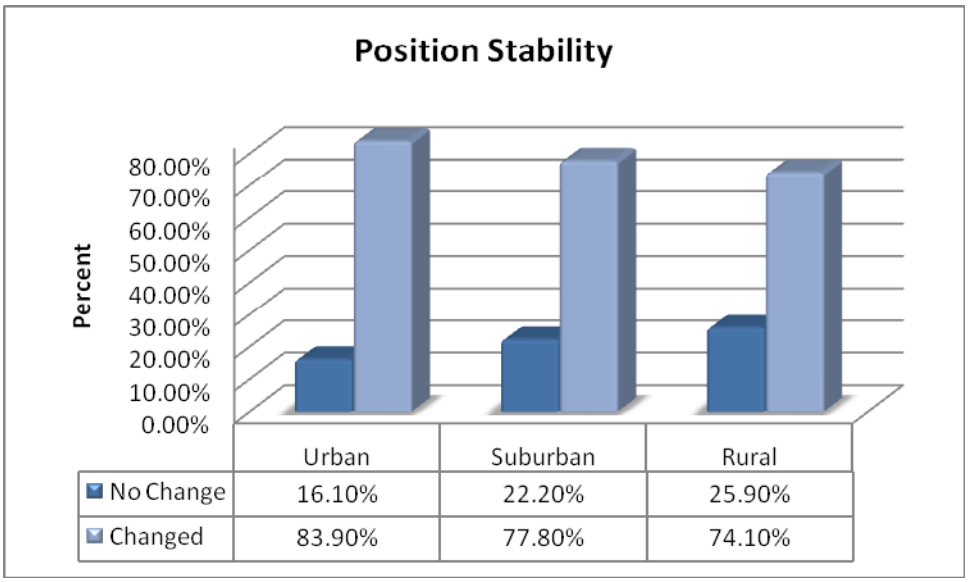
Educational Environment

To help frame this analysis, the first section includes a review of the administrative size and structure that provides more detail than the previous global trends and assists in identifying areas of stability and instability as well as turbulence levels. This is followed by a more detailed analysis of characteristics over the time period to identify disruptions. These disruptions were the aligned with environmental change events in an effort to identify correlations between the change events and noted changes in administration trends.

Administrator Position Stability

An analysis of seventeen administrative positions was conducted for the eleven year time period to determine stability in the number of positions filled over the time frame. This analysis considered each potential position and assessed, if this position was filled at one point during the time period, did the same number of that position remain throughout the time period. These results are detailed in figure 4.11.

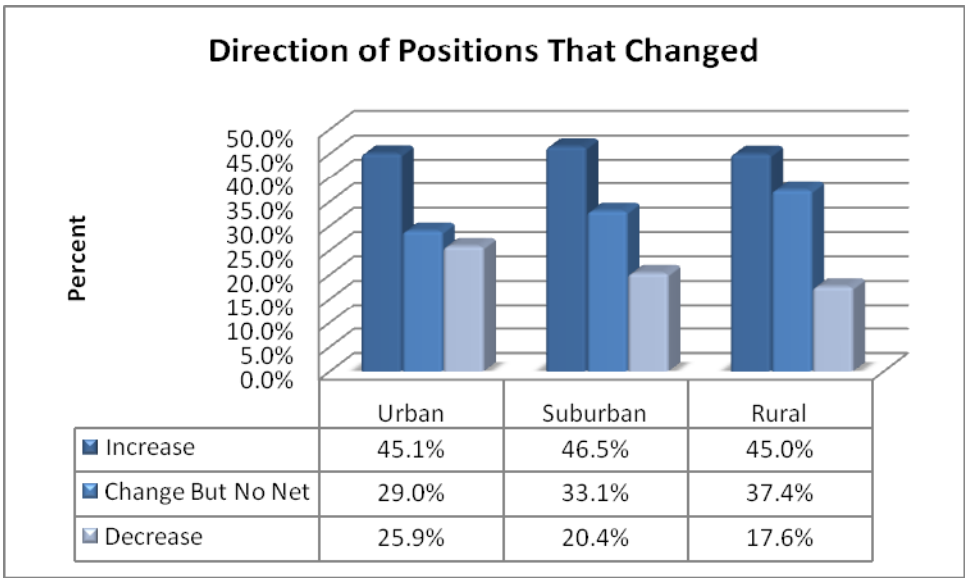
Figure 4.11: Position Stability in Administrative Structure



The positions that changed were far greater than those that remained stable. Consistent with earlier findings, rural districts maintained the highest stability in the number and type of positions filled followed by suburban districts. Urban districts had the lowest level of stability in maintaining the same positions. Additional related details are presented in Appendix I. Administrator Position Stability.

To provide more detail, an analysis of the positions that changed was conducted to assess the direction of change. The results are detailed in figure 4.12.

Figure 4.12: Direction of Positions that Changed by Community Type



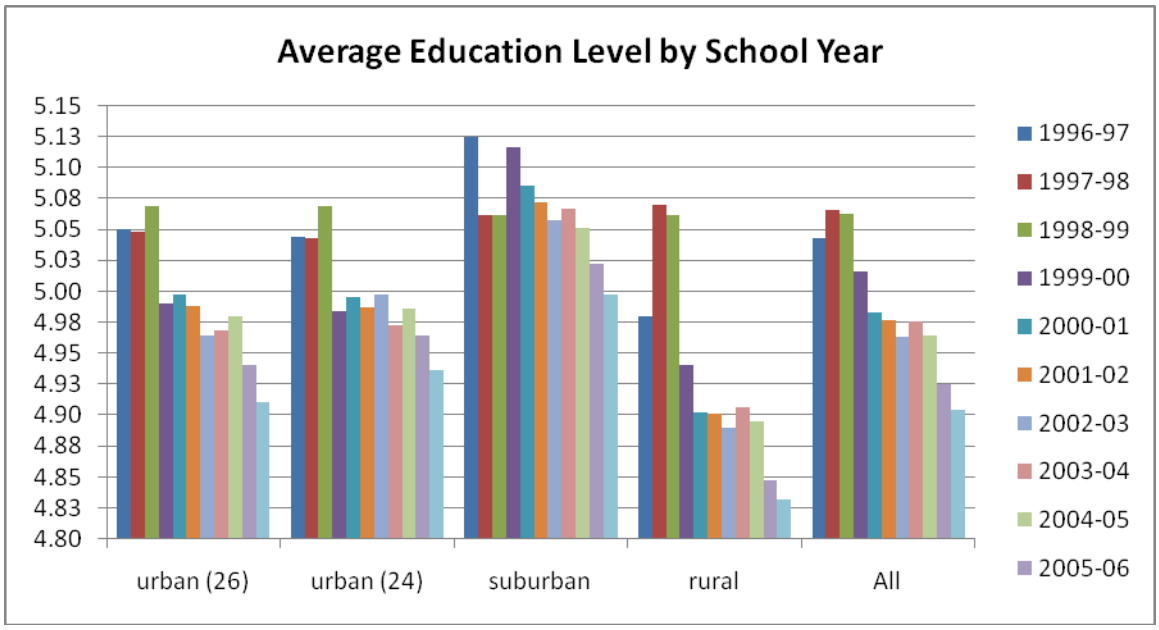
	Urban	Suburban	Rural
Increase	45.1%	46.5%	45.0%
Change But No Net	29.0%	33.1%	37.4%
Decrease	25.9%	20.4%	17.6%

These data indicate there was a relatively low level of stability in administrative positions in terms of the structure. It should be noted that this analysis did not account for turnover within the positions that would certainly add to the lack of stability and increasing levels of turbulence. Additional details concerning the percent change of individual administrative positions are presented in Appendix J. Position Percent Change.

Average Education Level

The average education level of administrators decreased across the time period in all three community types. Figure 4.13 depicts the average education level of administrators by school year and by community type. The highest degree obtained was numerically codified per administrator as follows: Doctorate Degree = 6, Maters Degree = 5, Bachelors Degree = 4, Associates Degree = 3, and a High School Diploma = 2.

Figure 4.13: Average Education Level by School Year and Community Type



Trends were disrupted in suburban and rural districts in 1997-98 and 1998-99.

In 1997 and 1998 a number of laws related to education were passed to include IDEA Amendments, Act 22 (charter schools), Act 50 Local Tax Reform, Act 93 Recodification of the Sunshine Act, Act 93 Recodification of the Ethics Act, and Act 41. Under Act 41, the law permitted two windows for early retirement that were aligned with the decrease in the average education level of administrators. According to the Pennsylvania School Employees Retirement System (PSERS) website, "The first window was open from April 2, 1998 until July 10, 1998 and the second window will extend from April 1, 1999 through June 30, 1999" (PSERS, 10). Also according to the PSERS website, these early retirement windows allowed for approximately 48,000 members to be eligible for early retirement during these two windows. It would be necessary to look more specifically at individual positions that would be most impacted by such laws to make any conclusions concerning the relationship between the disruptions in trends and the legislative environment.

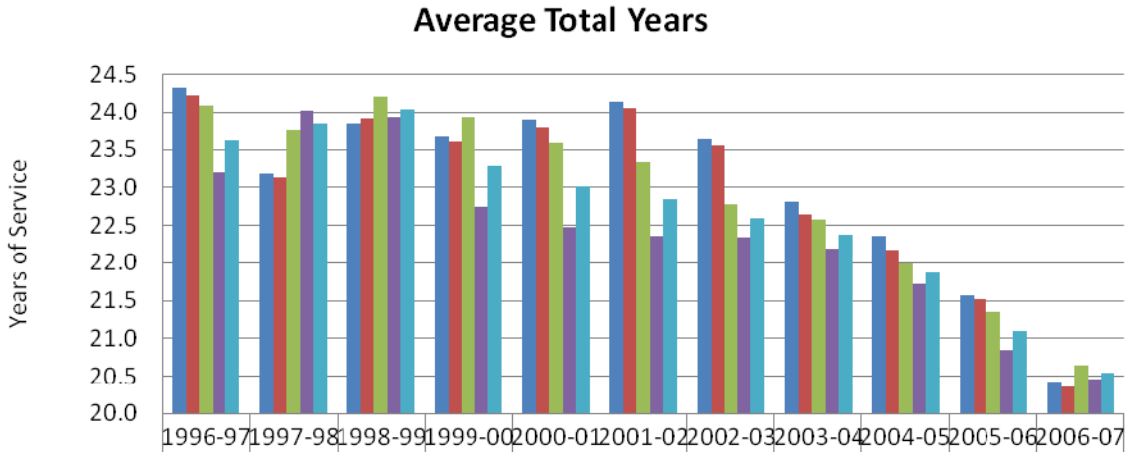
Beyond the legislative environment, the decreasing average educational level is assumed to be the result of the decreasing applicant pool. The data indicated a growing number of applicants with the required minimum credentials are not required to hold the highest degree - a doctorate. As a result, a decline in the number of administrators holding doctorate degrees would decrease the average administrator educational level. In all three community types, the number of doctorates held by individuals holding the Superintendent position dropped to approximately one-third or less in the 1997-98 and 1998-99 school years than the number held by the Superintendents in the 1996-97 and 1999-00 school years.

Average Total Years of Service

The average total years of service, as depicted in Figure 4.14 by year and community type are not specific to years of service in Pennsylvania nor are they specific to public education.

The collective decrease in the average total years of service over the time period was -3.1 years. Contrary to what was expected, in most years of the time period, the rural administrators maintained the lowest average total years of service as compared to the other community types. This may be indicative of decreasing applicant pools, market forces in terms of salaries in other districts attracting more experienced administrators away from rural districts or possibly the result of fewer experienced educators wanting to move into administration.

Figure 4.14: Average Total Years of Service by Year and Community Type



	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
urban (26)	24.31	23.18	23.85	23.67	23.90	24.14	23.63	22.80	22.34	21.56	20.43
urban (24)	24.22	23.13	23.90	23.59	23.80	24.05	23.55	22.64	22.16	21.51	20.35
suburban	24.07	23.74	24.20	23.93	23.57	23.33	22.77	22.57	21.98	21.34	20.64
rural	23.19	24.01	23.93	22.74	22.47	22.34	22.33	22.19	21.71	20.84	20.46
All	23.62	23.85	24.04	23.28	23.00	22.85	22.58	22.37	21.86	21.09	20.53

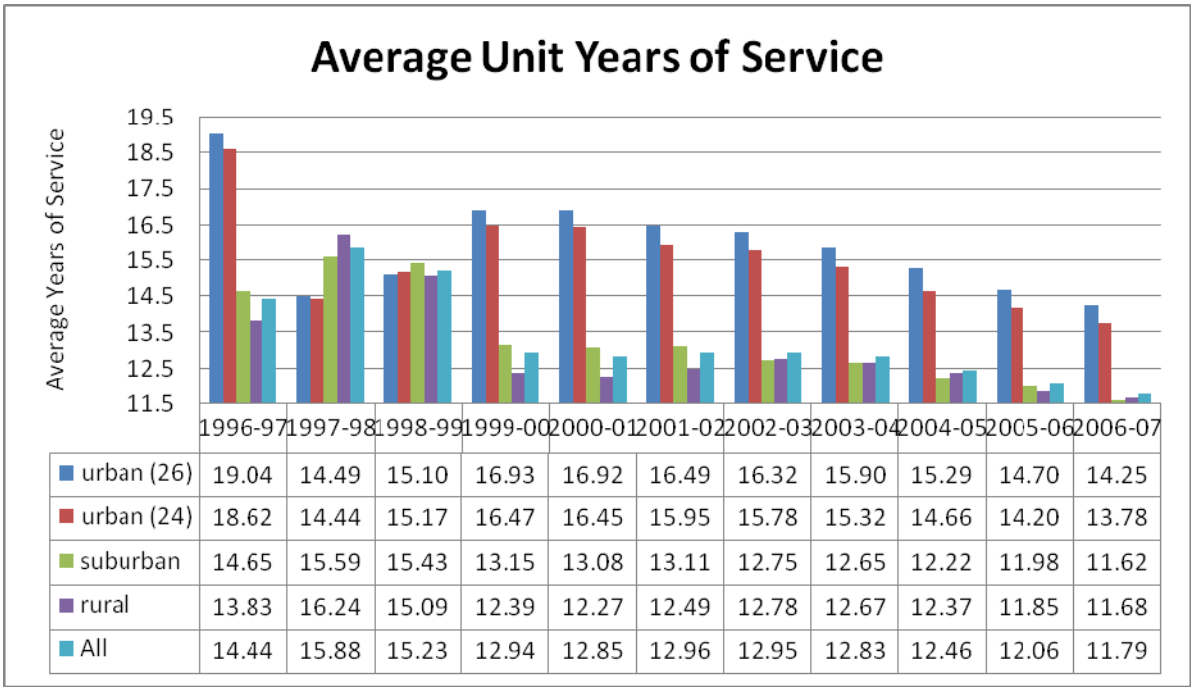
As the result of Act 41 "30 and Out," decreases in the average total years of service in all community types in 1998 and 1999 was expected. In addition, there was a gap between the urban average total years of service and the average total years of service of administrators in the other community types from 1999 through 2003. This gap continued in the average unit years data through the end of the time period.

Average Unit Years of Service

Figure 4.15 depicts the average unit years of service of administrators by year and by community type. In contrast to the average total years of service data, these data represent the average continuous years of service of the administrators in the same district. When comparing these data with the average total years of service data, some conclusions concerning administrator movement between districts as opposed to retirements were identified. These data indicated that urban administrators have more

experience and longer tenures in the same district than their rural and suburban counterparts. The leveling by the end of the time period suggests the average urban administrator did not necessarily have more experience but continued in the same district longer. This may also be indicative of hiring of internal candidates for open urban administration positions.

Figure 4.15: Average Unit Years of Service by Year and Community Type



	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
urban (26)	19.04	14.49	15.10	16.93	16.92	16.49	16.32	15.90	15.29	14.70	14.25
urban (24)	18.62	14.44	15.17	16.47	16.45	15.95	15.78	15.32	14.66	14.20	13.78
suburban	14.65	15.59	15.43	13.15	13.08	13.11	12.75	12.65	12.22	11.98	11.62
rural	13.83	16.24	15.09	12.39	12.27	12.49	12.78	12.67	12.37	11.85	11.68
All	14.44	15.88	15.23	12.94	12.85	12.96	12.95	12.83	12.46	12.06	11.79

A notable decrease in the average unit years of service occurred in suburban and rural districts in the 1999-00 school year indicating a number of moves to other districts. In contrast, the urban districts increased in the average unit years of service and maintained a higher average than the other community types for the remainder of the time period. This would suggest urban districts are most likely hiring internal candidates for administrative positions or have fewer long term incumbents leaving the district. This may reflect more early retirements and corresponding moves to other districts in rural and suburban communities as compared to urban administration.

The collective decrease in the Average Unit Years of Service over the time period was -2.65 years. This, in comparison to the larger collective decrease in Average Total Years of Service of -3.1 years suggests the most experienced educators may be retiring, and with time, administrators are becoming less likely to stay in the same school district for as many years as they collectively had at the beginning of the time period. From a management perspective, this requires more resources for the attraction and hiring of new employees.

To provide a more detailed analysis of changes that have occurred during the time period and to better identify environmental disruptions, the following sections review several characteristics by community type and by group of administrative positions broken down by contracted positions, principals and Act 93 Non Principal positions: stability of positions, position counts, average education levels of administrators, average total years of service, average unit years of service and average salaries. The goal of these analyses was to identify points at which environmental changes had occurred that may have resulted in an identified disruption in trends. These analyses will be followed by a pre and post 2001 analysis due to the major implications of No Child Left Behind on public education.

Contracted Positions

Individually contracted positions include the Superintendent, Assistant Superintendent, Business Manager and Director of Human Resources. These positions are individually contracted because they are excluded from the Act 93 group due to the direct role these positions play in determining and implementing policy and the potential

conflict of interest if these positions were Act 93 and advising the board regarding compensation plans for school administrators (Fields, 68-69).

Stability

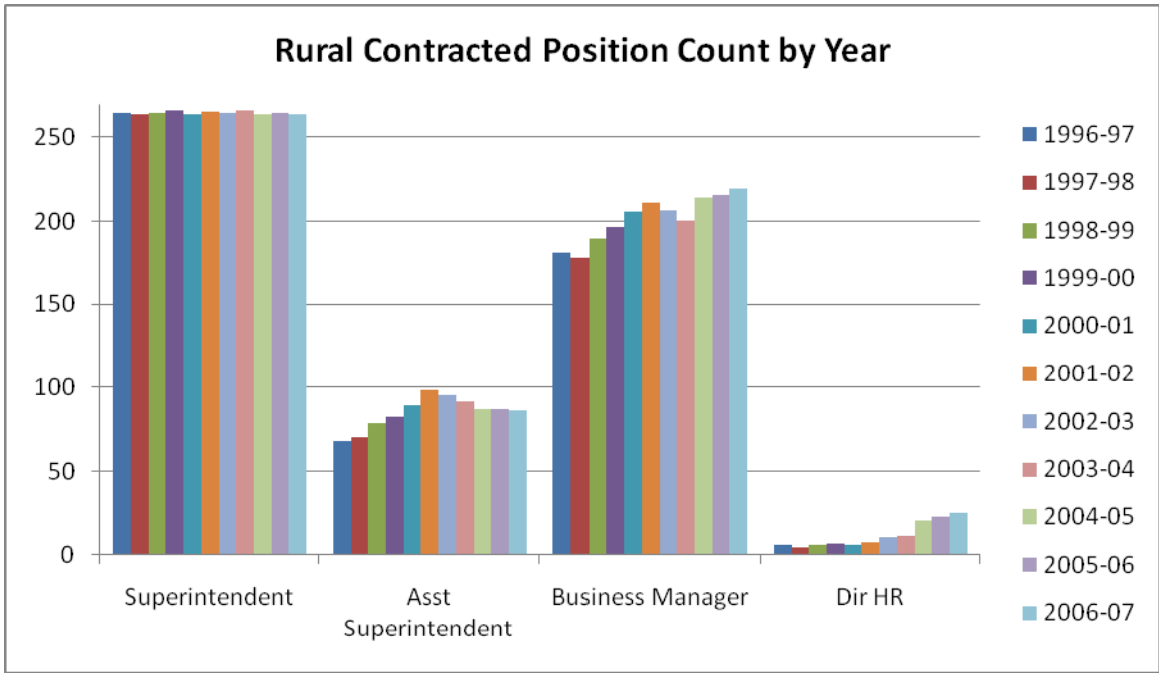
Positions identified as stable are those administrative positions that were continuously occupied (although not necessarily by the same incumbent) during the time period indicating the position was stable within the administrative structure. The contracted positions that were stable (not changing) during the timeframe in district structures are detailed in Table 4.6. The percentages were presented to norm the data to allow for a comparison of the stability of the contracted positions across the community types.

Table 4.6: Stable Contracted Positions During the Time Period by Community Type

Contracted Positions	Stable Positions	Percent
Rural Superintendent	242	91%
Suburban Superintendent	190	**92%**
Urban Superintendent	23	88%
Rural Asst Superintendent	18	7%
Suburban Asst Superintendent	15	7%
Urban Asst Superintendent	3	**12%**
Rural Business Manager	112	42%
Suburban Business Manager	88	**43%**
Urban Business Manager	6	23%
Rural Director HR	0	0%
Suburban Director HR	14	7%
Urban Director HR	3	**12%**
Rural Total	372	35%
Suburban Total	307	**37%**
Urban Total	35	34%

The level of stability per the contracted positions did not indicate that one community type consistently had a higher level of stability, rather it changed by position. Collectively, suburban contracted positions had a slightly higher percent of stable positions within the structure. Figure 4.16 details the number of contracted positions in rural districts per each year of the time period.

Figure 4.16: Rural Contracted Position Count by Year

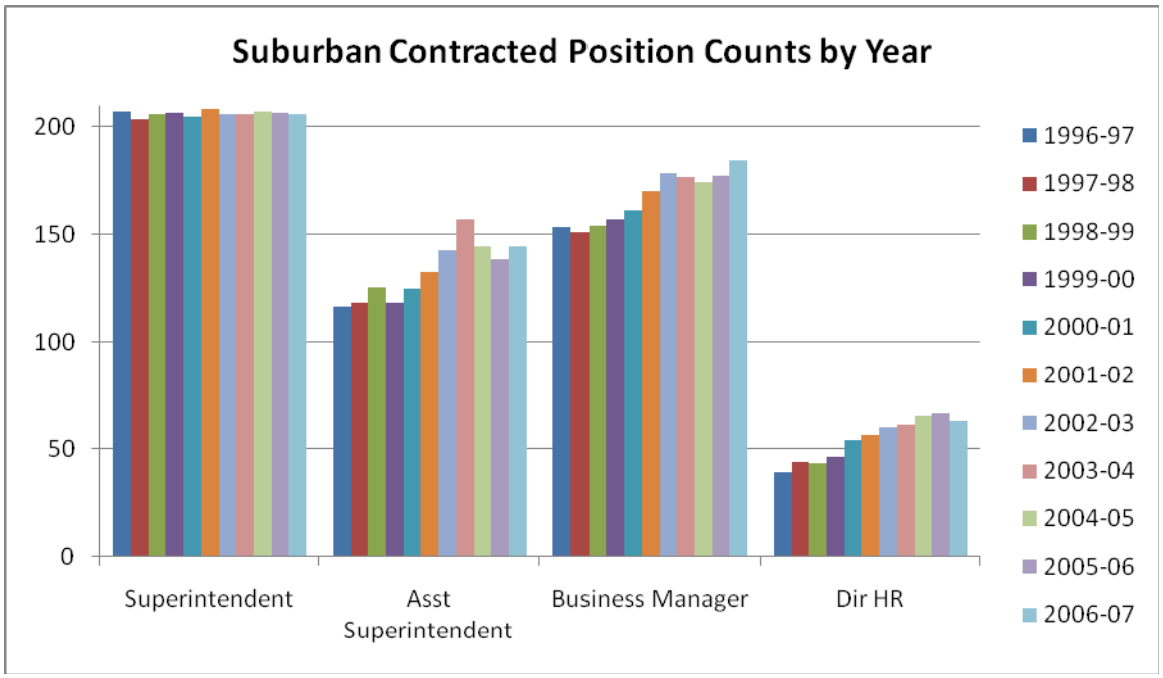


These data indicate that the greatest contracted position increases occurred with the Business Manager position. This is not surprising as the result of the increasingly complex fiscal environment of public schools. The environmental changes impacting the district finances that occurred during the time period include Act 50 of 1998 Local Tax Reform, Act 16 of 2000 GASB Accounting Rules, Act 9 of 2001 PSERS amendments creating Class T-D retirement provisions, Act 234 of 2002 Return to School Service of PSERS Annuitants (further amended by Act 63 of 2004), Act 72 of 2004 Property Tax Reform/Referendum and Act 1 of 2007 Tax Relief. The changing and increasing fiscal

oversight measures are suggestive of cause and a correlation with the increasing number of Business Manager positions.

In addition, the rural Director of Human Resources positions began to increase towards the end of the time period. This could have been reflective of the need for a position to focus on human resource issues in response to the increasing rates of turn-over, the need to hire employees identified as Highly Qualified under NCLB and to ensure currency of certifications under the Act 48 of 1999 Continuing Professional Education for Employees. Figure 4.17 depicts the suburban contracted number of positions by school year.

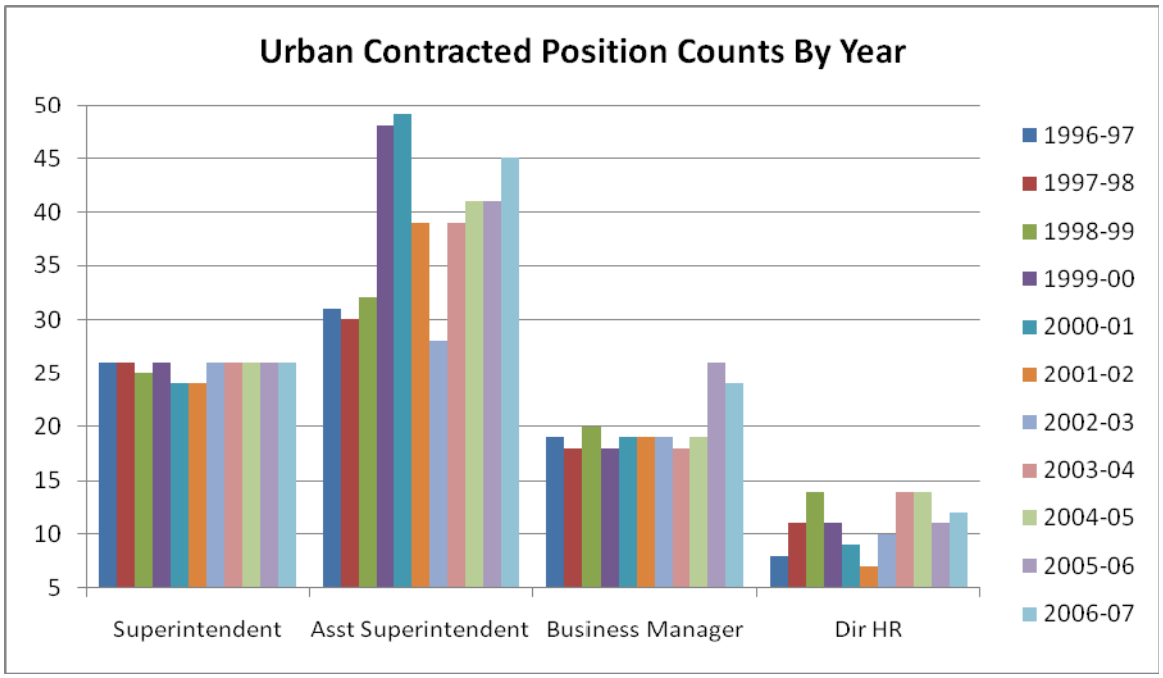
Figure 4.17: Suburban Contracted Position Count by Year



Suburban districts increased in the number of Business Manager and Director of Human Resources positions similar to rural districts. This was reflective generally of changes in the educational environment. In addition, suburban districts increased Assistant Superintendent positions. These increases were most notably aligned with the initial

implementation of No Child Left Behind in 2001. The more recent decreases were difficult to attribute to a single change event. Figure 4.18 depicts the number of urban contracted positions by year.

Figure 4.18: Urban Contracted Position Count by Year



The Assistant Superintendent position in urban districts increased notably in the 1999-00 and 2000-01 school years. Business Manager positions increased in the final two years of the time period aligned with Act 72 and Act 1. These data are skewed as the result of far fewer urban districts of much greater size. These increases were attributed to few districts specifically and were not necessarily reflective of an occurrence in the urban educational environment at the time.

Total Years of Service

Table 4.7 presents the average total years of service of contracted administrators in education by community type.

Table 4.7: Contracted Average Total Years of Service by Community Type

Average Total Years of Service	Rural	Suburban	Urban
Superintendent	29.2	30.2	27.1
Asst Superintendent	26.2	27.3	27.2
Business Manager	16.3	17.2	17.2
Dir HR	14.8	20.2	19.1

Across the contracted positions, the average total years of service were highest in suburban districts suggesting the most experienced contracted educators were in suburban districts. Additional details and the analysis of disruptions per environmental change events are presented in Appendix K. Total Years of Service.

Unit Years of Service

The following section presents average unit years of service or the average years of service data of contracted administrators in the same district but not necessarily the same position. Table 4.8 details the average years of service in the district across the time period per each of the four contracted positions by community type.

Table 4.8: Contracted Average Unit Years of Service by Community Type

Average Unit Years of Service	Rural	Suburban	Urban
Superintendent	13.7	14.1	15.2
Asst Superintendent	13.1	14.3	19.2
Business Manager	12.0	11.1	11.6
Dir HR	11.8	12.0	13.4

The highest average unit years of service for three of the four contracted positions were in urban communities. The one exception was the Business Manager position with the highest service in rural communities. Additional details and the analysis of the environmental change events are presented in Appendix L. Unit Years of Service.

Principal Positions

The following section details the stability of positions, the average educational levels, the average total years of service, the average unit years of service and the average salaries of Principals during the time period and by community type.

Stability

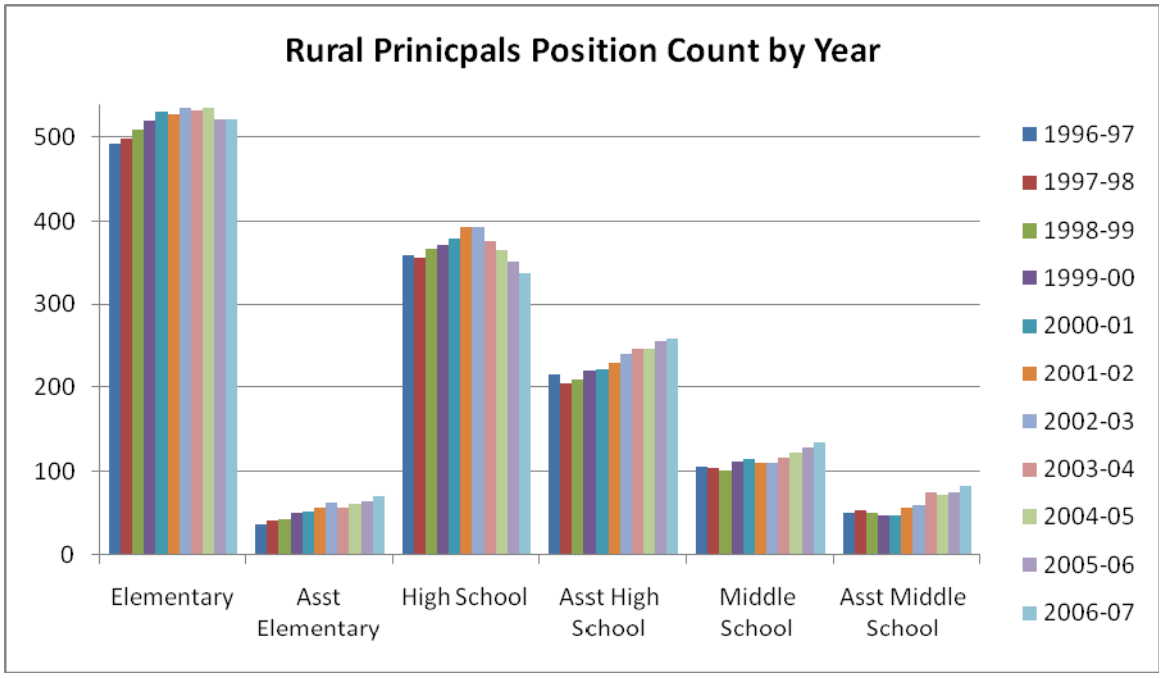
This section details the stability of Principal positions during the time period. More specifically, Table 4.9 details the number and percent of Principal positions by community type that did not fluctuate but rather remained stable in the number of principal positions in the administrative structure.

Table 4.9: Stable Principal Positions During the Time Period by Community Type

Principals	Stable Positions	Percent
Rural High School	88	**33%**
Suburban High School	55	27%
Urban High School	7	27%
Rural Asst High School	26	**10%**
Suburban Asst High School	20	**10%**
Urban Asst High School	2	8%
Rural Middle School	35	13%
Suburban Middle School	42	**20%**
Urban Middle School	2	8%
Rural Asst Middle School	7	3%
Suburban Asst Middle School	13	**6%**
Urban Asst Middle School	1	4%
Rural Elementary School	91	**34%**
Suburban Elementary School	61	29%
Urban Elementary School	1	4%
Rural Asst Elementary School	3	1%
Suburban Asst Elementary School	4	**3%**
Urban Asst Elementary School	0	0%
Rural Total	250	**16%**
Suburban Total	195	**16%**
Urban Total	13	8%

Consistently, suburban and rural principal positions maintained the highest level of stability within the structure. In addition, all principal positions had higher percents of stability within the structure than assistant principal positions. This trend was consistent across community types. Figure 4.18 depicts the number of rural Principal positions by school year.

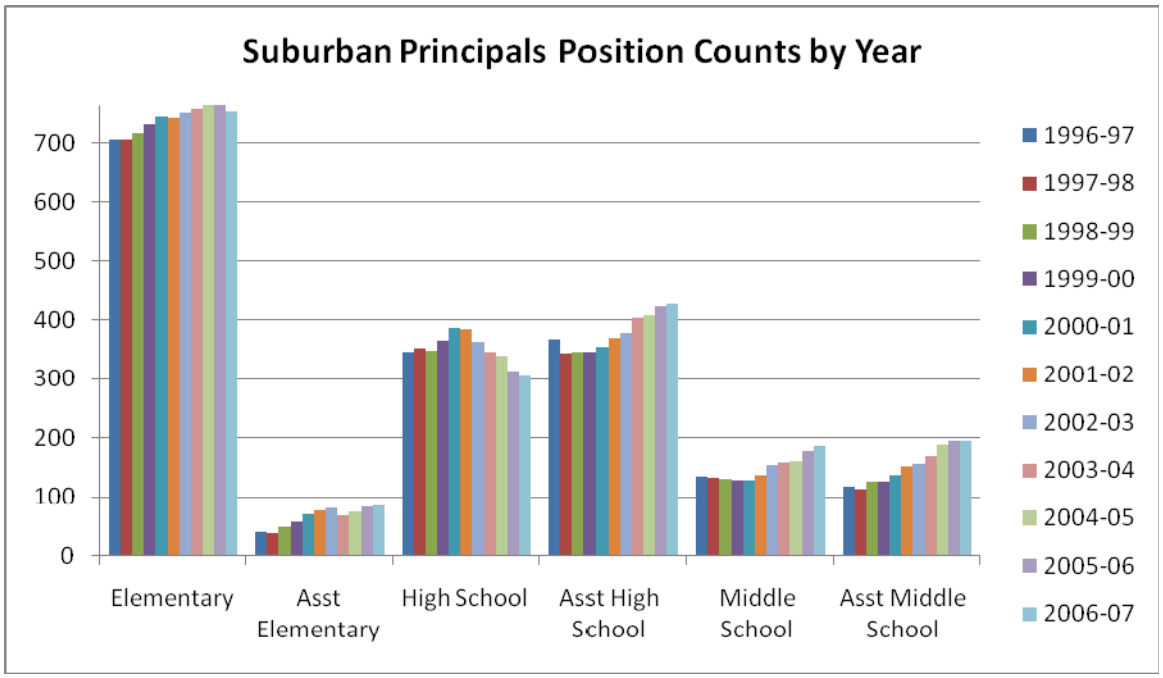
Figure 4.19: Rural Principals Position Count by Year



The only rural Principal position with a net decrease over the time period was the High School Principal. Towards the end of the time period, the rural Elementary Principal position also began to decrease but not below the 1996-97 school year count. All other rural Principal positions increased during the time period. The gradual or incremental changes across the rural Principal positions indicate there was not one environmental change event causing change. More likely, the gradual changes were reflective of collective forces and support the conclusion of stability in rural

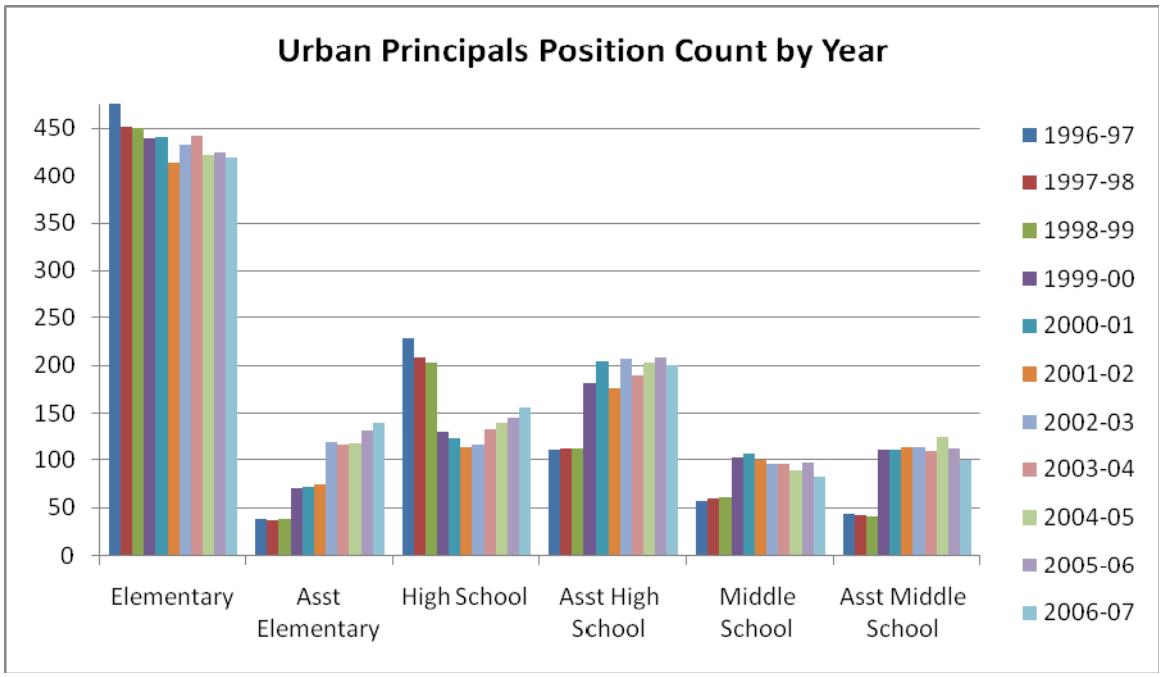
administrative structures. Figure 4.20 depicts the number of suburban Principal positions by school year.

Figure 4.20: Suburban Principals Position Count by Year



The only suburban Principal position with a notable decrease was the High School Principal. All other suburban Principal positions increased during the timeframe. The Assistant Principals at both the Middle and High School levels outnumbered the Principals. This could have been the result of increased educational programming requirements – most increases aligned with the implementation of No Child Left Behind in 2001 - and would in turn impact the average educational level, totals years of service and unit years of service. The gradual changes are also reflective of stability in suburban administrative structures. Figure 4.21 depicts the number of urban Principal positions by school year.

Figure 4.21: Urban Principals Position Count by Year



The trends in the number of urban Principal positions were reflective of environmental influences. However, identifying correlations between Principal position counts and environmental changes may be premature. The continuous need for schools to meet more and more demands may have led to management decisions to increase the number of administrators to better meet expectations and to decrease the higher level administrative positions to curb costs. The most notable difference occurred just after Act 41. Act 41 may have allowed districts the opportunity to restructure after a number of Principals opted for early retirement. The best evidence of this was the High School Principals positions. The same year in which there was a dramatic drop in the Principals, the Assistant Principals had an equivalent increase in positions. In contrast, the Elementary Principals incrementally decreased, while the Assistant Elementary Principal positions incrementally increased. The Middle School Principals most notably increased

in the 1999-00 school year and the Principals and Assistant Principals at this level did not trend opposite each other.

Total Years of Service

Table 4.10 details the average total years of service of principals across the time period.

Table 4.10: Principals Average Total Years of Service by Community Type

Average Total Years of Service	Rural	Suburban	Urban
Elementary	23.9	24.1	23.9
Asst Elementary	18.4	19.5	20.7
High School	22.6	23.8	25.6
Asst High School	19.2	20.2	23.0
Middle School	23.0	24.4	24.5
Asst Middle School	17.5	19.0	21.0

As expected, at all levels and in all community types, the Principals' average total years of service in education was greater than the corresponding Assistant Principals average total years of service. With the exception of the Elementary Principals, the urban averages were the highest, followed by suburban Principals. Rural districts consistently had the lowest average total years of service for Principals. Also of interest was the highest average total years of service were different by community type. In rural districts, the Elementary School Principals had the highest average. In suburban districts, Middle School Principals had the highest average. In urban districts, the High School Principals had the highest average total years of service. Additional details are presented in Appendix K. Total Years of Service.

Unit Years of Service

Table 4.11 details the average years of service of principals in the current district across the time period by community type.

Table 4.11: Principals Average Unit Years of Service by Community Type

Average Unit Years of Service	Rural	Suburban	Urban
Elementary	15.0	14.4	19.7
Asst Elementary	11.5	12.9	17.0
High School	12.9	13.6	20.6
Asst High School	11.9	12.9	18.8
Middle School	14.8	14.8	20.0
Asst Middle School	8.6	10.8	16.9

These data indicate, on average, Principals in urban communities remained in the district the longest as compared to rural and suburban districts. Additional details are presented in Appendix L. Unit Years of Service.

Act 93, Non Principals

Stability

This section analyzes the Act 93, Non Principal positions to include Athletic Directors, Supervisors, Directors of Management Information Systems, Food Service Coordinators and Other which primarily represents Computer Technicians. To provide a baseline of stability and a point of comparison across the community types, Table 4.12 details the stable Act 93, Non Principal positions in administrative structures over the timeframe by community type. Generally, the stability of these positions was expected to be lower than the contracted and Principal positions. This was expected because many administrative structures divide the duties of these positions among contracted and

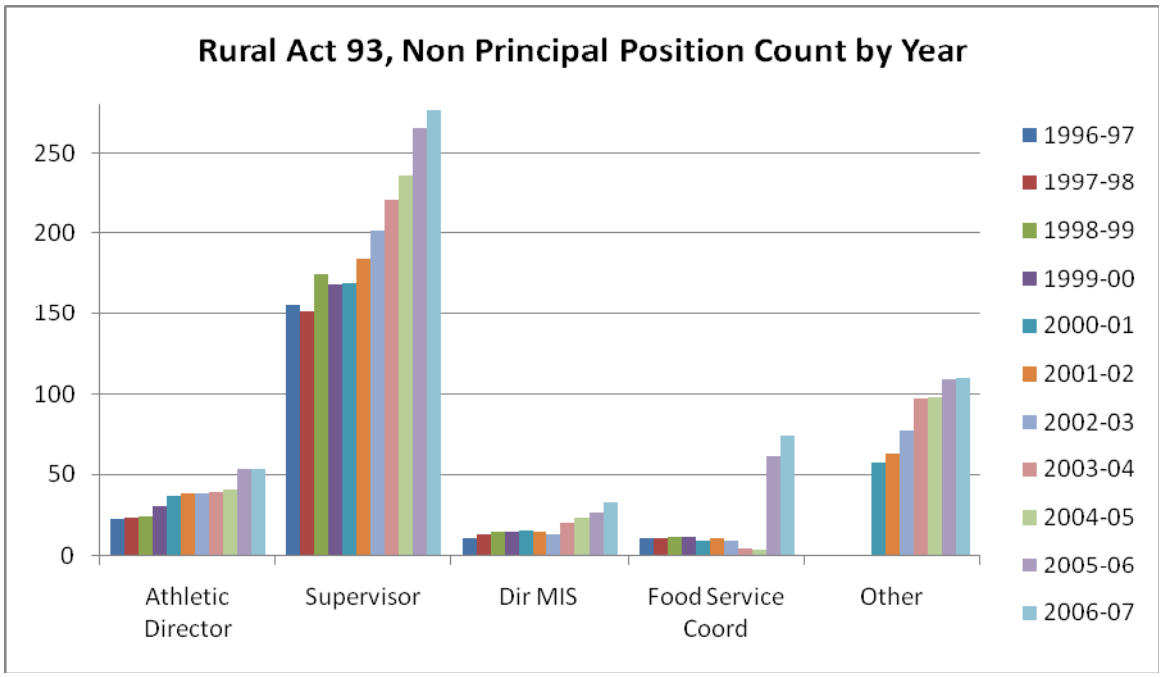
principal positions – leaving these positions to be added and removed from the structure based on need. However, with increasing demands and a complex legal environment, these positions have become and will continue to become more prevalent and stable with time.

Table 4.12: Stable Act 93, Non Principal Positions During the Time Period by Community Type

Act 93 Non-Principals	Stable Positions	Percent
Rural Athletic Director	8	3%
Suburban Athletic Director	16	**8%**
Urban Athletic Director	2	**8%**
Rural Supervisor	18	7%
Suburban Supervisor	18	**9%**
Urban Supervisor	2	8%
Rural Dir MIS	2	1%
Suburban Dir MIS	5	2%
Urban Dir MIS	1	**4%**
Rural Food Service Coord	1	0%
Suburban Food Service Coord	1	0%
Urban Food Service Coord	1	**4%**
Rural Other	0	0%
Suburban Other	0	0%
Urban Other	0	0%
Rural Total	29	2%
Suburban Total	40	4%
Urban Total	6	**5%**

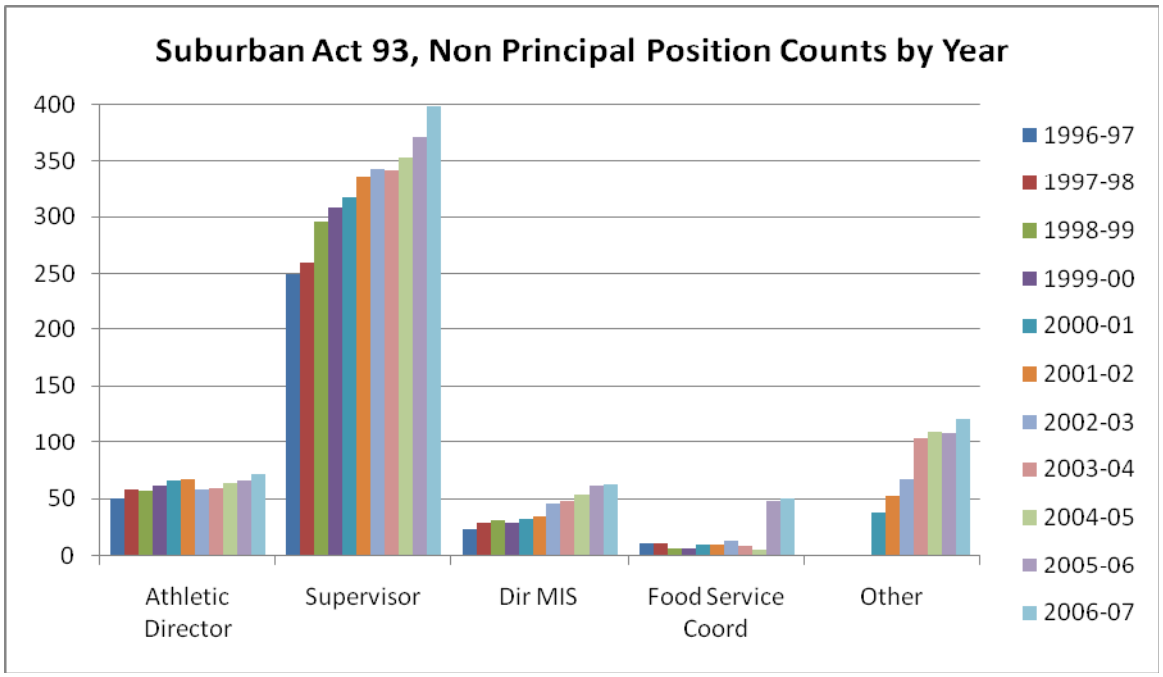
There were consistently low percents of Act 93, non principal position stability within structures across the time period. There was not one category in terms of position and community type that reached a double digit percent of stability. Figure 4.22 depicts the Rural Act 93, Non Principal Position Count by Year.

Figure 4.22: Rural Act 93, Non Principal Position Count by Year



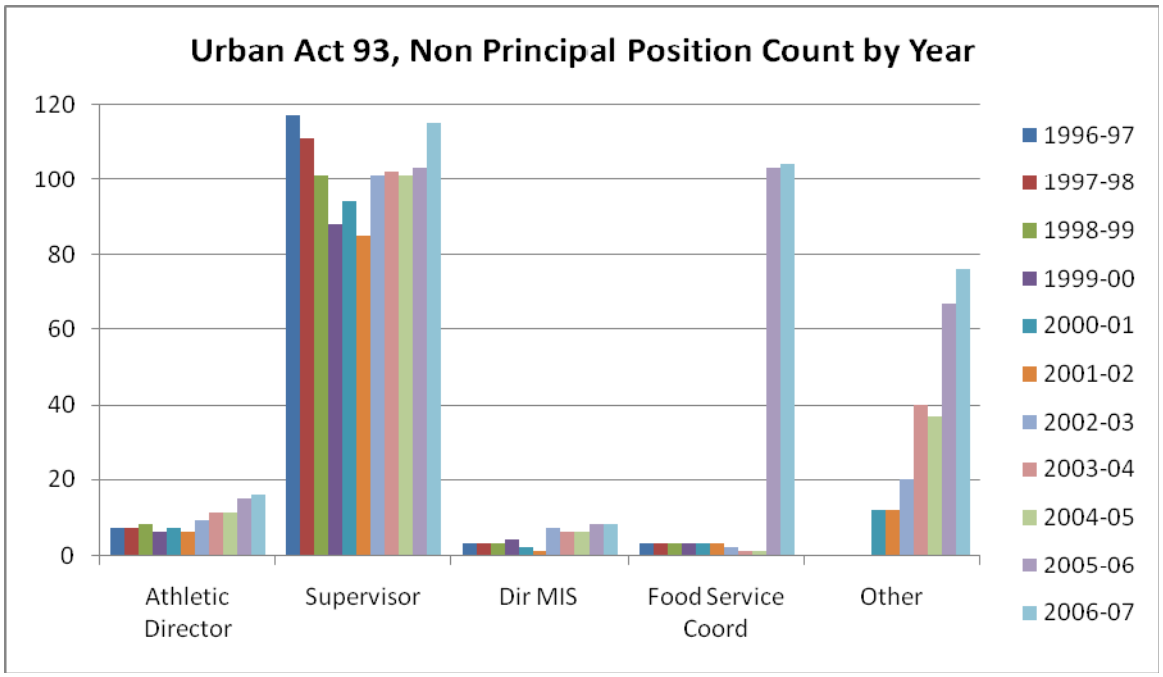
All rural Act 93, Non Principal positions increased over the period. Most notable were the increases in the Supervisor positions after the implementation of NCLB in 2001. In addition, the increases in the Food Service Coordinator positions at the end of the period were aligned with the implementation of nutritional standards. The Other position primarily represented Computer Technicians and first appeared aligned with No Child Left Behind and the availability of federal funds under Technology Literacy Challenge Fund. Distinct increases are attributed to changes in the education environment. Figure 4.23 depicts the Suburban Act 93, Non Principal Position Count by Year.

Figure 4.23: Suburban Act 93, Non Principal Position Count by Year



All suburban Act 93, Non Principal positions increased across the time period. This could have been the result of increasing enrollments and increasing mandates from the state and federal governments. Similar to rural communities, the Food Service Coordinator positions increased in alignment with the timing of the Nutritional Standards. The Other position first appeared in alignment with No Child Left Behind and Technology Literacy Challenge Fund. The Supervisors continuously increased. In addition, there was an increase in the Director of Management Information System positions in 2001-02 that outpaced previous increases and was also in alignment with NCLB. An additional and unexpected occurrence was the decrease in suburban Athletic Director post NCLB which may have been structural moves to align greater resources with academic programs. Figure 4.24 depicts the urban Act 93, Non Principal Position Count by Year.

Figure 4.24: Urban Act 93, Non Principal Position Count by Year



Of particular interest, and not aligned with the other community types, were the urban Supervisor position counts over the time period. These positions decreased in the first part of the time period and increased in the second part of the time period. The early decreases could have been aligned with the increases in other community types. The late increases could have been the result of necessity under NCLB. Aligned with rural and suburban trends, the Food Service Coordinator positions increased as the Nutritional Standards were passed and the Other position first occurred just after NCLB and Technology Literacy Challenge Fund. In addition and similar to suburban trends, the Director of Management Information Systems increased post NCLB.

Total Years of Service

Table 4.13 details the average total years of service in education across the time period of the Act 93, Non Principals by community type.

Table 4.13: Act 93, Non Principals Average Total Years of Service by Community Type

Average Total Years of Service	Rural	Suburban	Urban
Athletic Director	21.2	22.5	24.9
Supervisor	23.2	24.1	23.3
Dir MIS	14.8	16.2	15.5
Food Service Coord	17.3	18.8	18.9
Other	10.2	14.4	12.9

Once again, urban and suburban averages are the highest across the Act 93, Non Principals positions for total years of service.

Unit Years of Service

Table 4.14 details the Act 93, Non Principals average years of service in the current district by community type.

Table 4.14: Act 93, Non Principals Average Unit Years of Service by Community Type

Average Unit Years of Service	Rural	Suburban	Urban
Athletic Director	17.2	16.3	19.4
Supervisor	12.0	12.2	15.5
Dir MIS	11.6	10.4	12.1
Food Service Coord	13.3	11.2	13.9
Other	8.5	13.1	12.8

Act 93 Non Principals served longer in the same district in suburban and urban school districts. The Athletic Director position had the highest average years of service for the Act 93, Non Principal positions.

Pre and Post NCLB

As a result of the major impact of No Child Left Behind on public education, the following section reviews how the administrative structures changed pre and post NCLB implementation.

Table 4.15: Pre 2001 District Administrator Change by Direction and Community Type

Pre 2001		Total Administrators		
		Decrease	Neutral	Increase
Rural	Count	44	76	147
267	%	16.5%	28.5%	55.1%
Suburba	Count	35	57	115
207	%	16.9%	27.5%	55.6%
Urban	Count	6	4	16
26	%	23.1%	15.4%	61.5%
Total	Count	85	137	278
500	%	17.0%	27.4%	55.6%

Table 4.16: Post 2001 District Administrator Change by Direction and Community Type

Post 2001		Total Administrators		
		Decrease	Neutral	Increase
Rural	Count	51	60	156
267	%	19.1%	22.5%	58.4%
Suburba	Count	46	31	130
207	%	22.2%	15.0%	62.8%
Urban	Count	4	4	18
26	%	15.4%	15.4%	69.2%
Total	Count	101	95	304
500	%	20.2%	19.0%	60.8%

By comparing data on district administrations pre-2001 as presented in Table 4.15 and post-2001 as presented in Table 4.16 by community type some differences emerged.

There were decreases in the count and percent of districts with administrative structures that remained neutral. While there was greater growth in the percent of districts increasing in the number of administrative positions post-2001, there were also increases in the percent of rural and suburban districts decreasing the size of the administrative structures. On balance, these data indicate greater administrative structural instability after the implementation of No Child Left Behind.

Conclusions

The analysis of administration size and administrator and district characteristics identified some trends and significant relationships. To summarize, trends and relationships were identified between

- The size of an administration and the community type
- The stability of positions and the size of the administration
- The community type and the average education level of the administrators
- The community type and the average salaries of administrators
- The community type and the districts relative wealth
- Student performance levels on standardized tests and the community type

In addition, this analysis also identified significant relationships between

- Student performance levels and district relative wealth (negative relationship)
    - High relative wealth associated with high levels of student performance
- Student performance levels and student size (negative relationship)
    - Mid-sized districts associated with the highest levels of student performance followed by small districts
- The relative wealth of the districts and administrator salaries (positive relationship)
    - High relative wealth aligned with high administrator salaries
- The relative wealth of the district and the average education level of administrators (negative relationship)
    - High relative wealth associated with high average education levels

- The average unit years of service of administrators with the relative wealth of the district and student size

The analysis of the community characteristics served to confirm already identified trends and relationships and highlighted the interconnected relationship between a public school district's administration, the district and the community.

The analysis of administration structure and size with environmental change events also identified the following

- Low levels of stability of positions within administrative structure
- Highest levels of stability of positions occurred in contracted positions, followed by principals
- Principal positions maintained higher levels of stability within the structure than Assistant Principal positions
- Act 93, Non Principal positions had the lowest levels of position stability within the structure during the time period
- The primary environmental change events occurring during the time period that impacted administrative structures and size were Act 41 "30 and out" legislation and No Child Left Behind
- Other influences impacted specific positions to include
    - Nutritional Standards dramatically increased Food Service Coordinator positions
    - The collective financial and tax reform changes increased the number of Business Manager positions

  - Advancements in technology, availability of funds through Technology Literacy Challenge Fund and the integration of technology into academics increased Director of Management Information Systems positions and Computer Technician positions
- Increasing academic standards required increased assistant principal positions and decreased principal positions were assumed to be a measure to offset costs
- The increasing collective administration pressures prompted and provoked decreases in the administration pool that in turn resulted in decreasing average total years of service, decreasing average unit years of service, decreasing average education levels and increasing salaries
- Legislation decreased leadership stability

CHAPTER 5

CONCLUSIONS

The research contributes to the literature by identifying trends and relationships between the size of the public school districts' administration, and administrator, district, and community characteristics as well as the impact of environmental change events on positions and structures. More specifically, this study analyzed changes and stability of administrative positions and structures over time to identify trends and relationships between the district's internal characteristics, the educational environment and the changes or stability that occurred in administrative positions and structures.

A number of trends as well as significant relationships between the size of a district's administration and district characteristics were identified. The size of a public school's administration, the student size and the community type identified three general trends. Districts in rural communities had small administrations and small student size. Districts in suburban communities had medium sized administrations and mid-sized student enrollments and districts in urban communities had large administrations and large numbers of students. In addition, the stability of positions within the structure were aligned with the size of the administration. The unit years of service data indicated incumbents did not remain in the district as long. The incumbents on average remained in the district longer in these districts than the incumbents in other community types. These data indicated administrators tended to stay in the same district longer in districts with low relative wealth and high student size - typically urban districts. While many of the data indicated urban districts as functioning in a turbulent environment, these data suggest that urban districts tend to have the highest level of leadership stability.

Small, rural districts and mid-size suburban districts had the highest level of stability in administrative positions during the time period while large urban districts had the lowest stability in administrative positions. However, while the urban structure was changing, on average, the incumbents filling the leadership positions remained in Urban district longer than the other community types. These contrasting indicators of stability are difficult to determine how they simultaneously impact the organization.

A number of other characteristics also aligned with community type and size. These included the average education level of the administrators in which suburban and urban had the highest levels of administrator education levels. Often suburban districts were slightly higher but this varied by the administrative position. Consistently, rural administrators had lower average education levels as compared with administrators in other community types.

The districts' relative wealth also aligned with the community type. In summation, rural districts had low but increasing relative wealth, suburban districts had high but decreasing relative wealth and urban districts had low and decreasing relative wealth. Reflective of this, the administrator salaries also aligned with community type. Typically, suburban average salaries were the highest followed closely by urban administrator average salaries. Rural districts had lower average administrator salaries.

Other significant relationships that were identified included the relative wealth of the districts and administrator salaries as well as the relative wealth of the district and the average education level of administrators. In other words, the higher the relative wealth of the district, the higher the average salaries, and the higher the relative wealth the higher the average education level of administrators. Both of these characteristics are

consistent with suburban districts. There was a higher level of significance between relative wealth and average education level than relative wealth and salaries.

Of particular interest were the trends that were identified between student performance levels and community type because different characteristics were aligned with high performance levels. More specifically, high relative wealth had a significant relationship with the percentage of students testing advanced in both reading and math. Based on the relative wealth data, this would indicate that suburban districts have the highest percent on average of students testing in the advanced category. In addition, small student size which primarily represents rural districts, had a significant relationship with the percent of students testing proficient. As a result, suburban and rural districts generally had high levels of student performance but as the result of different characteristics. However, with the largest districts removed, small student size was aligned with significant relationships with both the proficient and basic student performance levels. While urban districts did not typically align with either of these characteristics – high relative wealth and small student size – urban districts tended have lower levels of student performance. However, the pattern of the percent of students meeting and not meeting AYP across grades were consistent in all three community types.

While significance was identified between relative wealth and advanced testing, and small student size and proficient testing, the inter-relation and reflection of community characteristics was also present. The alignment of community education and community wealth levels were aligned with districts with high student performance levels and high levels of relative wealth. These findings supported other research concerning the

relationship between size, student achievement and socio-economic status. The analysis of the community characteristics served to confirm already identified trends and relationships and highlighted the interconnected relationship between a public school district's administration, the district, and the community.

The analysis of administration structure and size with environmental change events identified general and position specific trends. The analysis of the education environment and legislative change events did not produce correlations to the extent that was expected. The researcher expected to see legislation to have passed as it relates to one administrative function and to see increases in personnel related to the function in the following two years. In contrast, there were only a few of these patterns that would indicate a correlation to include Act 41 "30 and Out," NCLB collectively which impacted different types of districts differently, the Nutritional Standards as they applied to Food Service Coordinator positions, and Technology Literacy Challenge Fund as applied to Director of Management Information Systems and Computer Technician positions. In contrast, there were many changes that could be assumed to be the result of the collective changes for example the movement of principal positions. In some functional areas there were so many new pieces of legislation so close together that it was difficult to select one event per the changes in administrative positions. This was the case with the financial management legislation and the Business Manager positions.

The increasing collective administration pressures were resulting in a decreasing administration pool that in turn results in decreasing average total years of service, decreasing average unit years of service, decreasing average education levels and increasing salaries. Conclusively, this analysis would indicate legislation decreased

leadership stability and the districts facing the largest challenges in the current environment are also in the highest levels of turbulence.

Organizational theories explain how current practices developed and the continued connection between business and education. Continuation of the long history of organizational and management theories indicated many pieces of past practice influence current operations. Current demands are producing an environment in which there is greater specificity of administration positions or greater diversification of duties to meet the varied demands within the budgetary restrictions placed on school districts. In addition, such demands force greater specification in larger districts by dividing functions among more administrators and in turn produce large administrations. In contrast, rural districts with small administrations are 'satisficing' to meet the demands within the limitations of budgetary constraints and small administrations. Contingency theory would suggest the administration is changing in an effort to meet the continuous changes in the district and student needs as well as community and legislative changes.

Turbulence theory helps to explain the impact of the instability in administrative structures and in the educational environment on the organization. In addition, this provides a means of comparing the different levels of turbulence between the different community types. The Turbulence Gauge in table 5.1 was developed to allow a means applying the results of this macro study on a micro level and to compare districts.

Table 5.1: Turbulence Gauge

DEGREE OF TURBULENCE	DESCRIPTION	SITUATION
Light	Little or no disruption	Years since the last administrative position change and years since the last major legislative change impacting the administration
Moderate	Widespread awareness of situation	Either a pending administrative structural or legislative change or within recent history
Severe	Sense of crisis	Both an administrative structural and major legislative change pending or within recent history
Extreme	Dismantling of the organization	Multiple administrative structural and major legislative change occurring within close proximity to each other and frequently

While the gauge provides a means of comparison between districts and types of districts, positionality provides a lens through which to assess more specific impact of change. For example, the turbulence experienced by an assistant principal would be severe to extreme in a situation in which the district moved from having a building principal, a principal who was shared with another building, a year in which they could not fill the position and again a building principal. For the assistant principal in this situation, each year the incumbent would need to adjust based on the amount and type of work they were doing and the amount of support they were receiving. In addition, if academic legislative change were occurring during the same time period, for example new math standards and corresponding student achievement tests, this severe level of turbulence may move to extreme. This same situation would more likely have a moderate level of turbulence for a business manager because the direct relationship to the changing position is limited.

However, the level of turbulence could be lowered by leadership recognizing the level of turbulence being experienced by the assistant principal, establishing a means of

communication to identify the most pressing issues and allowing the assistant principal to make suggestions as to how best to address the situation, and for leadership to provide support and to be willing to try new means of addressing the issues.

The structural stability in suburban structures is moderate and leadership turnover would seem to be high as the result of the low average unit years of service. However, these potentially turbulent organizational pressures are offset by other indicators of stability to include high levels of student performance, high levels or relative wealth indicating available resources, and high average education levels of administrators. While suburban administrators did not remain in the district as long as administrators in other community types, these districts have greater resources and higher average salaries to attract candidates. While suburban districts have some indicators of turbulence, the many stable characteristics create a comparatively stable system. The turbulence level in suburban districts was light to moderate.

Rural districts have high levels of stability in the administrative structure with high levels of administrator turnover. Student performance tends to be consistent and relatively high. In addition, these districts have limited but increasing resources as the result of the increasing relative wealth of these districts and the decreasing student enrollments. However, the frequent leadership turnover and decreasing student size creates challenges to maintaining stability in rural districts and the educational programs. The turbulence in rural districts was moderate to severe.

The data would indicate that urban districts arguably may be functioning in the highest levels of turbulence and instability. These large organizations have some of the lowest levels of stable positions within the structures, low and decreasing relative wealth

indicating limited resources and consistently low levels of student performance. However, these trends that certainly could produce a cascading effect on the organization are suspected to be offset by other indicators of stability. For example, urban districts have the highest average unit years of service indicating the administrators in these districts remain with the district longer than administrators in other districts. In addition, these districts have comparatively high average salaries and high average education levels of administrators - both characteristics that could serve to attract and retain potential leaders. Turbulence in urban districts was moderate to severe. Conclusively, the data analysis suggests that suburban districts may be experiencing lower levels of turbulence than urban and rural districts. Appendix M. Districts by Size and Community Type is included for application to an individual district and to demonstrate intergroup variability as discussed earlier.

It would appear that all public school district administrative structures are a result of their management history and have challenges that are unique to their organization that produce turbulence that may be offset by other indicators of stability. However, with the increasing demands on all public school districts, the turbulent environment is continuously becoming more intense with greater demands and expectations. The research suggests that legislation decreased leadership stability and created a more turbulent education leadership environment. As a result, it is expected that the administrator applicant pools will continue to decrease. Without a proper check on the increasing demands and insufficient funds for schools, a cascading turbulent environment may be the result.

Implications of Research

This study identified trends that exist between administration size, and administrator, district and community characteristics as well as trends between the size and structure of public school district administrations and the educational environment. Public school district administrations in the Commonwealth of Pennsylvania are reflective and responsive in size, structure and collective administrator characteristics to the district and the community. Hopefully, this research will serve as a resource to assist educators contemplating administrative careers to assess the type of district that would be the best fit and to clarify some organizational and environmental challenges facing our public schools. In addition, this study highlights the impact of education legislation on our public schools.

Further Research

Through the course of this study, the researcher recognized areas for further research. For example, further research would be necessary to better understand the relationship between the legislative environment and public school administrative structure and size changes. Qualitative research of decision making as the result of environmental change events and district specific characteristics would illuminate what specifically is causing change as opposed to the macro perspective provided through this research. An additional area for further research would be to utilize an expanded time period to better assess major change. Also, a review of exit interview data accompanied by rates of turnover in administrative positions would provide additional data concerning the motivation of administrators to change positions at increasing rates.

The analysis of position and structural stability in relation to environmental change events identified some correlations but not as many as were expected. Rather, the researcher suspects that the collective turbulence in the educational environment may produce general trends that would be better identified in a longer time series and supported by qualitative data.

Conclusively, this research highlighted the many challenges faced by public schools and the impact of new legislation on leadership stability. While producing varied responses, administrative structures in public schools in the Commonwealth of Pennsylvania responded to legislative change events between the 1996-97 and 2006-07 schools years. In addition, the trends and significant relationships identified characteristics aligned by community type and demonstrated how the public school is inter-related and reflective of the community.

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APPENDICES

APPENDIX A

POSITION COUNT & CHANGE TABLES

Appendix A details the frequency counts of administration size by year and by community type.

Rural

The greatest number of districts were located in rural communities, which translates into high frequencies at low counts. Table A 1 details the frequency counts of the number of administrators per district in rural communities over the time period. The highest frequency counts per school year in rural districts shifted from 3-4 and 5-6 administrators in the first few years of the period to the highest frequencies falling between 5-6 and 7-8 administrators per district. This indicated an increase in the size of rural administrations over the period. This was supported by the average rural administration size by school year as presented in Table A 2. The average number of administrators per rural district increased by 2.13 positions over the time period.

Table A 1: Frequency of Administration Size in Rural Communities by School Year and Percent of Total Rural Districts (N=267)

Rural	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%	2003-04	%	2004-05	%	2005-06	%	2006-07	%
1-2	2	0.7%	4	1.5%	5	1.9%	6	2.2%	2	0.7%	4	1.5%	2	0.7%	3	1.1%	4	1.5%	5	1.9%	4	1.5%
3-4	70	26.2%	64	24.0%	58	21.7%	55	20.6%	45	16.9%	38	14.2%	36	13.5%	30	11.2%	20	7.5%	20	7.5%	22	8.2%
5-6	62	23.2%	60	22.5%	66	24.7%	57	21.3%	67	25.1%	64	24.0%	67	25.1%	61	22.8%	70	26.2%	57	21.3%	56	21.0%
7-8	49	18.4%	55	20.6%	45	16.9%	58	21.7%	51	19.1%	51	19.1%	47	17.6%	58	21.7%	57	21.3%	55	20.6%	57	21.3%
9-10	32	12.0%	35	13.1%	36	13.5%	33	12.4%	35	13.1%	39	14.6%	45	16.9%	48	18.0%	42	15.7%	44	16.5%	40	15.0%
11-12	25	9.4%	25	9.4%	29	10.9%	26	9.7%	30	11.2%	35	13.1%	26	9.7%	21	7.9%	27	10.1%	35	13.1%	33	12.4%
13-14	13	4.9%	11	4.1%	13	4.9%	13	4.9%	17	6.4%	13	4.9%	22	8.2%	18	6.7%	18	6.7%	16	6.0%	17	6.4%
15-16	5	1.9%	6	2.2%	7	2.6%	6	2.2%	8	3.0%	8	3.0%	6	2.2%	11	4.1%	10	3.7%	12	4.5%	17	6.4%
17-18	5	1.9%	3	1.1%	4	1.5%	4	1.5%	4	1.5%	7	2.6%	7	2.6%	8	3.0%	8	3.0%	11	4.1%	6	2.2%
19-20	1	0.4%	0	0.0%	0	0.0%	4	1.5%	2	0.7%	1	0.4%	1	0.4%	2	0.7%	3	1.1%	1	0.4%	4	1.5%
21-22	1	0.4%	1	0.4%	0	0.0%	1	0.4%	2	0.7%	3	1.1%	4	1.5%	1	0.4%	3	1.1%	3	1.1%	3	1.1%
23-24	1	0.4%	0	0.0%	1	0.4%	2	0.7%	1	0.4%	0	0.0%	0	0.0%	1	0.4%	1	0.4%	4	1.5%	3	1.1%
25-26	1	0.4%	1	0.4%	1	0.4%	0	0.0%	1	0.4%	0	0.0%	1	0.4%	2	0.7%	1	0.4%	1	0.4%	1	0.4%
27-28	0	0.0%	2	0.7%	1	0.4%	2	0.7%	0	0.0%	1	0.4%	2	0.7%	2	0.7%	2	0.7%	1	0.4%	1	0.4%
29-30	0	0.0%	0	0.0%	1	0.4%	0	0.0%	2	0.7%	1	0.4%	0	0.0%	0	0.0%	0	0.0%	1	0.4%	2	0.7%
31-35	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	0.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
36+	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.4%	1	0.4%	1	0.4%	1	0.4%	1	0.4%
Total	267	100%	267	100%	267	100%	267	100%	267	100%	267	100%	267	100%	267	100%	267	100%	267	100%	267	100%

Table A 2: Mean Number of Administrators per Rural District by School Year (N=267)

Rural	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Total Count	1,991	1,983	2,057	2,113	2,212	2,280	2,339	2,371	2,407	2,515	2,561
Average	7.46	7.43	7.70	7.91	8.28	8.54	8.76	8.88	9.01	9.42	9.59

Suburban

Table A 3 details the frequency counts of the number of administrators per district in suburban communities over the time period.

Table A 3: Frequency of Administration Size in Suburban Communities by School Year and Percent of Total Suburban Districts (N=207)

Suburban	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%	2003-04	%	2004-05	%	2005-06	%	2006-07	%
1-2	2	1.0%	2	1.0%	2	1.0%	2	1.0%	2	1.0%	1	0.5%	1	0.5%	1	0.5%	1	0.5%	1	0.5%	1	0.5%
3-4	10	4.8%	12	5.8%	9	4.3%	9	4.3%	3	1.4%	4	1.9%	5	2.4%	4	1.9%	5	2.4%	6	2.9%	3	1.4%
5-6	29	14.0%	29	14.0%	23	11.1%	25	12.1%	26	12.6%	24	11.6%	19	9.2%	16	7.7%	14	6.8%	15	7.2%	17	8.2%
7-8	21	10.1%	22	10.6%	24	11.6%	27	13.0%	26	12.6%	24	11.6%	30	14.5%	31	15.0%	29	14.0%	20	9.7%	22	10.6%
9-10	36	17.4%	35	16.9%	42	20.3%	29	14.0%	28	13.5%	26	12.6%	22	10.6%	21	10.1%	22	10.6%	23	11.1%	22	10.6%
11-12	32	15.5%	29	14.0%	29	14.0%	29	14.0%	25	12.1%	24	11.6%	20	9.7%	27	13.0%	22	10.6%	20	9.7%	20	9.7%
13-14	18	8.7%	17	8.2%	15	7.2%	19	9.2%	21	10.1%	24	11.6%	24	11.6%	19	9.2%	21	10.1%	28	13.5%	28	13.5%
15-16	12	5.8%	15	7.2%	14	6.8%	14	6.8%	18	8.7%	20	9.7%	21	10.1%	21	10.1%	22	10.6%	22	10.6%	13	6.3%
17-18	15	7.2%	14	6.8%	14	6.8%	13	6.3%	14	6.8%	13	6.3%	13	6.3%	17	8.2%	23	11.1%	16	7.7%	18	8.7%
19-20	5	2.4%	5	2.4%	6	2.9%	8	3.9%	11	5.3%	6	2.9%	7	3.4%	7	3.4%	4	1.9%	10	4.8%	12	5.8%
21-22	4	1.9%	4	1.9%	2	1.0%	7	3.4%	3	1.4%	10	4.8%	11	5.3%	3	1.4%	5	2.4%	8	3.9%	14	6.8%
23-24	5	2.4%	5	2.4%	4	1.9%	6	2.9%	7	3.4%	4	1.9%	8	3.9%	11	5.3%	8	3.9%	8	3.9%	6	2.9%
25-26	5	2.4%	3	1.4%	10	4.8%	2	1.0%	4	1.9%	9	4.3%	4	1.9%	6	2.9%	9	4.3%	4	1.9%	8	3.9%
27-28	5	2.4%	6	2.9%	6	2.9%	8	3.9%	8	3.9%	5	2.4%	7	3.4%	6	2.9%	6	2.9%	7	3.4%	4	1.9%
29-30	4	1.9%	3	1.4%	2	1.0%	4	1.9%	5	2.4%	4	1.9%	7	3.4%	5	2.4%	1	0.5%	5	2.4%	3	1.4%
31-35	3	1.4%	5	2.4%	2	1.0%	2	1.0%	3	1.4%	7	3.4%	5	2.4%	8	3.9%	10	4.8%	7	3.4%	9	4.3%
36-40	1	0.5%	1	0.5%	3	1.4%	3	1.4%	2	1.0%	0	0.0%	2	1.0%	3	1.4%	4	1.9%	5	2.4%	4	1.9%
41+	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.5%	2	1.0%	1	0.5%	1	0.5%	1	0.5%	2	1.0%	3	1.4%
Total Cc	207	100%	207	100%	207	100%	207	100%	207	100%	207	100%	207	100%	207	100%	207	100%	207	100%	207	100%

The highest frequencies in suburban districts at the beginning of the timeframe covered 5-6, 7-8, 9-10, and 11-12. This increased by the end of the time period to the highest frequencies in ranges 7-8, 9-10, 11-12 and 13-14. Similar to rural districts, the highest frequencies increased in count categories over the timeframe indicating an increase in the number of suburban administrators per district over the timeframe. In contrast to rural districts, the highest frequencies in suburban districts spanned more categories indicating more variance in the size of suburban administrations. This was also supported by the increasing average as presented in Table A 4.

Table A 4: Mean Number of Administrators per Suburban District by School Year (N=207)

Suburban	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Total Count	2,577	2,577	2,651	2,703	2,840	2,936	3,011	3,076	3,125	3,211	3,266
Average	12.45	12.45	12.81	13.06	13.72	14.18	14.55	14.86	15.10	15.51	15.78

The average number of administrators per suburban district increased by 3.33 positions over the time period.

Urban

Table A 5 details the frequency counts of the number of administrators per district in urban districts over the time period.

Table A 5: Frequency of Administration Size in Urban Communities by School Year and Percent of Total Urban Districts (N=26)

Urban	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%	2003-04	%	2004-05	%	2005-06	%	2006-07	%
1-5	1	4%	1	4%	1	4%	1	4%	1	4%	1	4%	0	0%	0	0%	0	0%	0	0%	1	4%
6-10	2	8%	2	8%	1	4%	2	8%	1	4%	1	4%	3	12%	3	12%	4	15%	3	12%	3	12%
11-15	4	15%	5	19%	5	19%	3	12%	4	15%	5	19%	4	15%	4	15%	3	12%	4	15%	2	8%
16-20	2	8%	0	0%	1	4%	2	8%	3	12%	4	15%	2	8%	1	4%	3	12%	3	12%	2	8%
21-25	7	27%	7	27%	5	19%	7	27%	6	23%	3	12%	5	19%	5	19%	2	8%	3	12%	5	19%
26-30	2	8%	5	19%	7	27%	5	19%	3	12%	6	23%	2	8%	4	15%	5	19%	3	12%	2	8%
31-35	3	12%	2	8%	2	8%	1	4%	5	19%	2	8%	3	12%	1	4%	1	4%	2	8%	3	12%
36-40	2	8%	0	0%	0	0%	2	8%	0	0%	1	4%	2	8%	0	0%	0	0%	1	4%	0	0%
41-45	0	0%	1	4%	1	4%	0	0%	0	0%	0	0%	1	4%	3	12%	1	4%	0	0%	0	0%
46-50	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	4%	1	4%	2	8%
51-55	1	4%	1	4%	1	4%	1	4%	0	0%	0	0%	1	4%	1	4%	3	12%	3	12%	1	4%
56-60	0	0%	0	0%	0	0%	0	0%	1	4%	1	4%	1	4%	2	8%	1	4%	1	4%	2	8%
61-65	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	4%
66+	2	8%	2	8%	2	8%	2	8%	2	8%	2	8%	2	8%	2	8%	2	8%	2	8%	2	8%
Total	26	100%	26	100%	26	100%	26	100%	26	100%	26	100%	26	100%	26	100%	26	100%	26	100%	26	100%

The highest frequencies at the beginning of the time period fell in the 11-15, 21-25 and 31-35 categories. By the end of the time period, these highest frequencies were spread across more count categories to include 6-10, 11-15, 16-20, 21-25, 26-30, and 51-55. Despite the wider distribution of the high frequencies for urban districts, the average number of urban administrators increased over the time period similar to the other two

community types. Table A 6 details the increasing average number of urban administrators across the time period. The two largest districts, due to the extreme size as compared to the other districts, skew the urban data. Table A 6 also provides a comparison between the 26 urban districts and the urban districts without the two largest districts in the Commonwealth labeled urban (24).

Table A 6: Mean Number of Administrators per Urban District by School Year (N=26)

Urban	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Urban (26) Count	1,166	1,119	1,110	1,241	1,277	1,188	1,303	1,342	1,350	1,517	1,521
Urban (26) Average	44.85	43.04	42.69	47.73	49.12	45.69	50.12	51.62	51.92	58.35	58.50
Urban (24) Count	550	546	552	554	567	542	600	643	648	655	693
Urban (24) Average	22.92	22.75	23.00	23.08	23.63	22.58	25.00	26.79	27.00	27.29	28.88

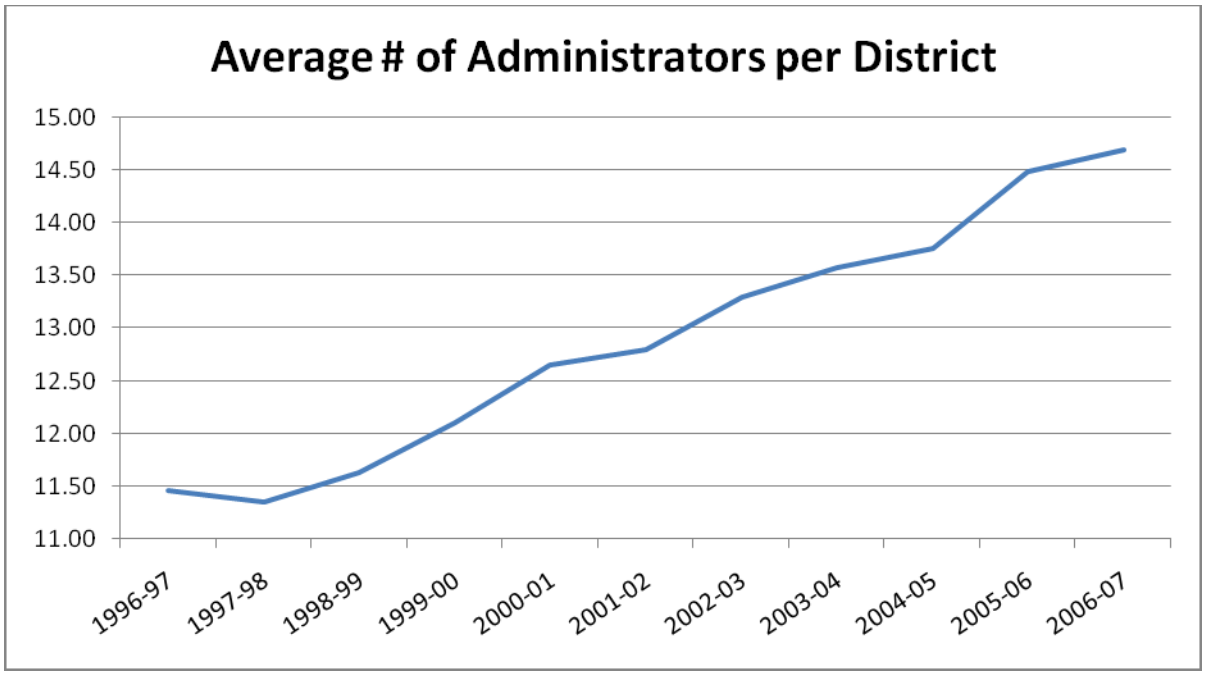
The average number of administrators per urban (26) districts increased by 13.35 positions while the average in urban (24) increased by 5.96 position over the time period. In summary, rural districts had high frequencies of low administration counts, suburban districts had more variance in the high frequencies and are spread over a wider variety of administration size, and urban districts have the greatest spread in frequencies and more variance in administration size.

APPENDIX B

ADMINISTRATION SIZE AVERAGES

Appendix B details the aggregate average number of administrators over the time period, and the percent change by community type and by year. The aggregate average number of administrators increased across the time period as depicted in Figure B1. The average number of administrators only decreased in one school year of the time period, 1997-98.

Figure B1: Average Number of Administrators per District



For a more detailed analysis, Table B1 provides the average percent change and number of administrators by community type.

Table B1: Administrator Percent Change by Community Type

	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Rural Average	7.46	7.45	7.70	7.91	8.28	8.54	8.76	8.88	9.01	9.42	9.59
Average % Change		-0.2%	3.5%	2.7%	4.7%	3.1%	2.6%	1.4%	1.5%	4.5%	1.8%
Suburban Average	12.45	12.45	12.81	13.06	13.72	14.18	14.55	14.86	15.1	15.51	15.78
Average % Change		0.0%	2.9%	2.0%	5.1%	3.4%	2.6%	2.2%	1.6%	2.8%	1.7%
Urban (26) Average	44.85	43.04	42.69	47.73	49.12	45.69	50.12	51.62	51.92	58.35	58.50
Average % Change		-4.0%	-0.8%	11.8%	2.9%	-7.0%	9.7%	3.0%	0.6%	12.4%	0.3%
Urban (24) Average	22.92	22.75	23.00	23.08	23.63	22.58	25.00	26.79	27.00	27.29	28.88
Average % Change		-0.7%	1.1%	0.4%	2.3%	-4.4%	10.7%	7.2%	0.8%	1.1%	5.8%

The average number of administrators supports the conclusion that trends in district administrative size were aligned with community type. The average percent increases in rural and suburban were closely aligned in most years as compared with urban districts. These data are limited by the few urban districts. As a result, this data essentially confirmed some similarities in administration size movement over the time period between rural and suburban districts but did not effectively exclude urban districts from these trends in movement.

APPENDIX C

EDUCATION LEVEL

Appendix C details the distribution of the highest average degree held by a position. In addition, these data are presented in figures that represent the percent of the total administrations highest degree held by year to assess changes in education level during the time period.

Education Level

The education level of administrators was assessed by the average percent of the total incumbents in a given contracted position by highest degree held and by community type to assess distribution of degrees by position. Table C 1 details the average percent across the time period of contracted positions by the highest degree held.

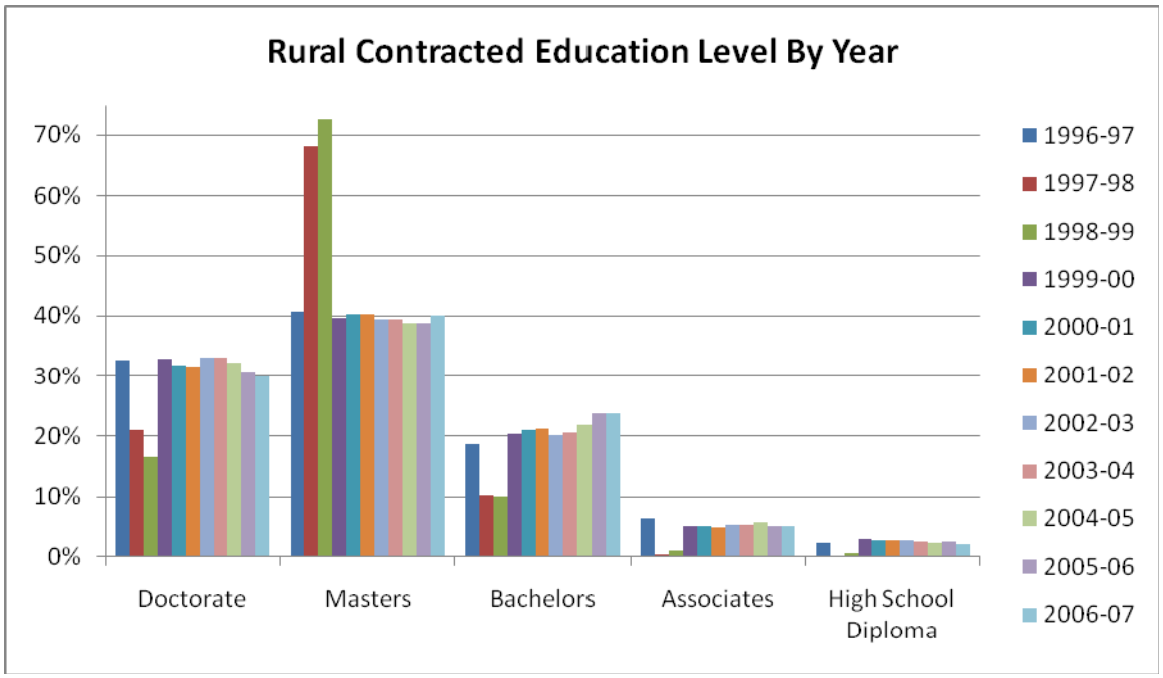
Table C 1: Average Percent of Contracted Positions by Highest Degree Held and Community Type

Contracted Ave Edu During Time Period	Doctorate	Masters	Bachelors	Associates	High School
Rural Superintendent	45%	52%	3%	0%	0%
Suburban Superintendent	65%	33%	2%	0%	0%
Urban Superintendent	63%	34%	3%	0%	0%
Rural Asst Superintendent	45%	52%	3%	0%	0%
Suburban Asst Superintendent	56%	42%	2%	0%	0%
Urban Asst Superintendent	44%	53%	3%	0%	0%
Rural Business Manager	4%	33%	47%	10%	5%
Suburban Business Manager	4%	45%	48%	3%	1%
Urban Business Manager	6%	44%	44%	4%	2%
Rural Director HR	5%	50%	17%	26%	1%
Suburban Director HR	16%	60%	19%	5%	0%
Urban Director HR	22%	39%	36%	3%	0%
Rural Total	29%	45%	19%	4%	2%
Suburban Total	40%	41%	17%	1%	0%
Urban Total	38%	44%	16%	1%	1%

Suburban Superintendents and Assistant Superintendents had the highest percent of incumbents with doctorates while urban districts had the highest percent of Business Managers and Directors of Human Resources with doctorates. In addition, the distribution of degrees for Superintendents in suburban and urban districts were similar while rural and urban districts had similar distributions for the highest degree held for Assistant Superintendent positions.

To assess change events, the average education level by community type was reviewed by year as well. Figure C1 depicts the percent of suburban contracted positions by the average highest degree earned and by school year.

Figure C 1: Rural Contracted Average Education Level by Year



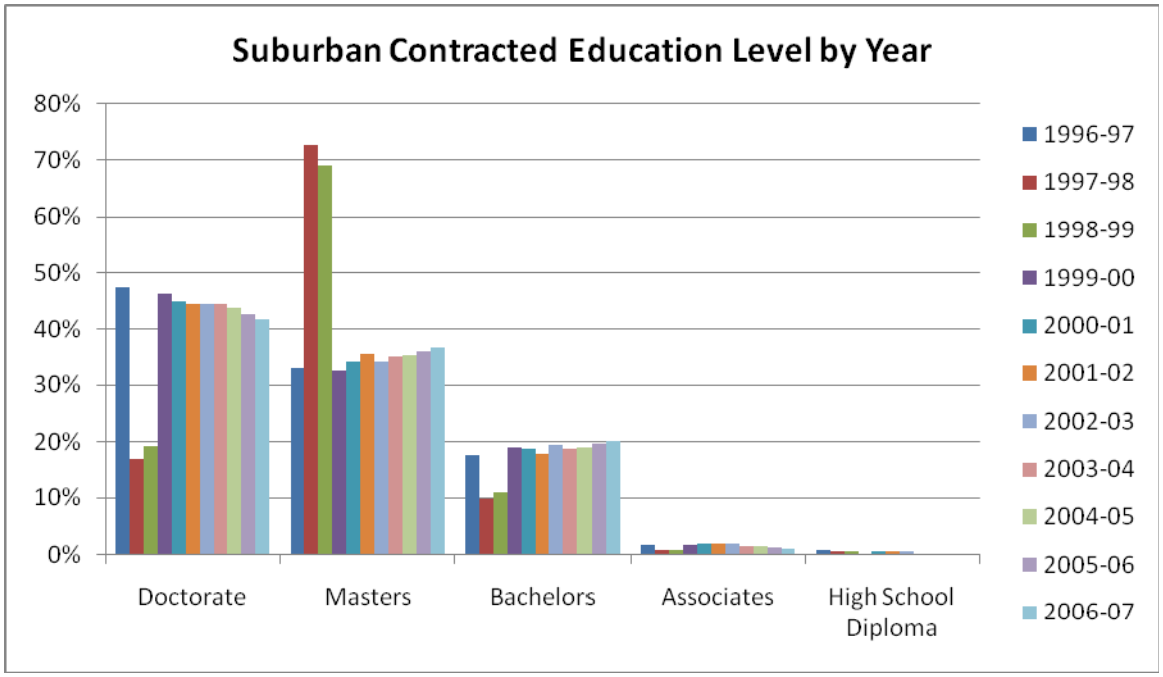
The rural spike in contracted administrators with master's degrees occurred in the 1997-98 and 1998-99 school years. This trend can be aligned with Act 41 "30 and Out." These data suggest that a number of the rural contracted administrators opting for early retirement held terminal degrees and bachelor's degrees. The quick realignment to prior

educational levels by the 1999-00 school year suggests rural districts had acting contracted positions filling in for a short period until a new incumbent was hired to fill the post, incumbents with masters degrees were hired to fill contracted positions during those two years and the employment relationship ended by 1999-00, or the incumbents were hired and completed a higher degree during those two years.

One other point that should be highlighted from these data was the decreasing percent of rural contracted positions holding doctorates toward the end of the time period and the corresponding increase in the percent of contracted positions holding bachelor's degrees. The bachelor's degree increase was attributed to the increasing number of Business Managers and Directors of Human Resources – the two contracted positions that do not require degrees beyond a bachelor's degree.

Figure C 2 depicts the percent of suburban contracted positions by average degree earned and by school year.

Figure C 2: Suburban Contracted Average Education Level by Year

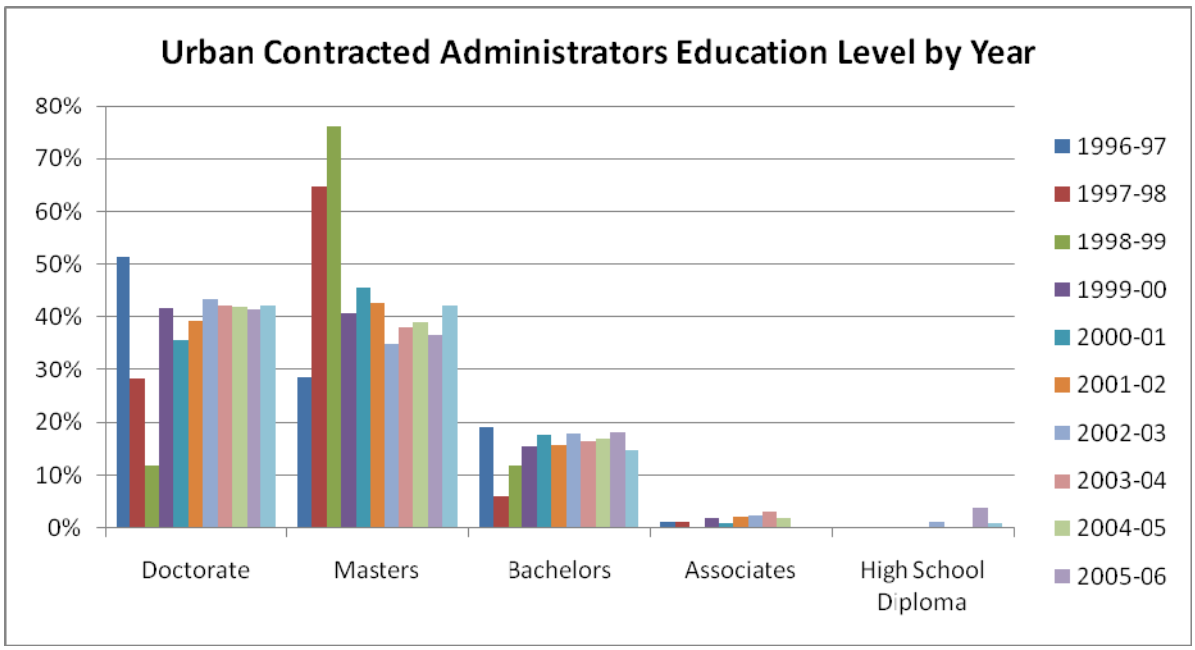


The suburban spike in contracted administrators with master's degrees occurred in the 1997-98 and 1998-99 school years. This was similar to that which occurred in rural districts and again, the education levels returned to the 1996-97 level by the 1999-00 school year.

In addition, as the number of suburban contracted administrators with doctorates decreased, the number of master's degrees increased. This contrasts with the increase of Bachelor's degrees in rural communities.

Figure C 3 depicts the percent of urban contracted positions by highest average degree earned and by year.

Figure C3: Urban Contracted Average Education Level by Year



The urban spike in contracted administrators with master's degrees occurred in the 1997-98 and 1998-99 school years. This was similar to both rural and suburban communities and can most readily be attributed to Act 41. Also similar to the other community types, the average education level realigns by the 1999-00 school year. In addition, the urban

districts did not have a trend of decreasing terminal degrees as a percent of the contracted positions as the other two community types had displayed.

Regardless, the suburban communities had the highest percent of contracted positions with doctorates followed closely by urban contracted administrators. Rural contracted administrators trailed with just over 30% holding doctorates.

Education Level

Table C2 details the average percent across the time period of Principal positions by the highest degree held by the incumbent.

Table C2: Average Percent of Principal Positions by Highest Degree Held and Community Type

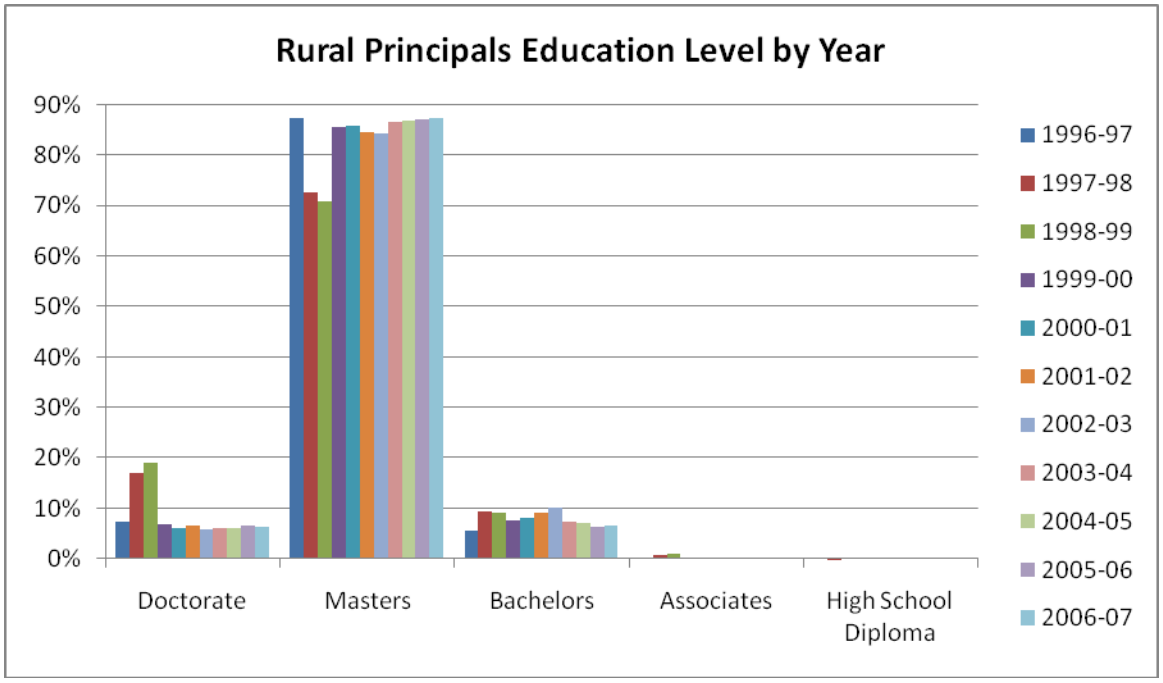
Principals	Doctorate	Masters	Bachelors	Associates	High School
Rural High School	10%	83%	7%	0%	0%
Suburban High School	17%	78%	5%	0%	0%
Urban High School	14%	77%	8%	0%	1%
Rural Asst High School	6%	80%	14%	0%	0%
Suburban Asst High School	9%	82%	8%	0%	0%
Urban Asst High School	9%	76%	14%	0%	1%
Rural Middle School	11%	83%	6%	0%	0%
Suburban Middle School	19%	77%	3%	0%	0%
Urban Middle School	13%	78%	8%	0%	1%
Rural Asst Middle School	3%	43%	6%	0%	0%
Suburban Asst Middle School	7%	87%	8%	0%	0%
Urban Asst Middle School	6%	72%	24%	0%	2%
Rural Elementary School	9%	85%	6%	0%	0%
Suburban Elementary School	17%	79%	4%	0%	0%
Urban Elementary School	10%	81%	8%	0%	1%
Rural Asst Elementary School	5%	84%	11%	0%	0%
Suburban Asst Elementary School	6%	84%	9%	0%	0%
Urban Asst Elementary School	5%	75%	17%	0%	2%
Rural Total	9%	83%	8%	0%	0%
Suburban Total	15%	80%	5%	0%	0%
Urban Total	10%	78%	11%	0%	1%

Consistently, suburban Principals had the highest average percent of incumbents holding doctorates. This was consistently followed by urban Principals. Rural Principals had the

lowest average percent of incumbents holding doctorates and the rural Principals had the highest average percent of incumbents holding Bachelor's degrees. As expected the Principals consistently had higher percentages of incumbents holding doctorates than the Assistant Principal positions across the different levels.

Figure C 4 depicts the Rural Principal average educational level by year.

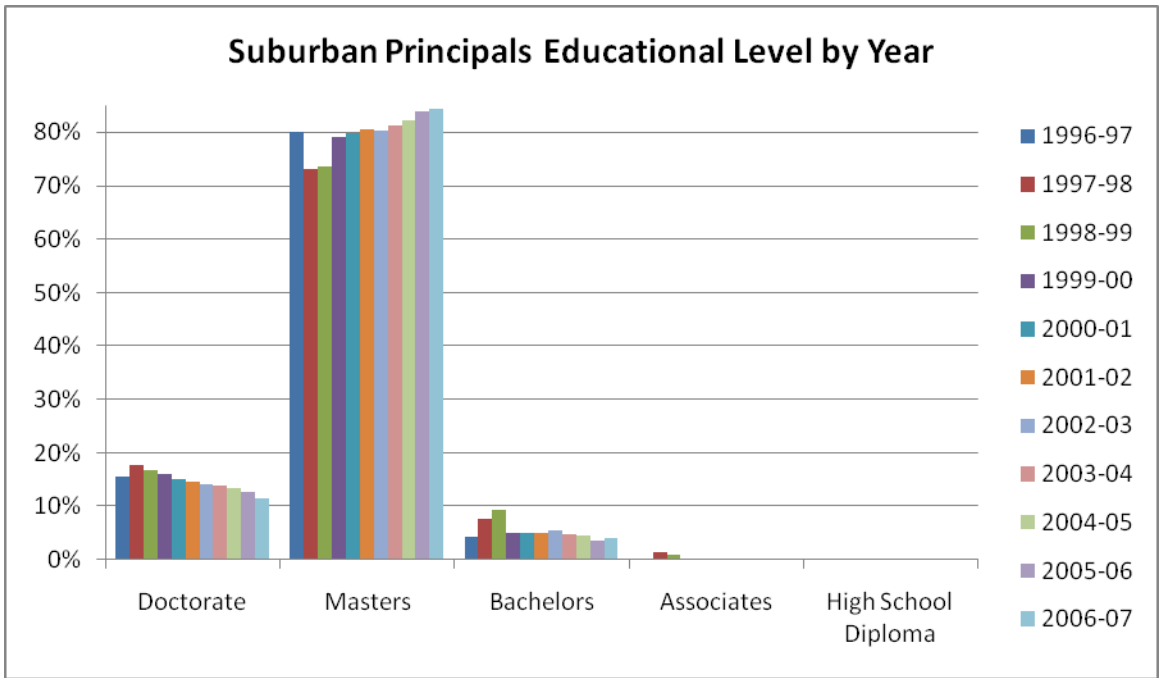
Figure C 4: Rural Principals Average Education Level by Year



In contrast to the decrease in education level that was expected as the result of Act 41, there was actually an increase in the percent of rural Principals holding doctorates during these years. In addition, there were not decreases in rural Principal positions during those years. There was also a slight increase in the percent of rural Principals holding Master's degrees toward the end of the time period and a corresponding decrease in the percent holding Bachelor's degrees.

Figure C 5 depicts the suburban Principal average educational level by year.

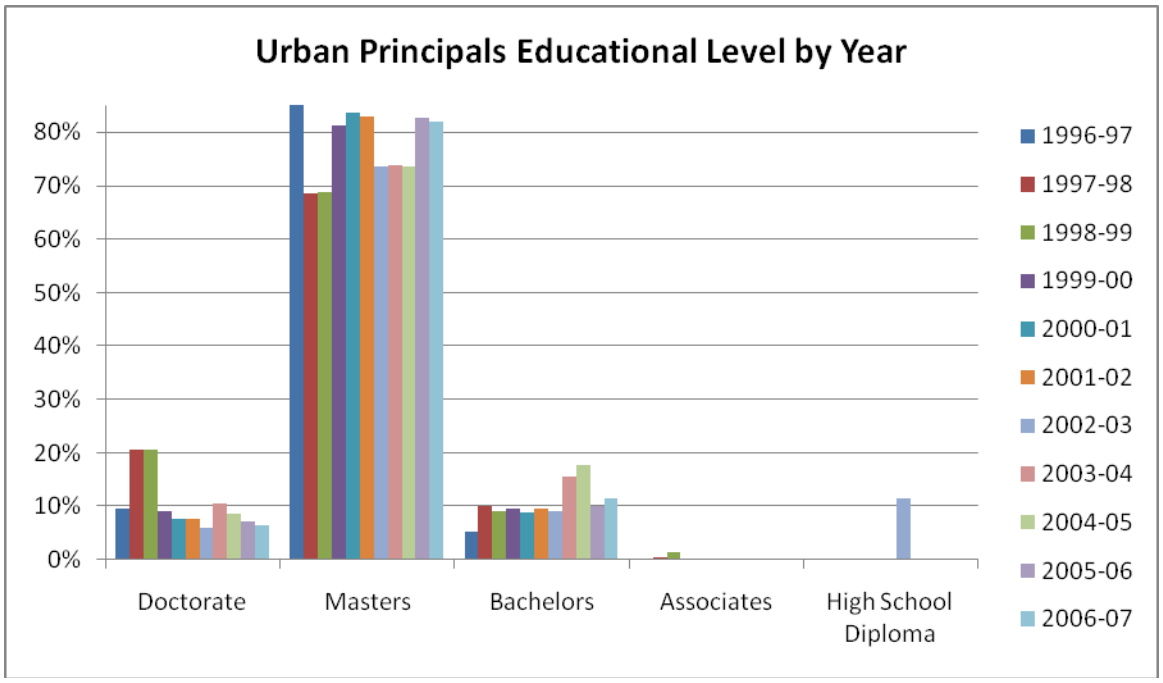
Figure C 5: Suburban Principals Average Education Level by Year



As indicated, there were decreases in the percent of suburban Principals holding masters degrees and increases in the percent of suburban Principals holding bachelor's degrees in 1997- 98 and 1998-99. In addition, there were decreasing percents of suburban Principals holding doctorates and increasing percents of suburban Principals holding masters degrees over the time period.

Figure C 6 depicts the urban Principals average education level by year.

Figure C 6: Urban Principals Average Education Level by Year



Of particular interest was the increase in the percent of Principals holding doctorates in 1997- 98 and 1998-99 especially because there was not a decrease in Principal positions in urban communities during these years. Similar to the other community types, the educational levels returned to a similar pre Act 41 level by the 1999-00 school year. The decrease in 2002 through 2004 may, in part be aligned with increases in the percentages of urban Principals having other non- Master's highest degree obtained during these years. In part, these may also be explained as the result of the laws that were enacted during that time period to include Act 100 of 2002 Reenactment of the Right-to-Know Law, Act 234 of 2002 Return to School Service of PSERS Annuitants which was further amended by Act 63 of 2004 and Act 72 of 2004 Property Tax Reform/Referendum. While these laws may be better aligned with forcing change in the contracted positions, they may also have spurred movement at the Principal level.

Table C 3 details the Average Percent of Act 93, Non Principal Positions by Highest Degree Held and Community Type across the time period.

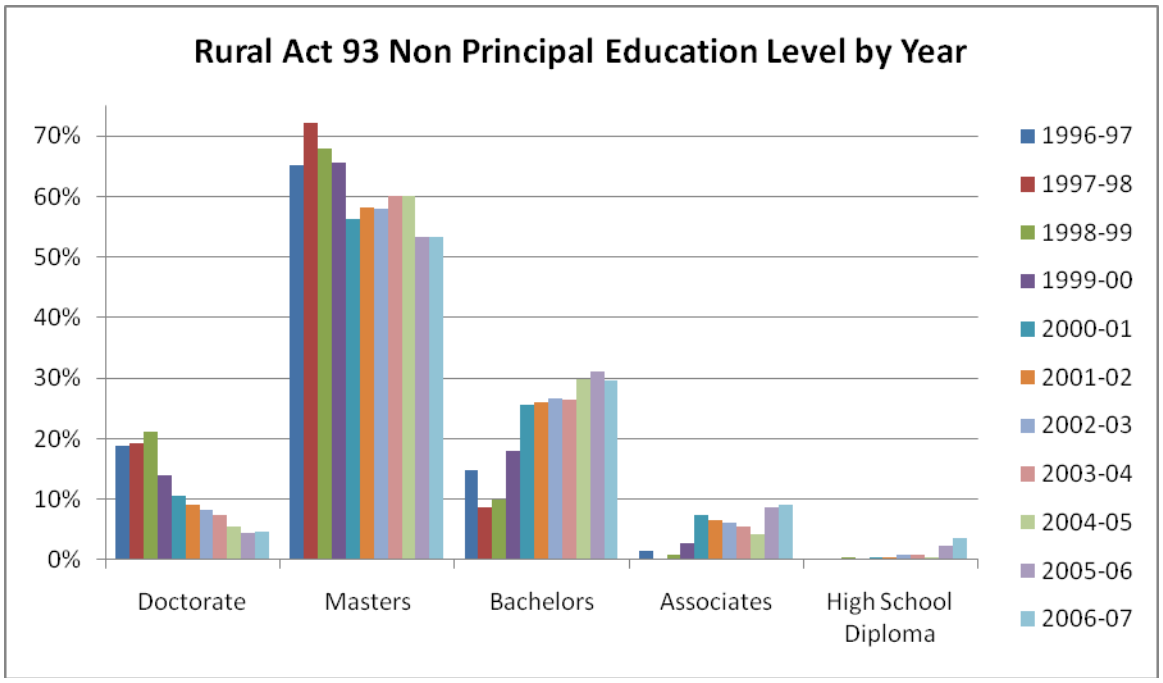
Table C 3: Average Percent of Act 93, Non Principal Positions by Highest Degree Held and Community Type

Act 93 Non-Principals	Doctorate	Masters	Bachelors	Associates	High School
Rural Athletic Director	5%	44%	50%	0%	0%
Suburban Athletic Director	3%	57%	39%	0%	0%
Urban Athletic Director	2%	47%	48%	3%	0%
Rural Supervisor	15%	78%	8%	0%	0%
Suburban Supervisor	22%	73%	4%	0%	0%
Urban Supervisor	18%	73%	9%	0%	0%
Rural Dir MIS	7%	37%	43%	13%	1%
Suburban Dir MIS	6%	49%	32%	13%	0%
Urban Dir MIS	10%	28%	54%	8%	0%
Rural Food Service Coord	7%	22%	40%	21%	10%
Suburban Food Service Coord	3%	35%	40%	19%	3%
Urban Food Service Coord	3%	15%	48%	0%	34%
Rural Comp Tech	0%	14%	34%	14%	1%
Suburban Comp Tech	1%	29%	31%	14%	6%
Urban Comp Tech	0%	2%	38%	7%	16%
Rural Total	11%	61%	22%	5%	1%
Suburban Total	16%	64%	15%	4%	1%
Urban Total	14%	57%	18%	2%	9%

While urban and suburban districts had the highest average percent of Act 93, Non Principal positions falling in the highest degree categories, the rural Food Service Coordinators had an average of 7% of incumbents with doctorates and an average of 5% of Athletic Directors held Doctorates. Across community types, the highest average percent of Act 93, Non Principal positions held master's degrees.

Figure C 7 depicts the Rural Act 93, Non Principals Average Education Level by Year.

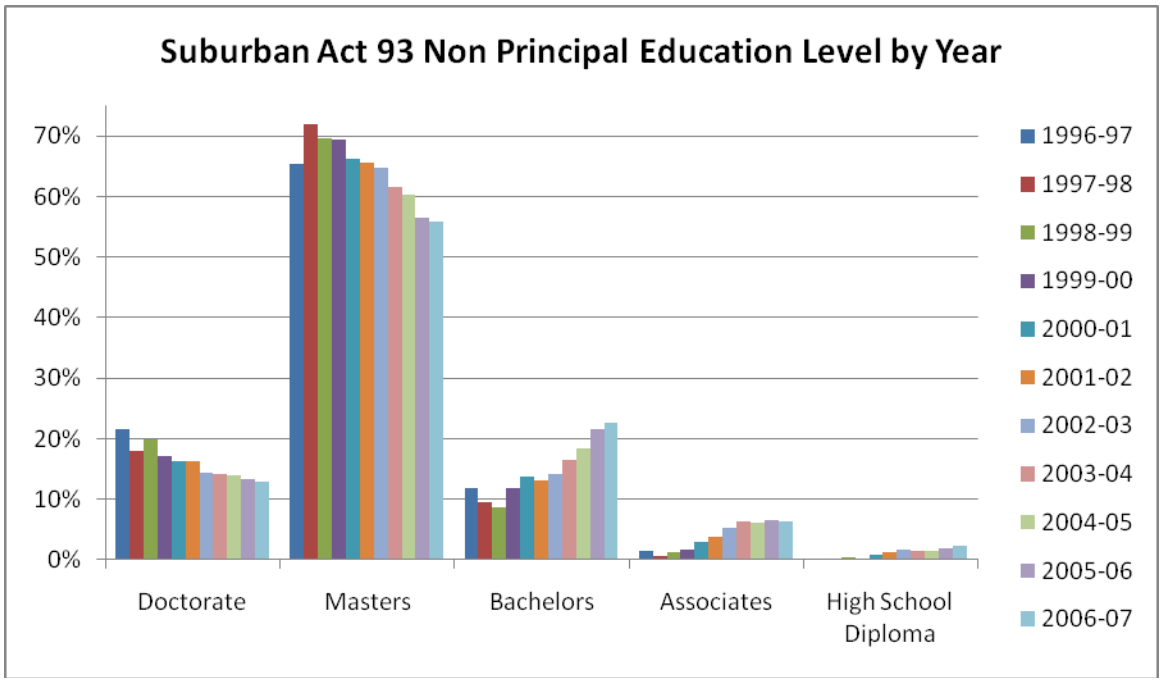
Figure C 7: Rural Act 93, Non Principals Average Education Level by Year



The most notable trends are the decreasing percents of Act 93, Non Principal incumbents falling in the Doctorate and Master's degree categories and the increasing percents in the Bachelor's degree categories.

Figure C 8 depicts the Suburban Act 93, Non Principals Average Education Level by Year.

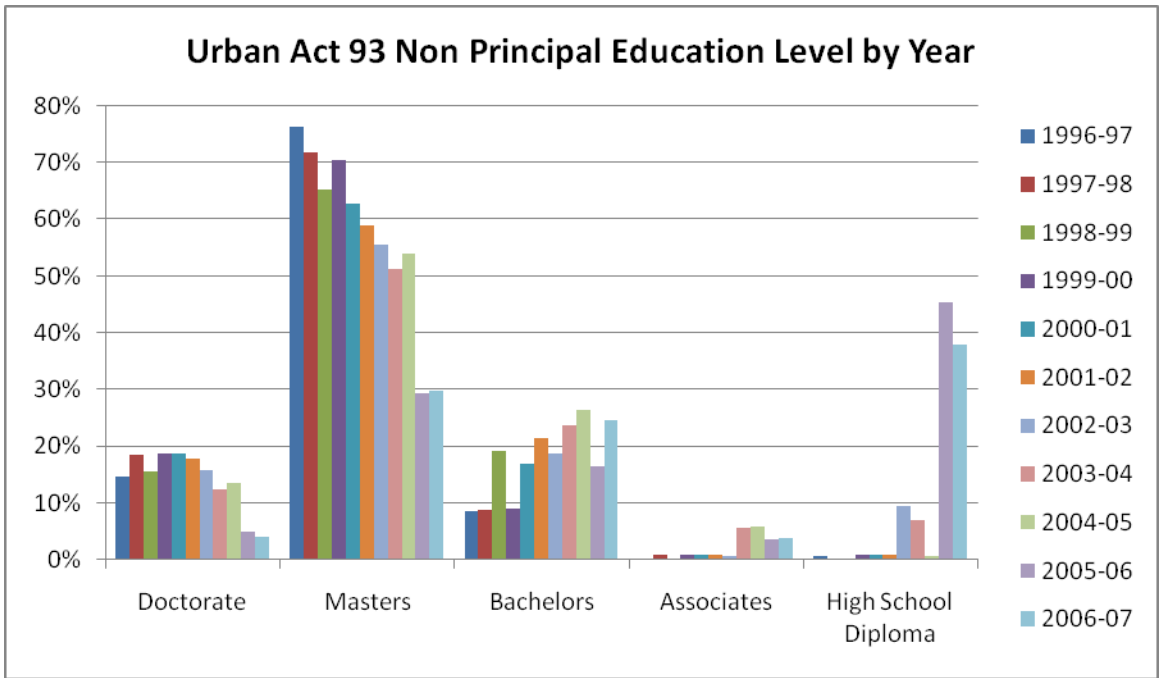
Figure C 8: Suburban Act 93, Non Principals Average Education Level by Year



Similar to the Rural Act 93, Non Principals Average Education Levels, suburban positions also had decreasing percents of Act 93, Non Principal incumbents falling in the Doctorate and Master's degree categories and the increasing percents in the Bachelor's, associates and high school degree categories.

Figure C 9 depicts the urban Act 93, Non Principals Average Education Level by Year.

Figure C9: Urban Act 93, Non Principals Average Education Level by Year



While there was more variance from one year to the next in urban Act 93, Non Principals Average Education Levels, similar reductions in education levels occurred over the time period. The sharp decrease in Master's degrees and corresponding increase in the High School Diploma percent in the final two years was the result of the increase in Food Service Coordinator positions in response to the Nutritional Standards. On balance, the average education level of Act 93, Non Principals decreased over the time period.

APPENDIX D

AVERAGE SALARIES

Appendix D details average salary data by position and community type.

Contracted Positions

The following section details the average salaries of contracted administrators. Table D 1 presents the average salaries across the period of the contracted administrator positions by community type.

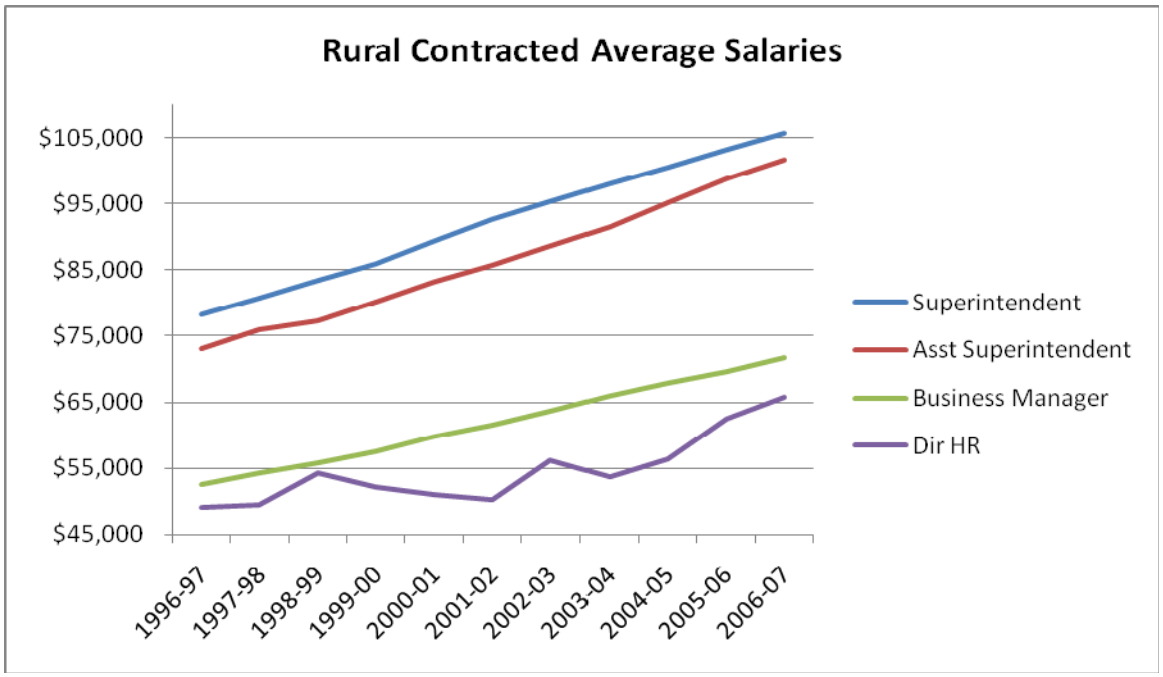
Table D 1: Contracted Average Salary by Community Type

Average Salary	Rural	Suburban	Urban
Superintendent	$ 92,016	$110,603	$118,659
Asst Superintendent	$ 86,401	$ 97,514	$102,462
Business Manager	$ 61,799	$ 81,467	$ 86,807
Dir HR	$ 54,518	$ 86,898	$ 81,617

The urban contracted average salaries across the period were the highest with the exception of the Director of Human Resources position. In terms of oversight and scope of responsibility of budgets, students, and staff, these salaries may be reflective of the demands on these positions.

Figure D 1 details the rural Contracted average salaries over the period.

Figure D 1: Rural Contracted Average Salaries

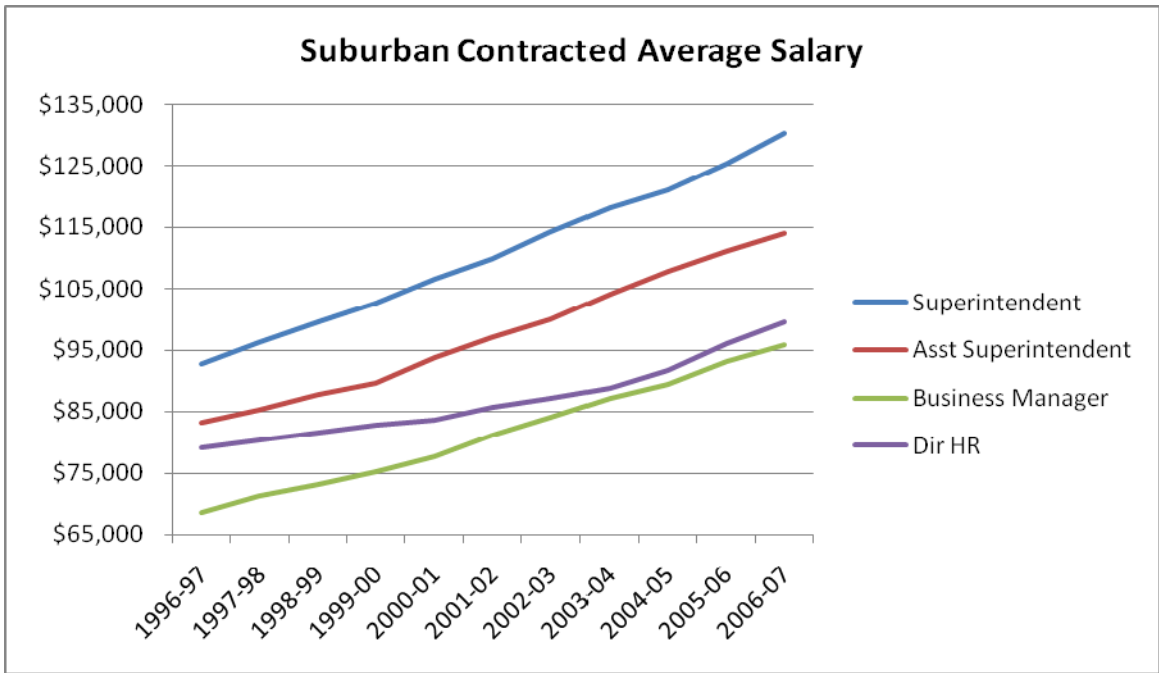


The variance across the period in the Director of Human Resources position was suspected to be the result of the newly created HR positions in rural districts during the period. In effect, the new positions and new employees were brought in at lower salaries than those with experience. When there were a number of new positions and new employees, this decreased the average.

Another point of interest was the slope of the Superintendent and Assistant Superintendent averages as compared to the Business Manager slope. This again, however, was suspected to be the result of newly created Business Manager positions in rural districts during the period.

Figure D 2 details the suburban Contracted average salaries over the time period.

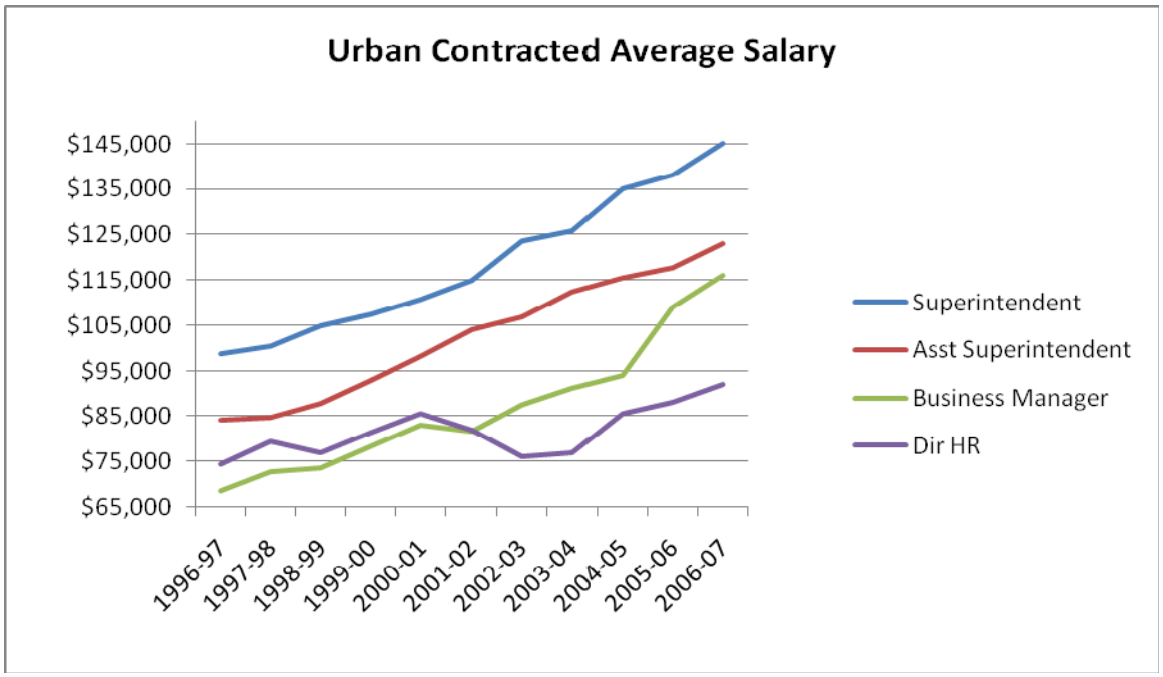
Figure D 2: Suburban Contracted Average Salaries



The lesser slope of the Director of Human Resources average salaries was once again suspected to be the result of the addition of positions. The other three suburban contracted positions generally increased at the same rate as the Business Manager slope indicating competitive salaries per the new Business Manager positions.

Figure D 3 details the urban Contracted average salaries over the time period.

Figure D 3: Urban Contracted Average Salaries



The variance depicted could be the result of a number of factors. The variability was difficult to determine a cause due to fewer districts and fewer contracted positions.

Principals

This section addresses changes or market forces that produced disruptions in the average salaries of principals. A typical average trend line in a market would gradually rise over time. Table D 2 details the average salary across the time period for Principals by community type providing an initial point of comparison across the community types.

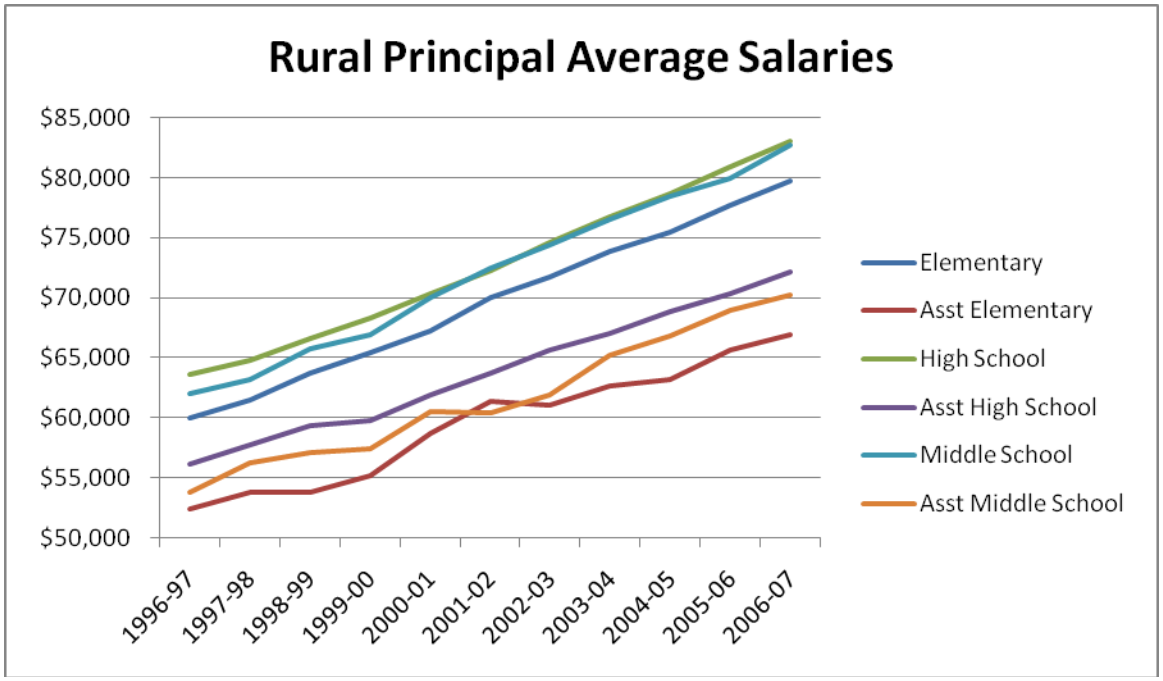
Table D 2: Principals Average Salary by Community Type

Average Salary	Rural	Suburban	Urban
Elementary	$ 69,701	$ 81,243	$ 79,543
Asst Elementary	$ 59,507	$ 67,154	$ 72,217
High School	$ 72,703	$ 85,221	$ 84,062
Asst High School	$ 63,886	$ 75,794	$ 75,516
Middle School	$ 72,021	$ 83,772	$ 84,301
Asst Middle School	$ 61,671	$ 72,165	$ 74,198

As expected, the highest averages are in suburban and urban communities. In addition, the highest average salary per the rural Principals was held by the High School Principal positions. Similarly, the highest average salary per the suburban Principals was also the High School Principal position. In contrast, the urban Middle School Principal average salary was slightly higher than the High School Principal average salary across the time period in urban communities.

Figure D 4 depicts the trends in rural Principal average salaries over the time period.

Figure D 4: Rural Principals Average Salaries



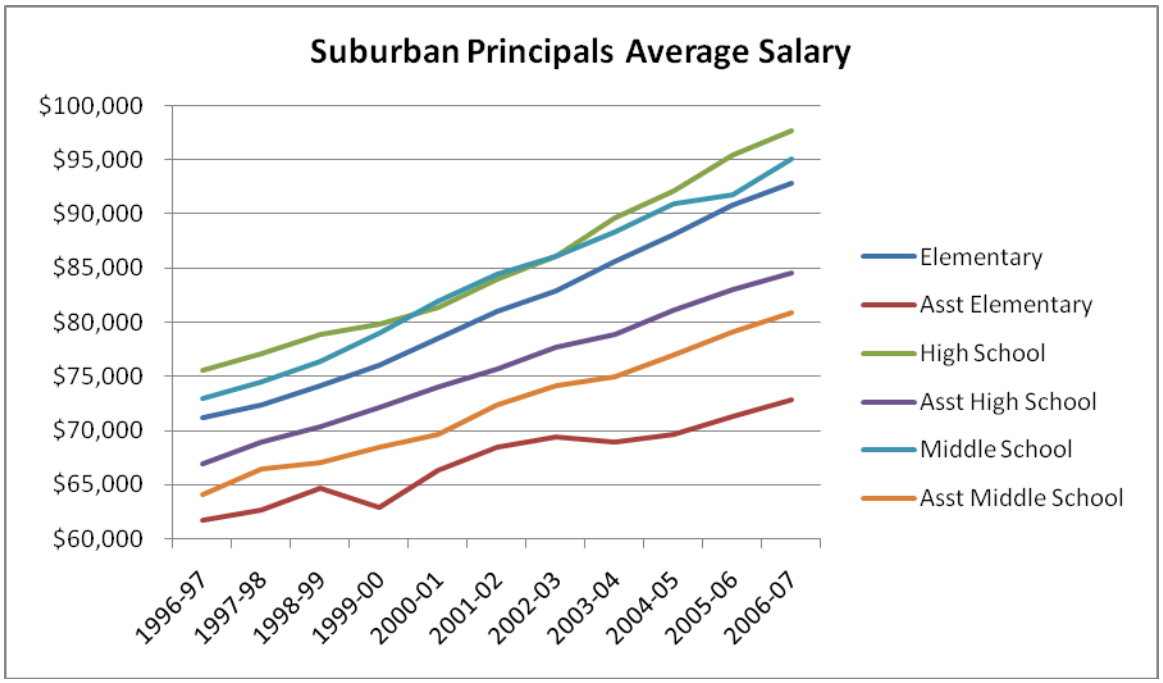
The alignment of the High School and Middle School Principal average salaries was also aligned with the implementation of NCLB. An alternative explanation was provided by the average total and average unit years of service per these positions. While the High School and Middle School Principal positions both peaked in total average years in 2000-01, the average unit years of service for the High School Principal declined slightly while

the Middle School Principal increased slightly. These differences in years of service may have caused the average salaries to be the same. As a result, one clear cause cannot be identified.

Figure D 5 depicts the trends in suburban Principal average salaries over the time period.

The crossing of the average salaries for the Assistant Elementary and Assistant Middle School Principals are explained by the average years service. The Assistant Elementary School Principal had lower average total years of service, however, the Assistant Middle School Principals had lower average unit years of service, which may be the result of No Child Left Behind and two testing grades in the Elementary and only one testing grade at the Middle School level.

Figure D 5: Suburban Principals Average Salaries

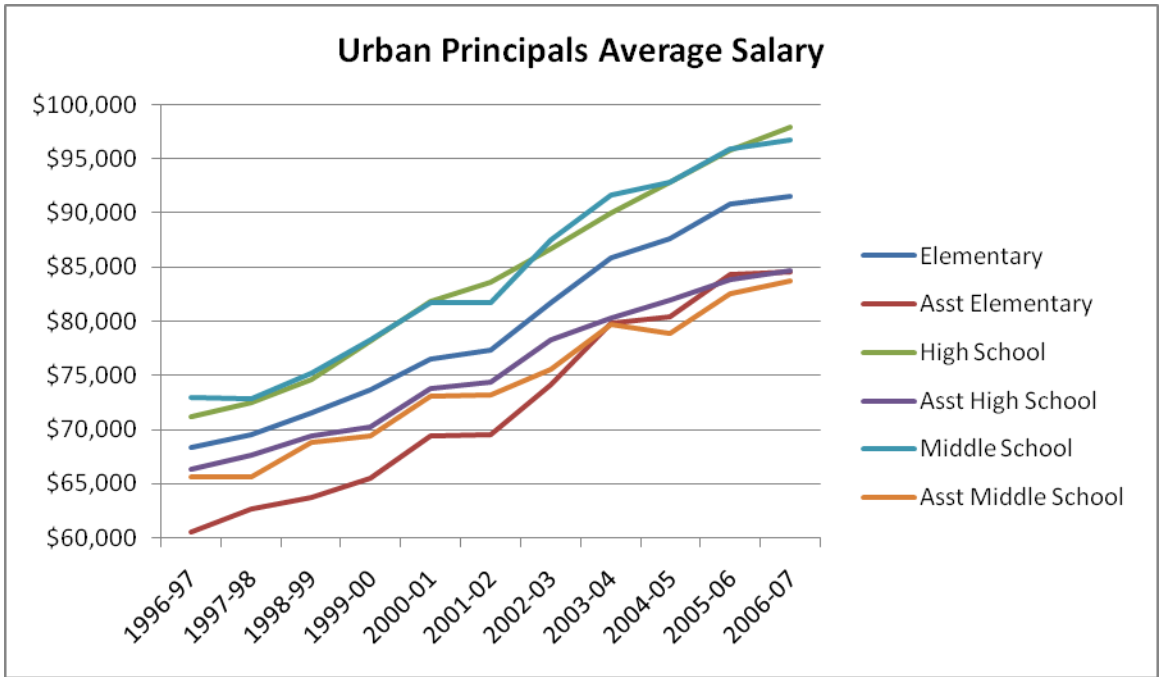


Similar to rural districts, the alignment of the High School and Middle School Principal average salaries was also aligned with the implementation of NCLB and also had an

alternative explanation provided by the average total and average unit years of service data. The suburban Middle School Principal positions had higher Average Total Years of Service and higher Average Unit Years of Service. One cause could not be attributed to this trend. In addition, the drop in the average salary for the Assistant Elementary School Principals was aligned with a sharp drop in average total years of service per the position, which was attributed to Act 41.

Figure D 6 depicts the trends in urban Principals average salaries over the time period.

Figure D 6: Urban Principals Average Salaries



In contrast to the other community types, the disruption in average salaries aligned with NCLB between the Middle School and High School created a temporary difference between the two.

In addition, the increases in the average salaries per the Assistant Middle and Elementary School Principals occurred in the 2003-04 school year were explained by the

average unit years of service. At this point, the average Elementary School Principal increased in average unit years of service and the Assistant Middle School Principals peaked. At the same time, the Assistant High School Principal average unit years of service decreased.

Act 93, Non Principals

Table D 3 details the Act 93, Non Principal average salaries across the time period by community type.

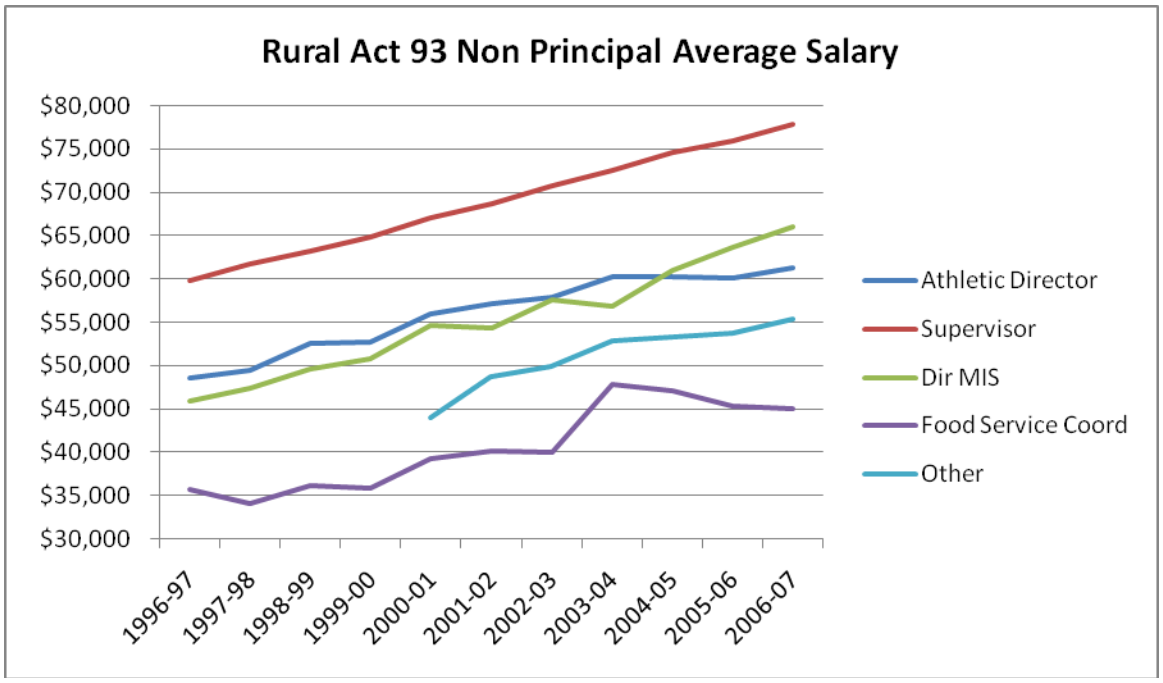
Table D 3: Act 93, Non Principals Average Salary by Community Type

Average Salary	Rural	Suburban	Urban
Athletic Director	$ 56,012	$ 67,009	$ 66,306
Supervisor	$ 68,826	$ 83,178	$ 75,447
Dir MIS	$ 55,193	$ 73,844	$ 83,923
Food Service Coord	$ 40,630	$ 55,044	$ 44,661

With the exception of the Director of Management Information Systems, suburban districts had the highest average Act 93, Non Principal salaries across the time period.

Figure D 7 depicts the rural Act 93, Non Principal average salary trends across the time period.

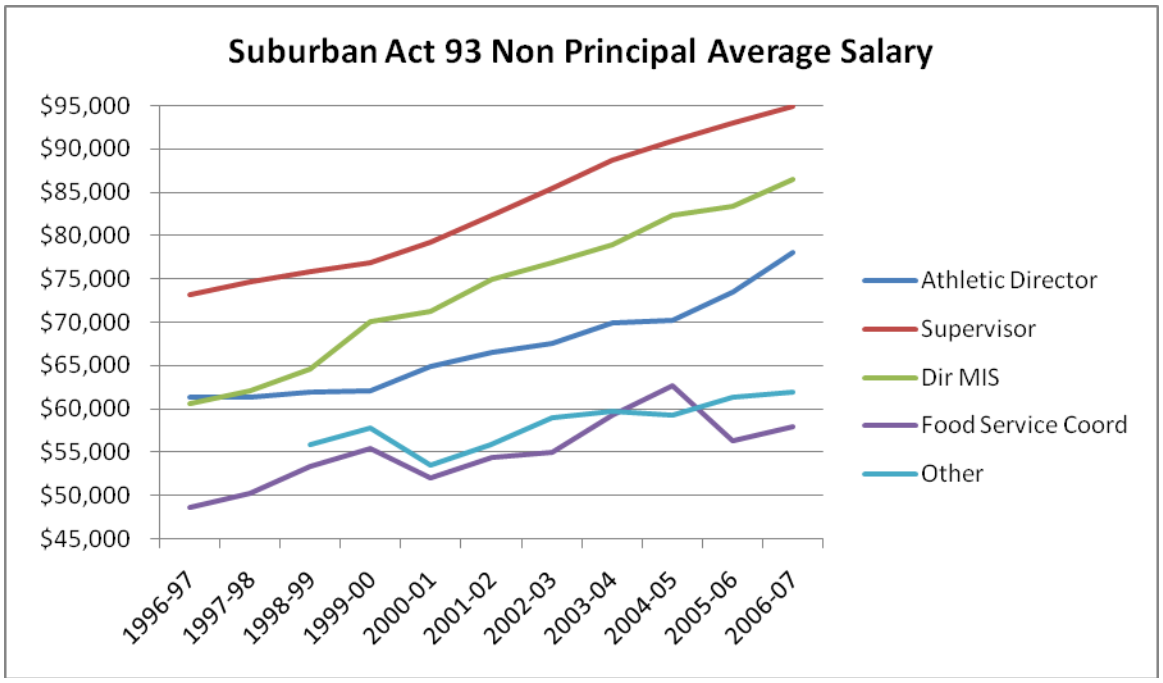
Figure D 7: Rural Act 93, Non Principals Average Salaries



The peak in 2003-04 Food Service Coordinator salaries were aligned with increases in the average years of service per this position. In both rural and suburban districts, the highest average salary per the Act 93, Non Principal positions were the Supervisors. In urban districts, the Dir of MIS held the highest average salary. In all communities, the Food Service Coordinator was the lowest. The incremental increases in the Director of MIS positions may reflect the increasing number of these positions across the time period. The leveling of the Athletic Director positions average salary was most likely the result of increasing positions and decreasing average total and average unit years of service.

Figure D 8 depicts the suburban Act 93, Non Principal average salary trends across the time period.

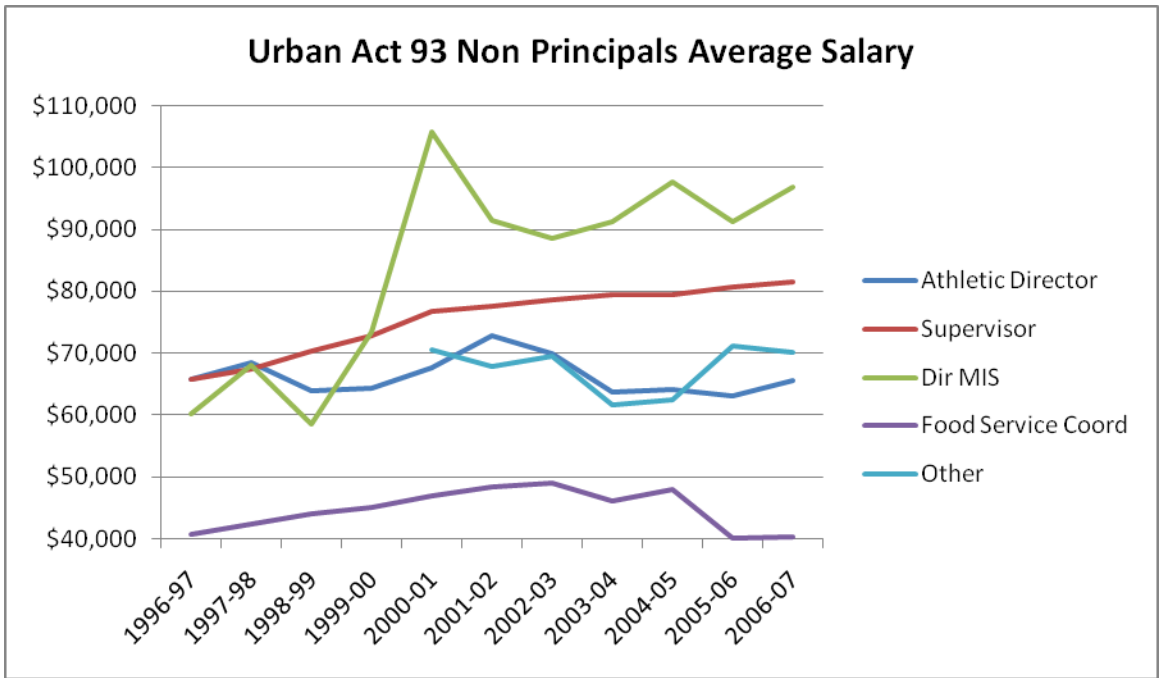
Figure D 8: Suburban Act 93, Non Principals Average Salaries



There were salary peaks per the Food Service Coordinator in the 1998-99 school year and 2004-05 school year. Both the Athletic Director and Director of MIS had periods in which the averages were increasing more than other positions which most likely was reflective of shortages in the market.

Figure D 9 depicts the urban Act 93, Non Principal average salary trends across the time period.

Figure D 9: Urban Act 93, Non Principals Average Salaries



The peaks are more difficult to attribute to environmental trends as the result of far fewer urban districts and positions. However, sharp increases in Director of MIS are aligned with the timing of growth of technology programs.

APPENDIX E

AID RATIO

Appendix E details the number and percent of districts by community type that experienced an increase or a decrease in Aid Ratio during the time period.

The Aid Ratio is an inverse indicator of relative wealth of a district. The lower the Aid Ratio, the higher the relative wealth. As a result of the funding structure of public schools in the Commonwealth with reliance on the locality, the changes in Aid Ratio can also be an indicator of changes in the relative wealth of the local communities. Table E1 details the count and percent of districts categorized by the direction of Aid Ratio change by community type. These data indicate that suburban districts, on average, had the greatest relative wealth of the three community types. However, 54.1% of suburban districts experienced decreasing relative wealth over the time period. In comparing the average relative wealth of districts in the three community types, rural districts were characterized by low but increasing relative wealth, suburban districts were characterized by high but decreasing relative wealth and urban districts were characterized by low and decreasing relative wealth.

Table E1: Direction of Aid Ratio Change

		Aid Ratio		
		Decrease	Nuetral	Increase
Rural	Count	204	0	63
267	%	76.4%	0.0%	23.6%
Suburban	Count	78	17	112
207	%	37.7%	8.2%	54.1%
Urban	Count	3	0	23
26	%	11.5%	0.0%	88.5%
Total	Count	285	17	198
500	%	57.0%	3.4%	39.6%

These data indicate that the greatest percent of districts increasing in relative wealth were rural districts. Suburban districts were the most evenly spread of the three community types concerning increases, decreases and stability in relative wealth. It should be noted that the districts remaining neutral in this analysis were also the districts with the highest level of relative wealth. Urban districts had the highest percent of districts decreasing in relative wealth.

APPENDIX F

AVERAGE DAILY MEMBERSHIP

Appendix F details the average daily membership over the time period by community type. The Average Daily Membership (ADM) is an indicator of district size as measured by student attendance. The ADM data are detailed in Table F1.

Table F1: Average Daily Membership by Community Type

Average Daily Membership	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
urban (26)	15,851	15,964	16,080	16,090	16,047	16,102	16,014	15,996	16,121	16,182	16,017
urban (24)	6,723	6,786	6,852	6,868	6,895	6,879	6,876	6,944	7,042	7,107	7,155
suburban	3,593	3,655	3,701	3,744	3,769	3,780	3,798	3,821	3,847	3,865	3,883
rural	2,237	2,305	2,260	2,307	2,268	2,253	2,240	2,235	2,230	2,220	2,214
All	3,506	3,574	3,576	3,619	3,606	3,605	3,601	3,607	3,622	3,627	3,623

Suburban districts consistently increased in the Average Daily Membership over the time period. This was the only community type that did not decrease at any point during the time period. Urban (26) districts fluctuated starting with the 2000-01 school year. Urban (24) districts decreased in 2001-02 and 2002-03 school years. Rural districts experienced declines in average daily membership since 2000.

APPENDIX G

STANDARDIZED TEST SCORES

Appendix G reviews and details the standardized test scores data. SAT and AYP scores were analyzed as a means of assessing student performance. These indicators are recognized as narrow and incomplete, however, as the result of the availability of these scores, these data served as a means to assess and compare student performance levels in relation to district administrations.

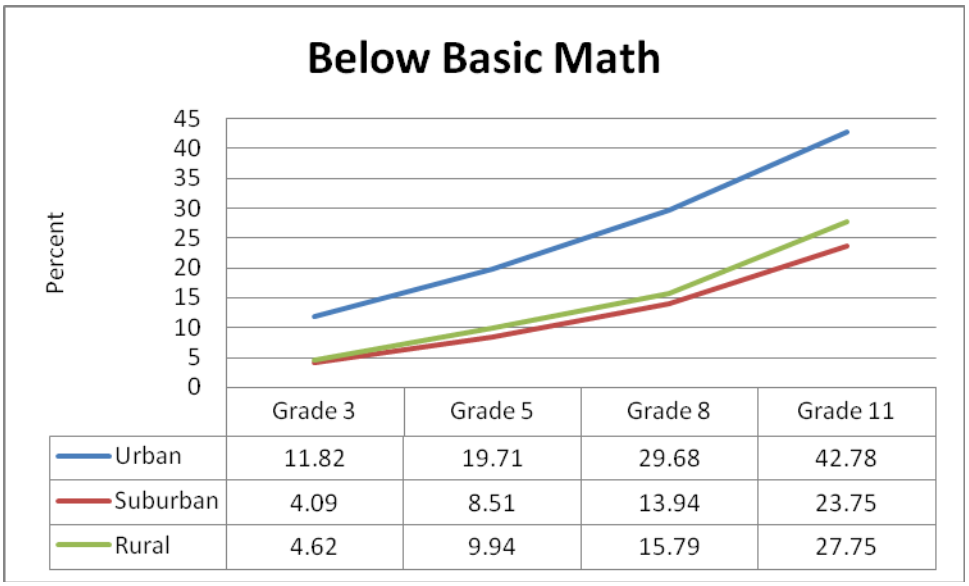
SAT Scores

The data concerning SAT averages and students tested indicated that suburban districts had, on average, the most students tested and maintained the highest averages. Rural districts maintained similar average scores across the time period but decreased in the number of students tested. Urban districts most notably had an unexplained sharp decline in the average number of students tested. Similar to the other community types, urban districts maintained relatively similar average scores across the time period although they consistently trailed both suburban and rural average scores.

AYP Scores

The percent of students testing below basic in math demonstrated different trend lines by community type as depicted in Figure G1.

Figure G1: Percent of Students Testing Below Basic Math by Grade and Community Type

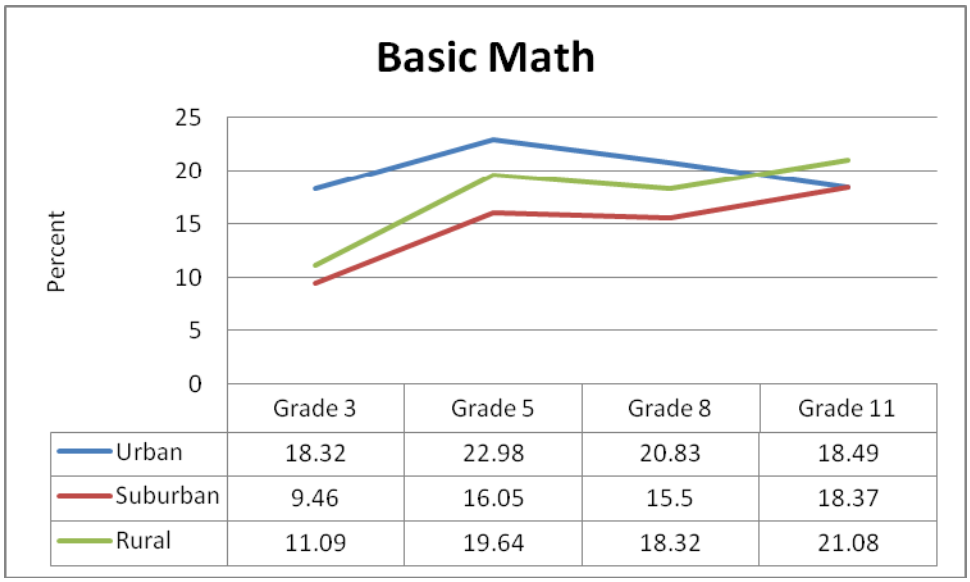


	Grade 3	Grade 5	Grade 8	Grade 11
Urban	11.82	19.71	29.68	42.78
Suburban	4.09	8.51	13.94	23.75
Rural	4.62	9.94	15.79	27.75

The percent of students that tested below basic in math increased with each grade level in all community types. Urban districts maintained the highest percent of students testing below basic. Rural and suburban districts demonstrated similar results although suburban districts maintained a slightly lower percent of students in the Below Basic Math Group.

Figure G2 depicts the percent of students testing basic in math by grade and by community type.

Figure G2: Percent of Students Testing Basic Math by Grade and Community Type

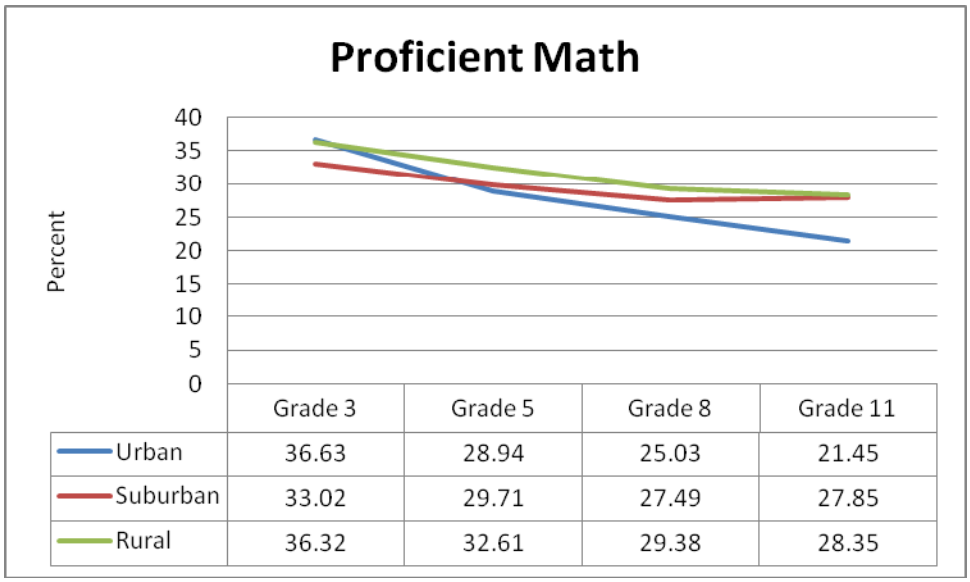


	Grade 3	Grade 5	Grade 8	Grade 11
Urban	18.32	22.98	20.83	18.49
Suburban	9.46	16.05	15.5	18.37
Rural	11.09	19.64	18.32	21.08

In all three community types, the lowest percent of students that tested basic in math occurred in grade 3 and the highest percent of students that tested basic in math occurred in grade 5. While differences were not as great between the community types as compared to below basic math, once again, rural and suburban districts demonstrated similar movement from one grade to the next and again, suburban districts had a smaller percent of districts testing basic in math.

Figure G3 depicts the percent of students that tested proficient in math by grade and community type.

Figure G3: Percent of Students Testing Proficient Math by Grade and Community Type

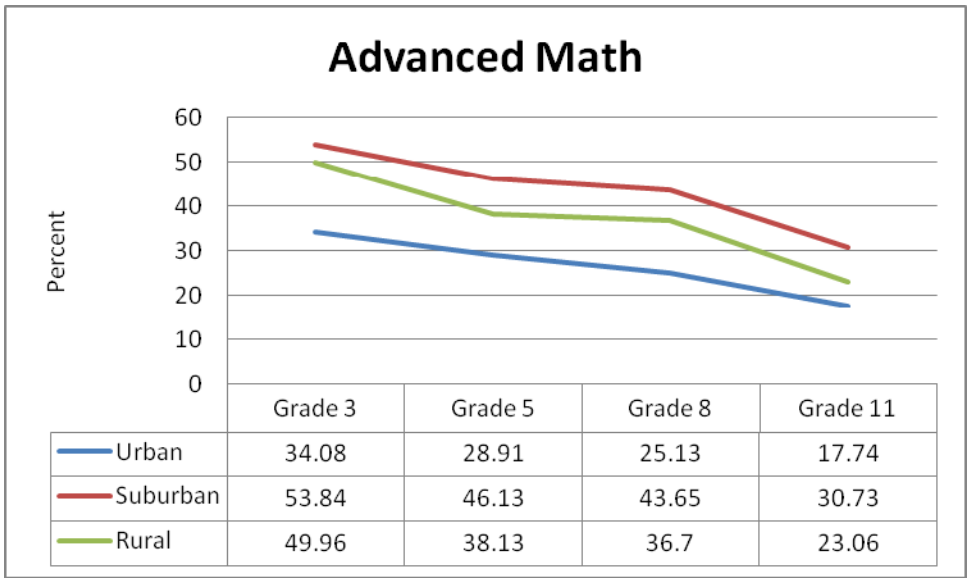


	Grade 3	Grade 5	Grade 8	Grade 11
Urban	36.63	28.94	25.03	21.45
Suburban	33.02	29.71	27.49	27.85
Rural	36.32	32.61	29.38	28.35

Once again rural and suburban districts demonstrated similar trend lines for the percent of students that tested proficient in math although rural districts had higher percents across all grades. All three community types decreased in the percent of students that tested proficient across the grade levels with the exception of suburban districts that had a slight increase in grade 11 (from 27.49 to 27.85). Urban districts had the greatest decrease in the percent of students that tested proficient moving from grade 3 to grade 5. By grade 11, urban districts had the lowest percent of students that tested at the proficient level.

Figure G4 depicts the percent of students that tested advanced in math by grade and community type.

Figure G4: Percent of Students Testing Advanced Math by Grade and Community Type

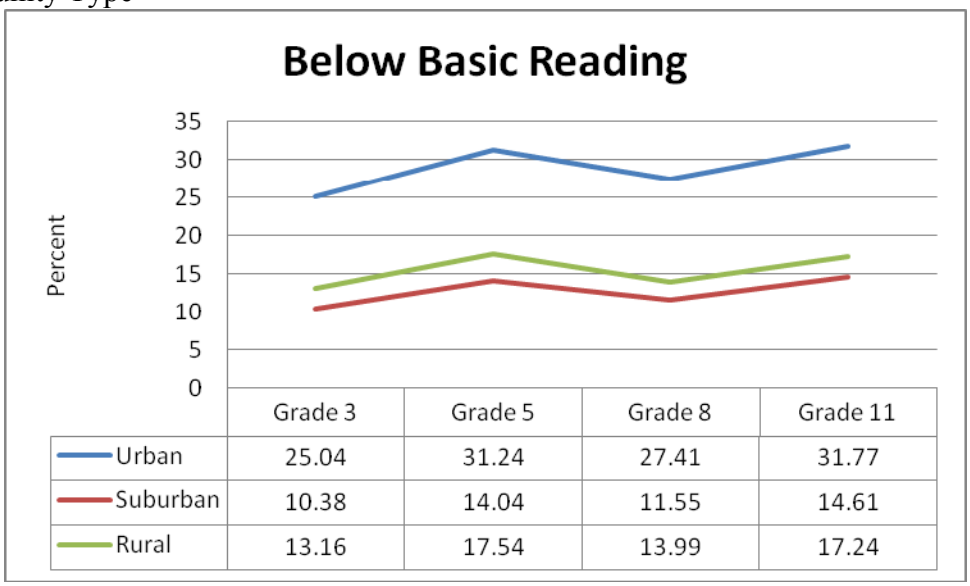


	Grade 3	Grade 5	Grade 8	Grade 11
Urban	34.08	28.91	25.13	17.74
Suburban	53.84	46.13	43.65	30.73
Rural	49.96	38.13	36.7	23.06

All three community types decreased in the percent of students that tested advanced in math with each higher grade tested. Suburban districts maintained the highest percent of students that tested advanced in math followed by rural districts. These two community types displayed similar trend lines across grades. Urban districts maintained the lowest percent of students that tested advanced in math.

Figure G5 depicts the percent of students that tested below basic in reading by grade and community type.

Figure G5: Percent of Students Testing Below Basic Reading by Grade and Community Type

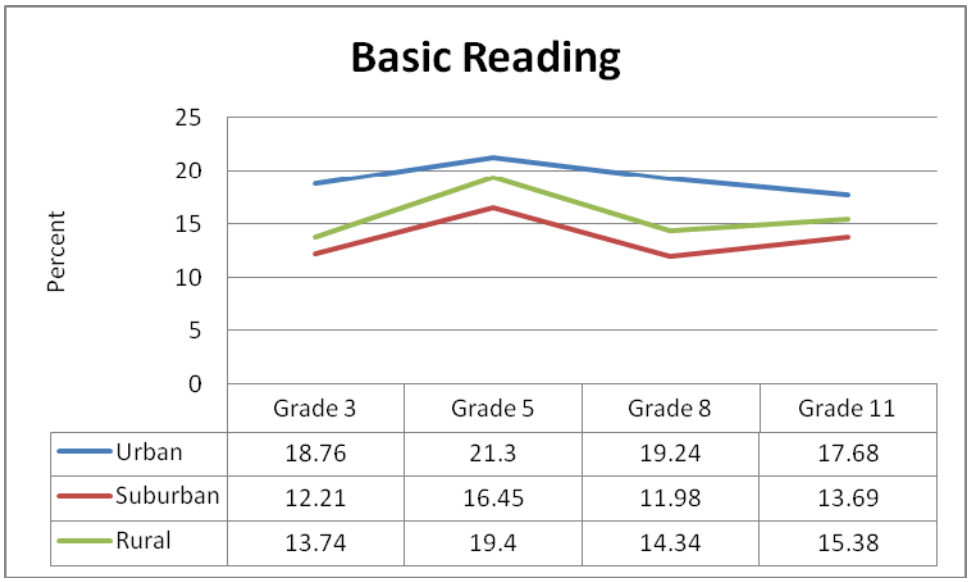


	Grade 3	Grade 5	Grade 8	Grade 11
Urban	25.04	31.24	27.41	31.77
Suburban	10.38	14.04	11.55	14.61
Rural	13.16	17.54	13.99	17.24

Similar to the below basic math percents, urban districts maintained the highest percent of students that tested below basic in reading. Rural and suburban districts demonstrated similar results although suburban districts maintain a slightly lower percent of students in the below basic reading group. Of interest and in contrast to the below basic math percents, the trend lines did not increase with each grade level tested. The decreased percent of students that tested below basic in reading in grade 8 is unexplained.

Figure G6 depicts the percent of students that tested basic in reading by grade and community type.

Figure G6: Percent of Students Testing Basic Reading by Grade and Community Type

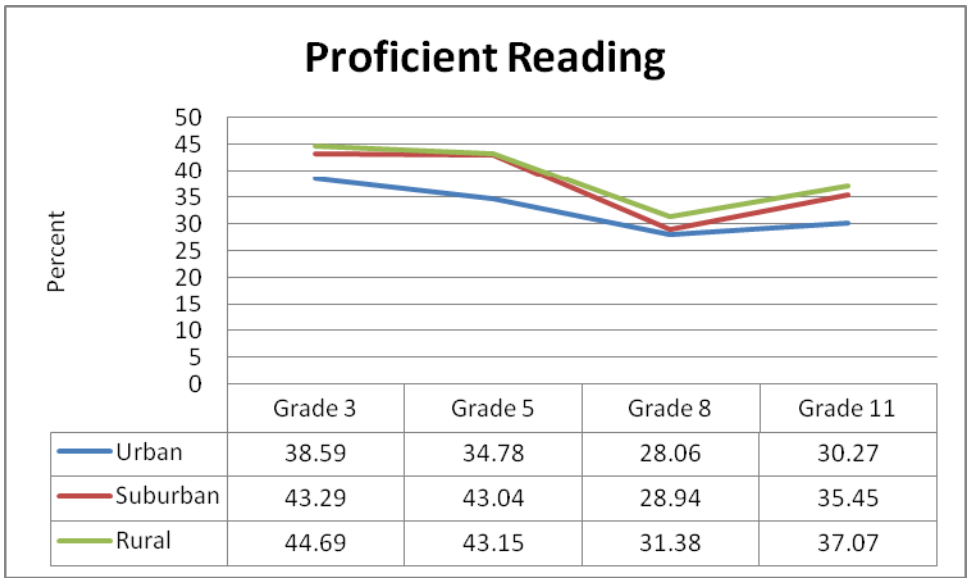


	Grade 3	Grade 5	Grade 8	Grade 11
Urban	18.76	21.3	19.24	17.68
Suburban	12.21	16.45	11.98	13.69
Rural	13.74	19.4	14.34	15.38

Once again, suburban and rural districts maintained similar trend lines across the grade levels with suburban districts maintaining a lower percent of students that tested basic in reading. All community types had the highest percent of students that tested basic in reading in grade 5.

Figure G7 depicts the percent of students that tested proficient in reading by grade and community type.

Figure G7: Percent of Students Testing Proficient Reading by Grade and Community Type

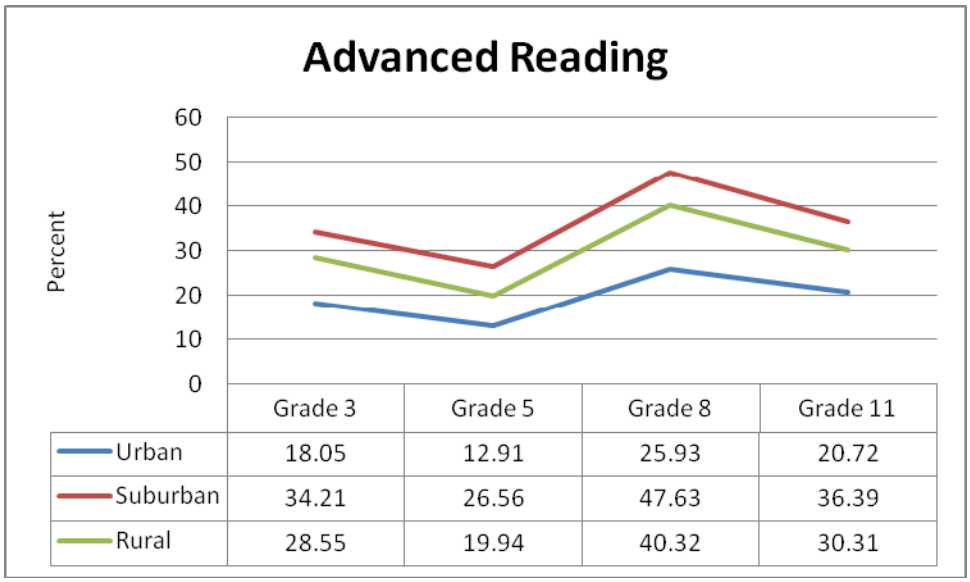


	Grade 3	Grade 5	Grade 8	Grade 11
Urban	38.59	34.78	28.06	30.27
Suburban	43.29	43.04	28.94	35.45
Rural	44.69	43.15	31.38	37.07

In all three community types, grade 3 had the highest percent of students that tested proficient in reading. Suburban and rural maintained similar percents, with rural districts having slightly larger percents of students that tested proficient in reading.

Figure G8 depicts the percent of students that tested advanced in reading by grade and community type.

Figure G8: Percent of Students Testing Advanced Reading by Grade and Community Type



	Grade 3	Grade 5	Grade 8	Grade 11
Urban	18.05	12.91	25.93	20.72
Suburban	34.21	26.56	47.63	36.39
Rural	28.55	19.94	40.32	30.31

Suburban districts remained the highest, and once again, suburban and rural districts maintained a similar pattern. While lower and with less variance, urban districts also had a similar increasing and decreasing pattern as the other two community types for advanced reading.

APPENDIX H

COMMUNITY CHARACTERISTICS

Appendix H details community data to include school completion, population in workforce, median family incomes, household incomes, populations below and above the poverty level, mean housing occupancy and housing occupied. All data are presented as average total counts and as a percent by community as a means of norming these data for comparison.

All three community types had the largest percent of the population as high school graduates as the highest level of school completion. Table H1 indicates the average school completion level as a percent of the population by community type.

Table H1: School Completion by Community Type

Population School Completion - Mean	Urban		Suburban		Rural	
No School Attainment	1,107.12	2%	90.62	1%	52.12	1%
Nursery to 8th	4,262.26	7%	629.02	4%	565.12	7%
9th to 12th Grade	14,135.00	23%	1,698.63	11%	1,227.88	15%
High School graduate	27,479.23	45%	6,311.20	41%	4,265.06	53%
Assoc Degree	388.65	1%	1,207.74	8%	521.73	6%
All College Degrees	13,923.77	23%	5,455.71	35%	1,398.02	17%
Totals	61,296.03	100%	15,392.92	100%	8,029.93	100%

Of particular interest was the percent of the population in each community type that falls into any of the three degree categories of high school graduate, associate's degree and all college degrees. Sixty-nine percent of the population in urban communities fall into these categories. Seventy-six percent of the population in rural communities fall into these categories. Eighty-four percent of the population in suburban communities fall into these. On balance, this would indicate a greater percent of the population in suburban communities had completed more schooling. Of interest, while

there was a higher percent of the rural population with some level of a degree, there was a greater population in urban communities with college degrees.

The increased percentages of the suburban communities with post secondary degrees was aligned with the highest student performance levels in suburban schools. The total percent of the population by community type falling into the degree categories (suburban 84%, rural 76%, urban 69%) was reflective of the student performance data. In addition, the highest percent of the population not graduating high school are in urban communities (32%) which was aligned with the lowest level of student performance in these communities. These data suggest another contributing factor to student performance levels.

Table H2 details the average male population in the workforce by community type and Table H3 details the average female population in the workforce by community type.

Table H2: Males in the Workforce by Community Type

Population in Workforce - Males						
	Urban		Suburban		Rural	
Males in Labor Force	27,147.69	63%	7,336.23	73%	3,652.50	69%
Males not in Labor Force	15,716.73	37%	2,777.88	27%	1,638.48	31%
Totals	42864.42	100%	10114.11	100%	5290.98	100%

The highest average percent of males in the labor force reside in Suburban communities at 73%, followed by rural communities at 69% and urban communities at 63%.

Table H3: Females in the Workforce by Community Type

Population in Workforce - Females						
	Urban		Suburban		Rural	
Females in Labor Force	26,897.12	53%	6,442.91	57%	3,002.80	54%
Females not in Labor Force	23,602.50	47%	4,776.32	43%	2,550.53	46%
Totals	50499.62	100%	11219.23	100%	5553.33	100%

The highest percent of females in the labor force reside in suburban communities at 57%, followed by rural communities at 54% and urban communities at 53%.

Table H4 details the median family income by community type.

Table H4: Median Family Income by Community Type

Median Family Income	
Urban	38,368.69
Suburban	57,313.17
Rural	43,406.86
Average	46,362.91

The median family income by community type aligned with the average total percent of the population in the work force by community type. The average total population in the workforce was the highest in suburban communities with 65% of the population followed by rural communities at 61% and urban communities at 58%. The median family income data by community type was aligned with the aid ratio data indicating the relative wealth of the three community types. Greater differences were identified through the household income data detailed in Table H5.

Table H5: Household Incomes by Community Type

Household Incomes	Urban		Suburban		Rural	
10K - 25K	8,899.42	31%	971.49	13%	796.95	21%
25K - 40K	5,841.92	21%	1,159.62	16%	831.38	22%
40K - 60K	5,831.15	21%	1,562.09	22%	962.73	25%
60K - 100K	5,497.12	19%	2,108.65	29%	876.17	23%
Over 100K	2,208.96	8%	1,431.77	20%	312.93	8%
	28,278.57	100%	7,233.62	100%	3,780.16	100%

The distributions of household incomes by community type were aligned with expectations as the result of the relative wealth data that were analyzed. Essentially, suburban communities on average had the highest level of relative wealth.

The mean population below the poverty level by age is depicted in Table H6.

Table H6: Mean Population Below the Poverty Level by Age and Community Type

Mean Population Below Poverty Level by Age	Urban		Suburban		Rural	
Under 5	2,281.35	10%	133.26	8%	110.26	9%
5 - 17 years	5,845.77	25%	351.13	20%	303.53	24%
18 - 64 years	12,734.62	55%	983.15	57%	690.68	54%
over 65	2,395.19	10%	268.27	15%	174.18	14%
Total	23,256.93	100%	1,735.81	100%	1,278.65	100%

While a similar distribution of the population fell into each of the age categories for below poverty level groups, the urban actual numbers were larger than the other community types as the result of larger populations. This in turn resulted in significant relationships between the community types however; this appeared to be more of a function of the way in which these data were reported.

Table H7 details the mean population above the poverty level by age.

Table H7: Mean Population Above the Poverty Level by Age and Community Type

Mean Population Above Poverty Level by Age	Urban		Suburban		Rural	
Under 5	5,147.31	6%	1,415.24	6%	660.51	6%
5 - 17 years	15,066.73	16%	4,321.35	18%	2,147.39	18%
18 - 64 years	56,495.58	62%	14,926.92	61%	7,345.00	61%
over 65	14,651.73	16%	3,742.02	15%	1,856.17	15%
Total	91,361.35	100%	24,405.53	100%	12,009.07	100%

Similar to the below poverty level table, the above poverty level distribution across the identified age groups were similar across the community types. In many ways, the above and below poverty level tables indicate there were similar distributions by age across the community types.

Table H8 details the mean housing occupancy by community type.

Table H8: Mean Housing Occupancy by Community Types

Mean Housing Occupancy	Urban		Suburban		Rural	
Housing Occupied	47,328.65	90%	10,491.75	95%	5,234.57	87%
Housing Vacant	5,476.35	10%	596.73	5%	767.37	13%
Total	52,805.00	100%	11,088.48	100%	6,001.94	100%

Suburban communities had the highest average percent of housing occupied at 95%, followed by urban communities at 90%, and rural communities at 87%. Due to the public school funding structure in the commonwealth that relies on real estate tax, the higher the level of occupied housing, the more stable one could assume the tax base.

Table H9 details the mean housing occupied levels by community type.

Table H9: Mean Housing Occupied by Community Type

Mean Housing Occupied						
	Urban		Suburban		Rural	
1 - 2 People	29,888.85	63%	6,346.78	60%	3,110.77	59%
3 - 4 People	12,810.00	27%	3,248.77	31%	1,667.52	32%
Over 4	4,629.42	10%	896.25	9%	456.72	9%
Total	47,328.27	100%	10,491.80	100%	5,235.01	100%

The data on mean housing occupied was similar in percent of the population in each category across the community types.

Student Size and Community Characteristics

Pearson correlations identified many significant relationships between student size and community characteristics. In part, the large number of significant relationships was the result of the way in which community characteristics were reported. Community characteristics were reported in total numbers within the district; as a result, the larger communities typically had larger student size and higher numbers across the community characteristics.

Aid Ratio and Community Characteristics

Of interest in these data were the negative or inverse relationships between the aid ratio of the district in relation to the identified community characteristics. What these data indicated were significant relationships between the relative wealth of the school districts and degrees obtained, males and females in the labor force (there was a stronger relationship with males), household income data and populations above the poverty level. Most of these relationships may be assumed because they are different means of assessing the wealth of a community; however, the housing occupied with 3-4 people was an unexpected significant relationship. In addition, there was no clear explanation for this relationship.

The Pearson correlations indicated significant relationships (at the .01 level, 2 tailed * or at the .05, 2 tailed level**) between Aid Ratio and the following characteristics: Education Attainment – Associates Degree (-.136**), Education Attainment – All College Degrees (-.283**), both Males (-.118**) and Females in the Labor Force (-.095*), Median Family Income (-.841**), Household Income 60k-100k (.205**), Household Income Over 100k (-.450**), All Population Above Poverty Level Categories (ranging in significance from -.123** to -.088*), Housing Occupied 3-4 People (-.088*) and Total Population at or Above Poverty level (-.107*).

The analysis of the community characteristics supported the earlier findings indirectly and provided a means of assessing the relationship between the community and the local public school district.

APPENDIX I

ADMINISTRATOR POSITION STABILITY

An analysis of seventeen different administrative positions was conducted for the eleven year time period to determine stability in the number of positions filled over the time frame. This analysis looked at how many of these positions were filled consistently with no addition or subtraction of a position during the eleven years. The administrative positions that were included and the corresponding counts by community type are presented in Table I1 (Rural), Table I2 (Suburban), and Table I3 (Urban).

Table I1: Rural Administrative Positions and Counts By Year (N=4,539)

Rural	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	Average
Superintendent	264	263	264	266	263	265	264	266	263	264	263	264.1
Assistant Superintendent	68	70	78	82	89	98	95	91	87	87	86	84.64
Elementary Principal	492	498	508	519	529	527	536	531	535	520	520	519.5
Asst Elementary Principal	35	39	41	49	50	55	63	55	59	64	70	52.73
High School Principal	358	354	365	369	379	392	392	374	364	350	336	366.6
Asst High School Principal	215	204	208	220	222	230	241	246	247	255	259	231.5
Middle School Principal	105	104	101	111	114	109	110	116	122	128	134	114
Asst Middle School Principal	49	51	49	45	46	55	58	74	72	74	82	59.55
Athletic Director	22	23	24	30	36	38	38	39	40	53	53	36
Supervisor	155	151	174	168	169	184	201	220	235	265	276	199.8
Asst to the Superintendent-C&I	18	15	19	21	20	20	21	21	18	14	16	18.45
Asst to the Superintendent-B	5	7	7	6	4	3	5	6	7	8	7	5.909
Business Manager	180	177	189	196	205	211	206	200	214	215	219	201.1
Director of MIS	10	13	14	14	15	14	13	20	23	26	32	17.64
Director of HR	5	4	5	6	5	7	10	11	20	22	24	10.82
Food Service Coordinator	10	10	11	11	9	10	9	4	3	61	74	19.27
Computer Technician	0	0	0	0	57	62	77	97	98	109	110	55.45
Total	1,991	1,983	2,057	2,113	2,212	2,280	2,339	2,371	2,407	2,515	2,561	2,257

Table I2: Suburban Administrative Positions and Counts By Year (N=3,519)

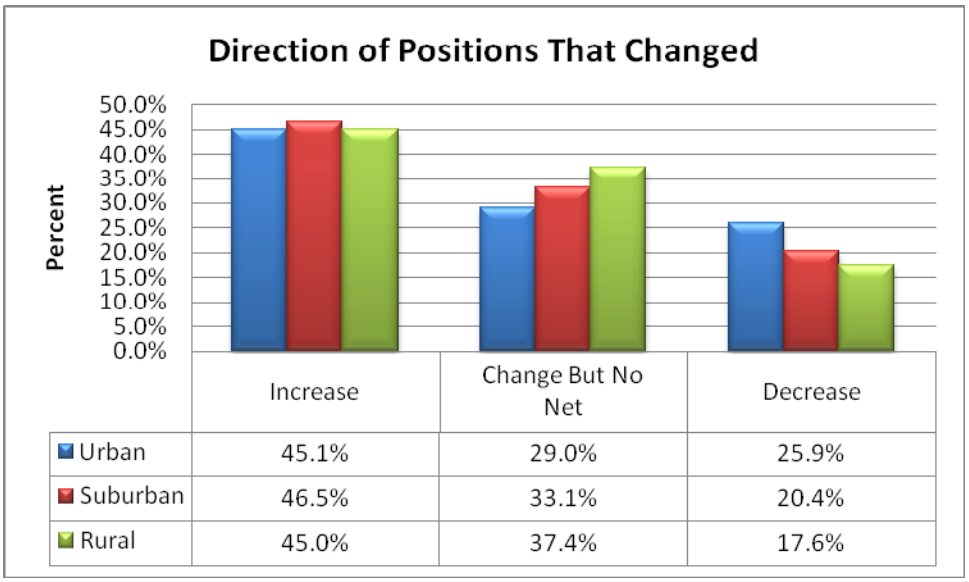
Suburban	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	Average
Superintendent	207	203	205	206	204	208	205	205	207	206	205	205.5
Assistant Superintendent	116	118	125	118	124	132	142	157	144	138	144	132.5
Elementary Principal	705	705	715	730	743	741	750	759	764	764	753	739
Asst Elementary Principal	38	37	48	57	69	75	79	66	74	81	83	64.27
High School Principal	345	351	348	364	385	383	363	344	339	312	304	348.9
Asst High School Principal	366	343	344	344	353	368	377	403	407	423	427	377.7
Middle School Principal	134	131	129	127	127	135	153	158	159	177	185	146.8
Asst Middle School Principal	116	113	125	126	136	151	156	168	188	194	194	151.5
Athletic Director	50	58	57	62	65	66	58	59	63	65	71	61.27
Supervisor	249	259	295	308	317	335	343	341	353	371	398	324.5
Asst to the Superintendent-C&I	18	18	16	15	18	17	18	19	18	17	14	17.09
Asst to the Superintendent-B	9	8	8	6	6	4	5	3	4	4	8	5.909
Business Manager	153	151	154	157	161	170	178	176	174	177	184	166.8
Director of MIS	22	28	31	29	32	34	45	47	53	61	62	40.36
Director of HR	39	44	43	46	54	56	60	61	65	66	63	54.27
Food Service Coordinator	10	10	7	7	9	9	12	8	4	47	50	15.73
Computer Technician	0	0	1	1	37	52	67	102	109	108	121	54.36

Table I3: Urban Administrative Positions and Counts By Year (N=422)

Urban	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	Average
Superintendent	26	26	25	26	24	24	26	26	26	26	26	25.55
Assistant Superintendent	31	30	32	48	49	39	28	39	41	41	45	38.45
Elementary Principal	475	451	450	439	440	414	432	442	422	424	419	437.1
Asst Elementary Principal	37	36	37	70	71	73	118	115	116	131	139	85.73
High School Principal	227	208	202	130	122	113	115	133	139	144	155	153.5
Asst High School Principal	110	111	111	180	203	175	206	188	202	208	199	172.1
Middle School Principal	56	59	60	102	106	99	95	95	88	97	81	85.27
Asst Middle School Principal	43	42	40	110	110	112	112	109	124	111	99	92
Athletic Director	7	7	8	6	7	6	9	11	11	15	16	9.364
Supervisor	117	111	101	88	94	85	101	102	101	103	115	101.6
Asst to the Superintendent-C&I	3	2	2	3	3	3	3	2	2	2	2	2.455
Asst to the Superintendent-B	1	1	2	3	3	3	0	1	1	0	1	1.455
Business Manager	19	18	20	18	19	19	19	18	19	26	24	19.91
Director of MIS	3	3	3	4	2	1	7	6	6	8	8	4.636
Director of HR	8	11	14	11	9	7	10	14	14	11	12	11
Food Service Coordinator	3	3	3	3	3	3	2	1	1	103	104	20.82
Computer Technician	0	0	0	0	12	12	20	40	37	67	76	24
Total	1,166	1,119	1,110	1,241	1,277	1,188	1,303	1,342	1,350	1,517	1,521	1,285

To provide more detail, an analysis of the positions that changed was conducted to assess the direction of change. The change categories per each community type included increased, no net change and decreased. Figure I1 depict the results of this analysis.

Figure I1: Administrator Change by Direction of Positions that Changed



	Increase	Change But No Net	Decrease
Urban	45.1%	29.0%	25.9%
Suburban	46.5%	33.1%	20.4%
Rural	45.0%	37.4%	17.6%

APPENDIX J

POSITION PERCENT CHANGE

Appendix J details the average number of a position over the time period by community type as well as the percent change of the position.

Table J1 details the average number of each contracted position over the time period as well as the net percent change from the 1996-97 school year to the 2006-07 school year.

Table J1: Contracted Position Count Averages and Percent Change Over the Time Period by Community Type

	Rural		Suburban		Urban	
Position Count	**Average**	**% Change**	**Average**	**% Change**	**Average**	**% Change**
Superintendent	264	0%	206	-1%	26	0%
Asst Superintendent	85	26%	133	24%	38	45%
Business Manager	201	22%	167	20%	20	26%
Dir HR	11	380%	54	62%	11	50%

Across all of the community types, the contracted position of Director of Human Resources had the highest percent change. Table J2 details the average Principal position counts and percent of change per position over the time period by school year and by community type.

Table J2: Principal Position Count Averages and Percent Change Over the Time Period by Community Type

	Rural		Suburban		Urban	
Position Count	**Average**	**% Change**	**Average**	**% Change**	**Average**	**% Change**
Elementary	520	6%	739	7%	437	-12%
Asst Elementary	53	100%	64	118%	86	276%
High School	367	-6%	349	-12%	153	-32%
Asst High School	232	20%	378	17%	172	81%
Middle School	114	28%	147	38%	85	45%
Asst Middle School	60	67%	152	67%	92	130%

The was a negative percent change for High School Principal positions across the time period in all three community types indicating a decrease. There were also increases in

the Assistant High School Principal position in all three community types. While there were comparatively minimal changes in the number of Elementary Principal positions (urban decreased), the Assistant Elementary Principal positions increased in all three community types by at least 100%. In all three community types, both the Middle School Principal and Assistant Middle School Principal positions increased during the time period.

Table J3 details the average position counts and percent change over the time period of Act 93, Non Principal Positions by community type.

Table J3: Act 93, Non Principal Position Count Averages and Percent Change Over the Time Period by Community Type

	Rural		Suburban		Urban	
Position Count	**Average**	**% Change**	**Average**	**% Change**	**Average**	**% Change**
Athletic Director	36	141%	61	42%	9	129%
Supervisor	200	78%	324	60%	102	-2%
Dir MIS	18	220%	40	182%	5	167%
Food Service Coord	19	640%	16	400%	21	3367%
Other	55		54		24	

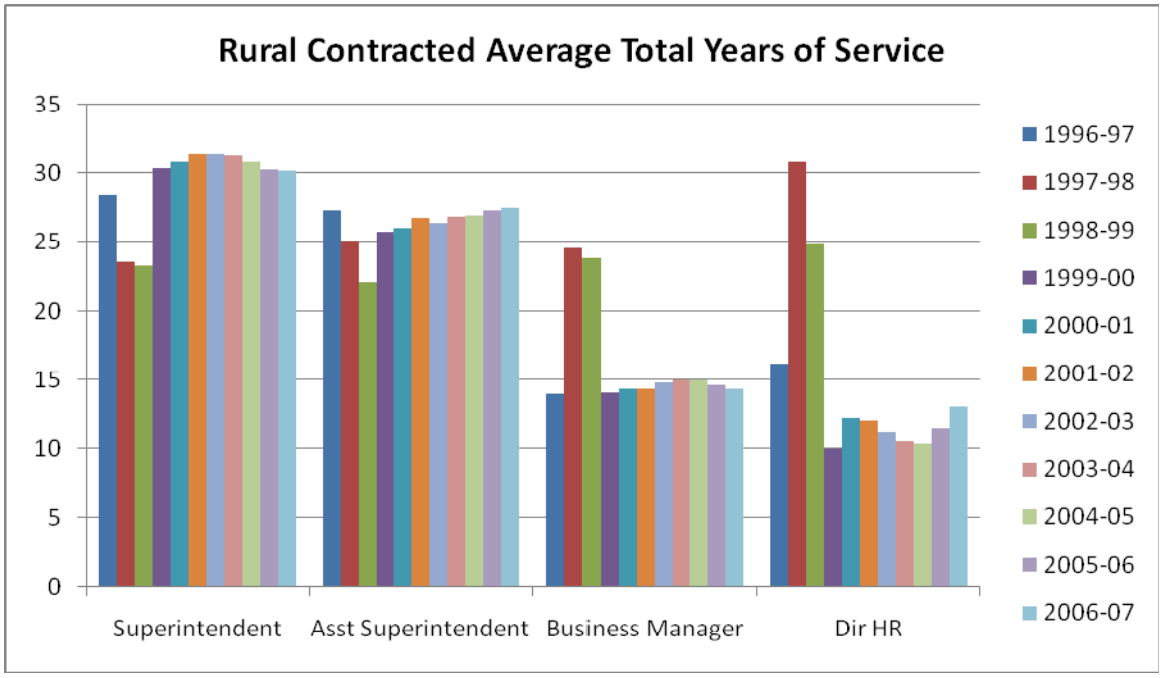
The only Act 93, Non Principal Positions that decreased over the time period were urban Supervisors by a minimal -2%. All others increased over the time period. The percent change for the Other position category was not presented because it was consistently zero in the first year of the time period.

APPENDIX K

TOTAL YEARS OF SERVICE

Appendix K details the average total years of service over the time period by position and community type. Figure K 1 details the average total years of service by year for contracted rural administrators.

Figure K 1: Rural Contracted Average Total Years of Service by Year

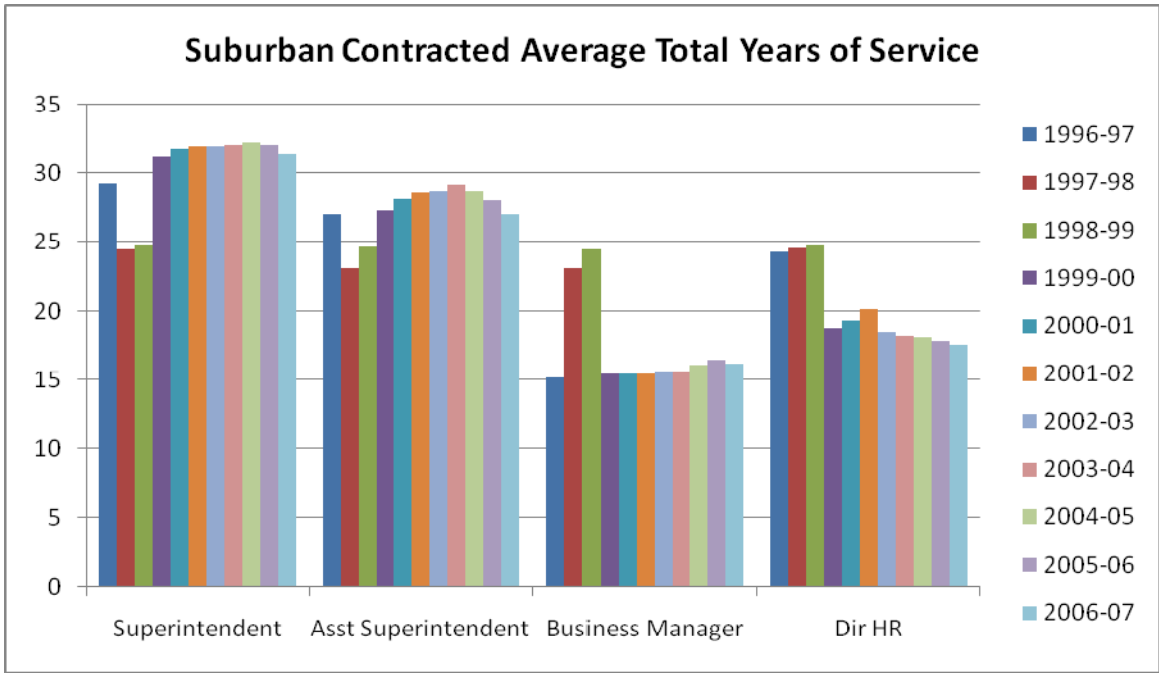


There were disruptions in all rural contracted positions average total years of service in the 1997-98 and 1998-99 school years. However, the expectation was all averages would drop during these years whereas as both the Business Manager and Director of Human Resources average total years of service increased notably during these two years and was unexplained unless tenured educators moved into these positions to fill vacancies per the two years in which early retirement was an option. Also of particular interest was the return to previous service levels by the 1999-00 school year. This would suggest the positions were filled by incumbents with similar levels of experience in education as

those that had opted for the early retirement option. Also of interest were the increasing average total years of service of the rural Assistant Superintendents. This would suggest increased stability in these positions as compared to other positions that were decreasing.

Figure K 2 depicts the Suburban contracted average total years of service in education by year.

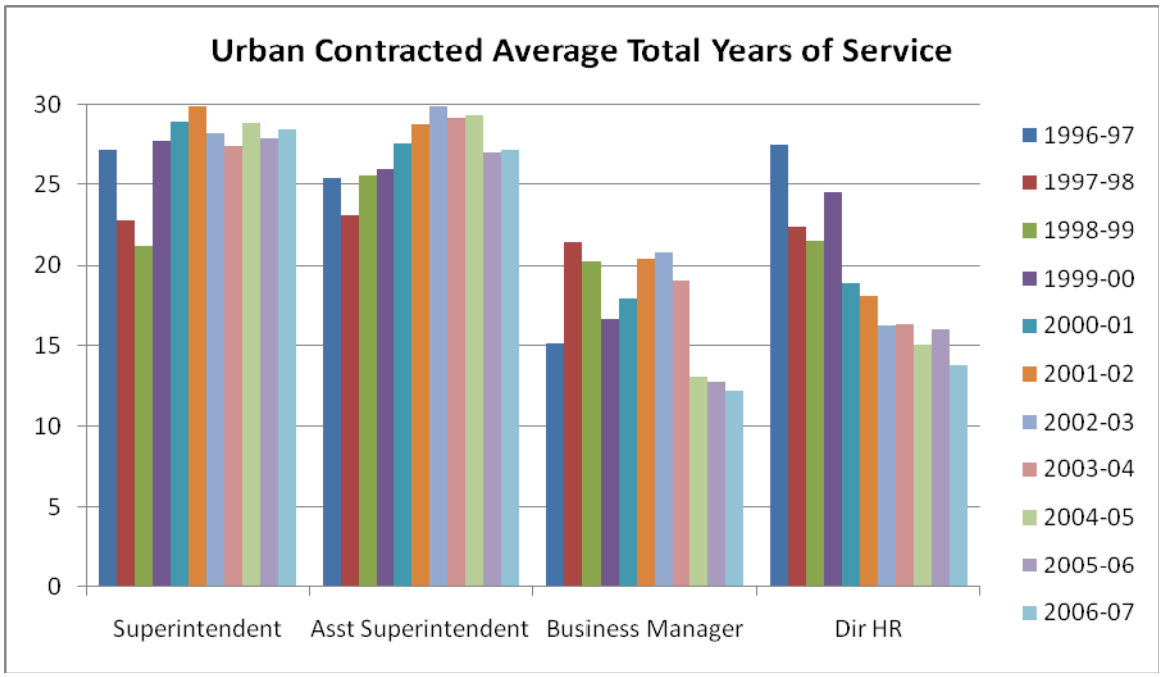
Figure K 2: Suburban Contracted Average Total Years of Service by Year



As expected, there was a clear disruption in 1997-98 and 1998-99. Of interest was the increase in average total years of service for the Business Manager position during these two years and the return to previous levels of service by 1999-00. In comparison to rural Assistant Superintendents, the average total years of service for suburban Assistant Superintendents decreased the last few years of the time period.

Figure K 3 depicts the average total years of service in education of urban contracted administrators by year.

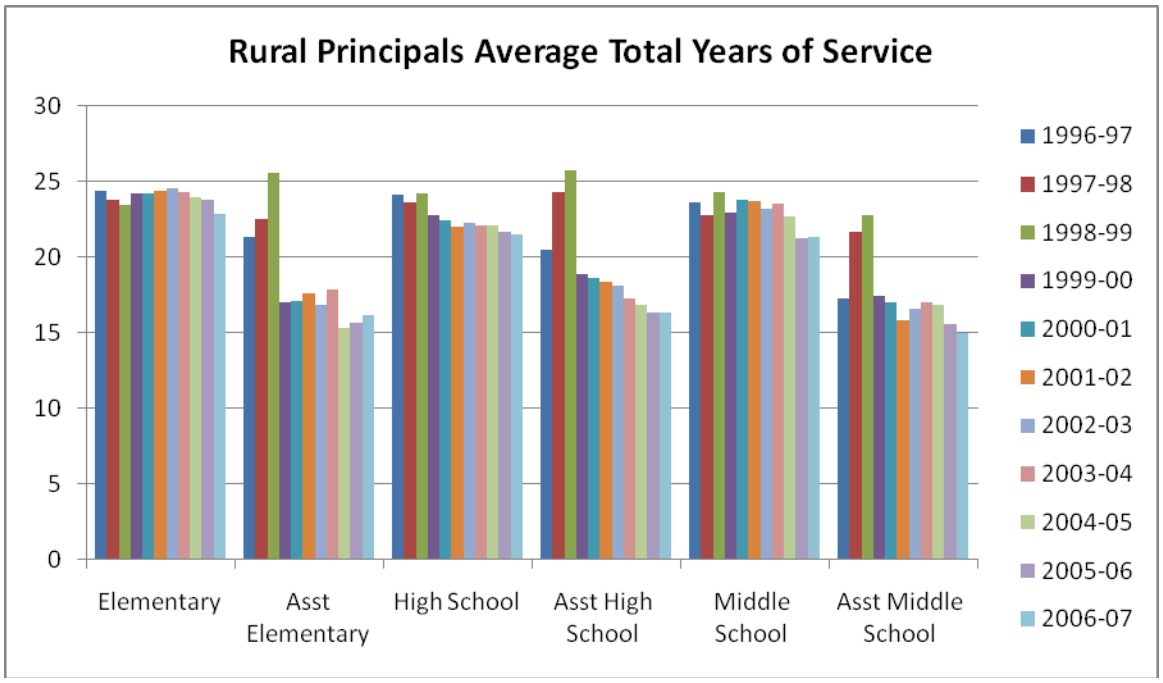
Figure K3: Urban Contracted Average Total Years of Service by Year



Similar to the other community types, there was a disruption in the average total years of service in the urban contracted positions in the 1997-98 and 1998-99 school years. Other notable trends were the decreases in the average total years of service for both the Business Manager and Director of Human Resources position towards the end of the time period.

Figure K 4 depicts the average total years of service in education for rural Principals by year.

Figure K4: Rural Principals Average Total Years of Service by Year

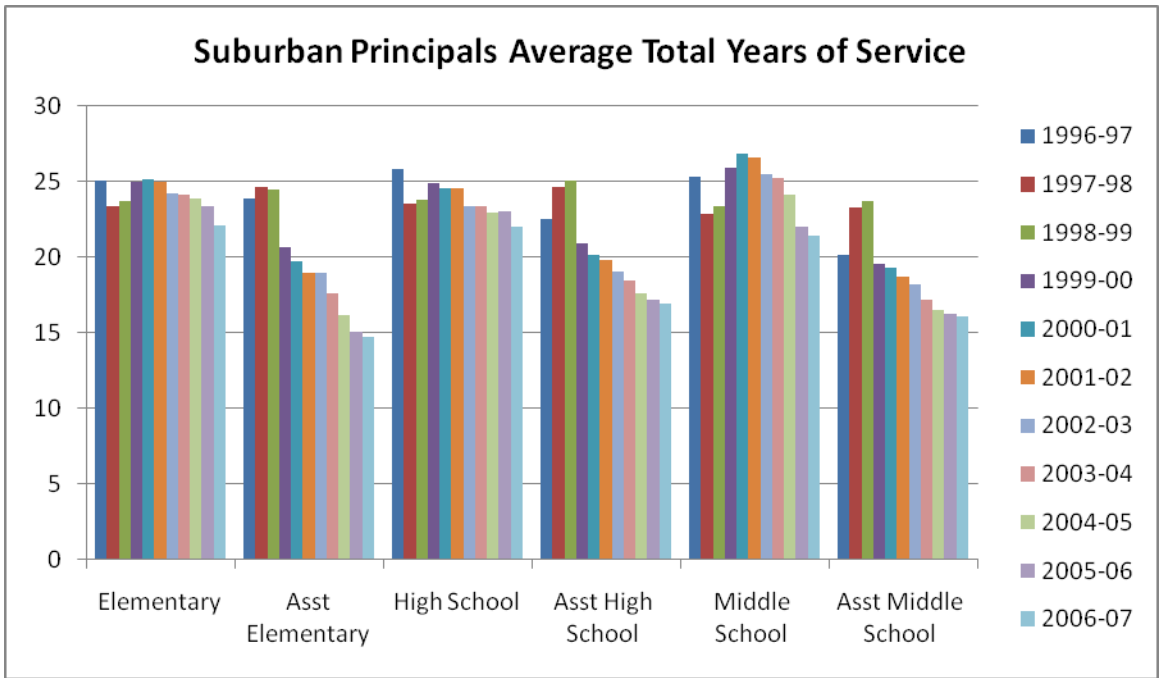


As expected and previously explained, there were disruptions in 1997-98 and 1998-99. It should be noted that the major increases in average total years of service that occurred during these two years primarily impacted the Assistant Principal positions as compared to the Principals.

There also were decreasing trends in the average total years of service in education for principals, particularly at the high school level.

Figure K 5 depicts the average total years of service in education for suburban Principals by year.

Figure K 5: Suburban Principals Average Total Years of Service by Year



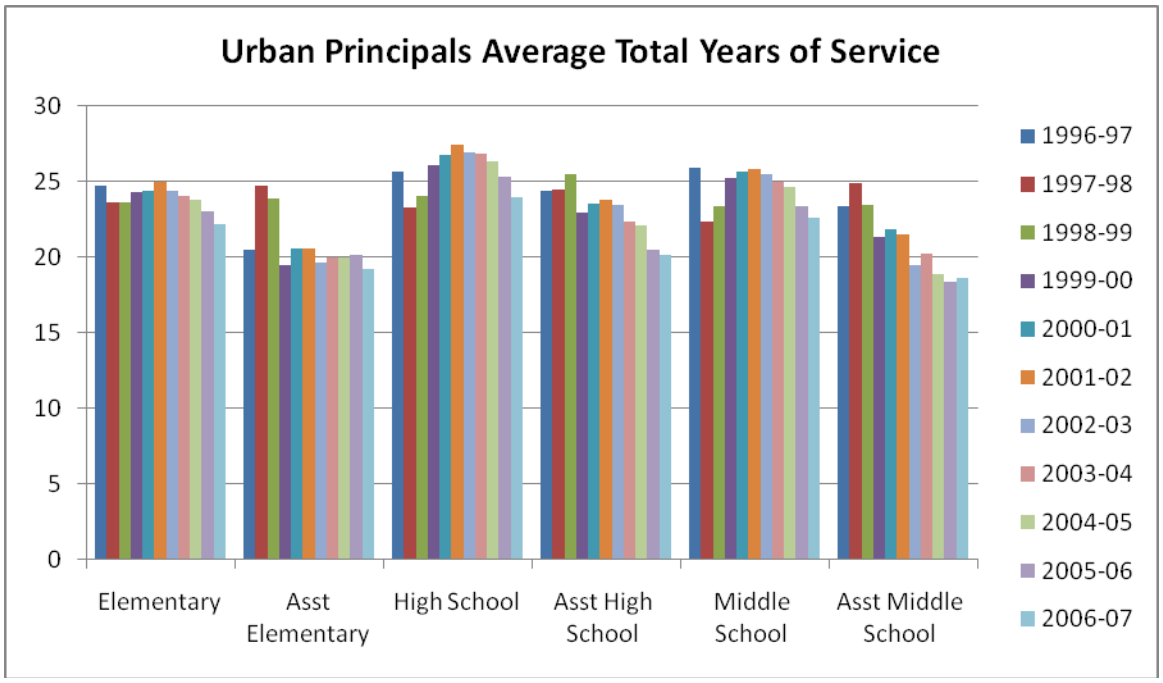
There was a disruption in 1997-98 and 1998-99, however, and in contrast to the rural Principals, the drop in average total years of service after 1999 was more for the Assistant Principal positions than the prior average total years of service level.

The general decreasing trends across the Principals in suburban communities in the average total years of service was more pronounced than the rural trends. In addition, the Middle School Principal decreases aligned with the timing of No Child Left Behind were greater than movement at either the elementary or high school levels.

The most dramatic decreases in the average total years of service occurred in the Assistant Principals and were assumed to be in part aligned with the increase in the number of position over the time period.

Figure K 6 depicts the average total years of service in education for urban Principals by year.

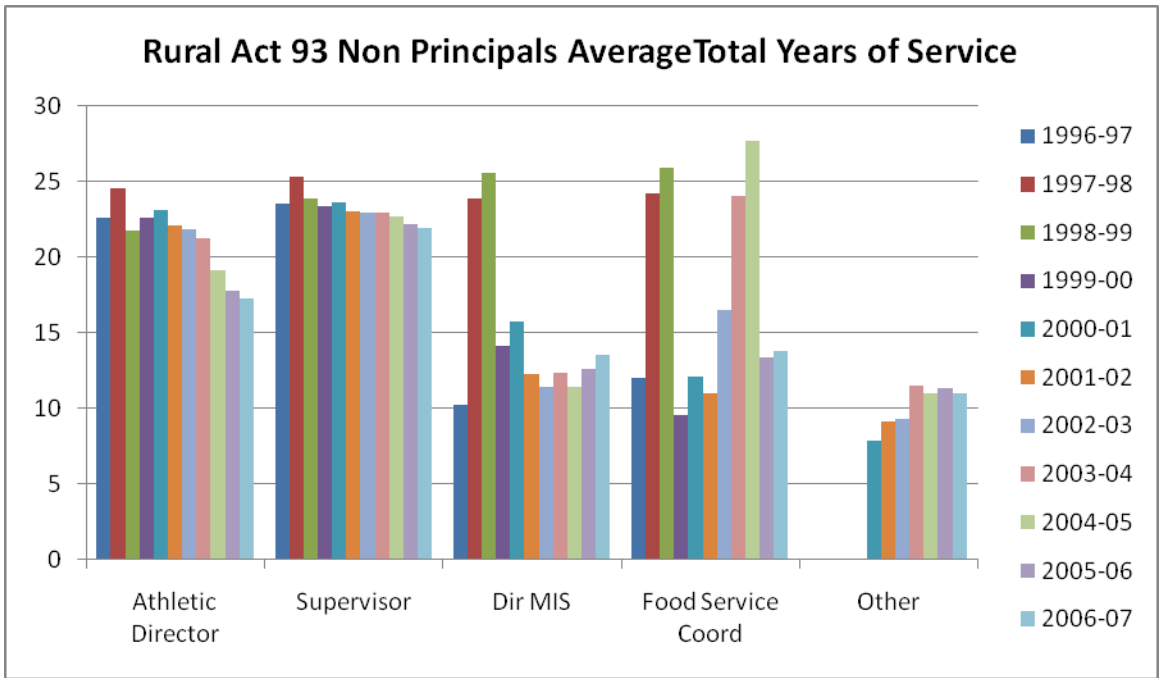
Figure K 6: Urban Principals Average Total Years of Service by Year



As expected there were some disruptions in the average total years of service for principals in 1997-98 and 1998-99. In contrast to the other community types, the decreasing trends for most of the urban Principal positions did not begin until after the 2001-02 school year in which NCLB was implemented. Only the Assistant Elementary School Principal did not have a peak in the average totals years of service of urban Principals. This was assumed to be the result of long term educators moving from Principal positions due to increasingly unattainable academic performance standards placed on schools with punitive results for failure to meet the established targets.

Figure K 7 depicts the Rural Act 93, Non Principals average total years of service in education by school year.

Figure K 7: Rural Act 93, Non Principals Average Total Years of Service by Year

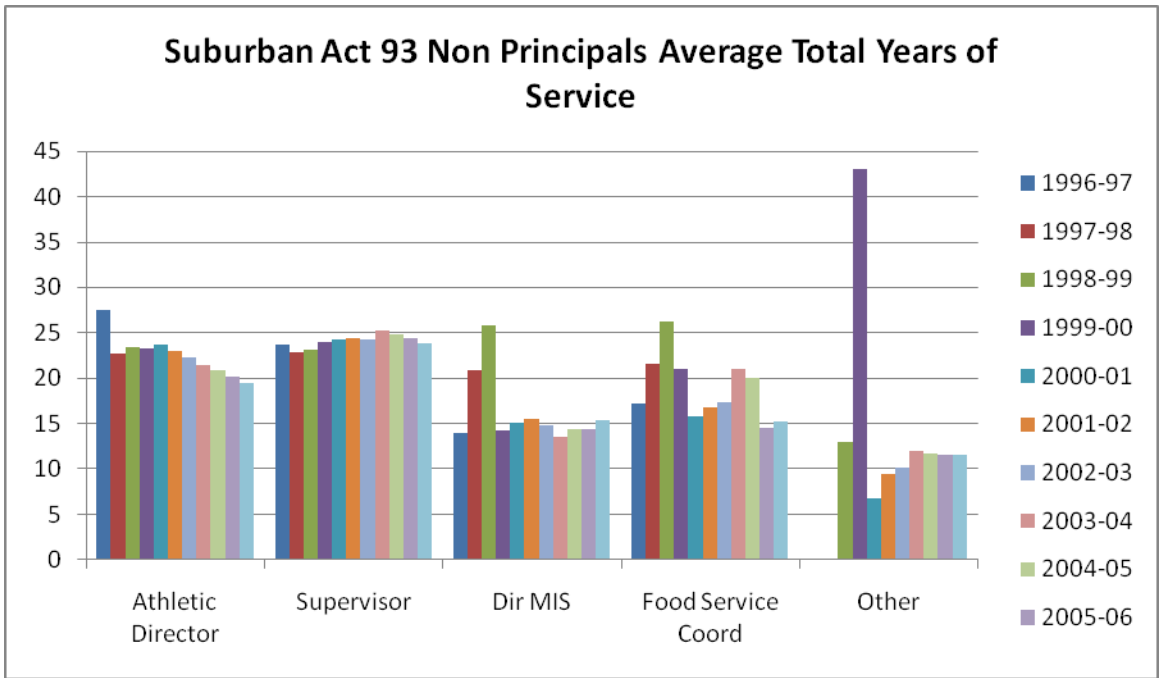


Disruptions again occurred in 1997-98 and 1998-99 which were attributed to Act 41. In addition, the Food Service Coordinator position increased in average total years of service each year from 2002 through 2004 indicating experienced individuals moving into these posts.

The Athletic Director position decreased in average total years of service and the Supervisors remained relatively stable although slightly decreasing. The Director of MIS and Other positions varied but on balance remained relatively stable.

Figure K 8 depicts the suburban Act 93, Non Principals average total years of service in education by school year.

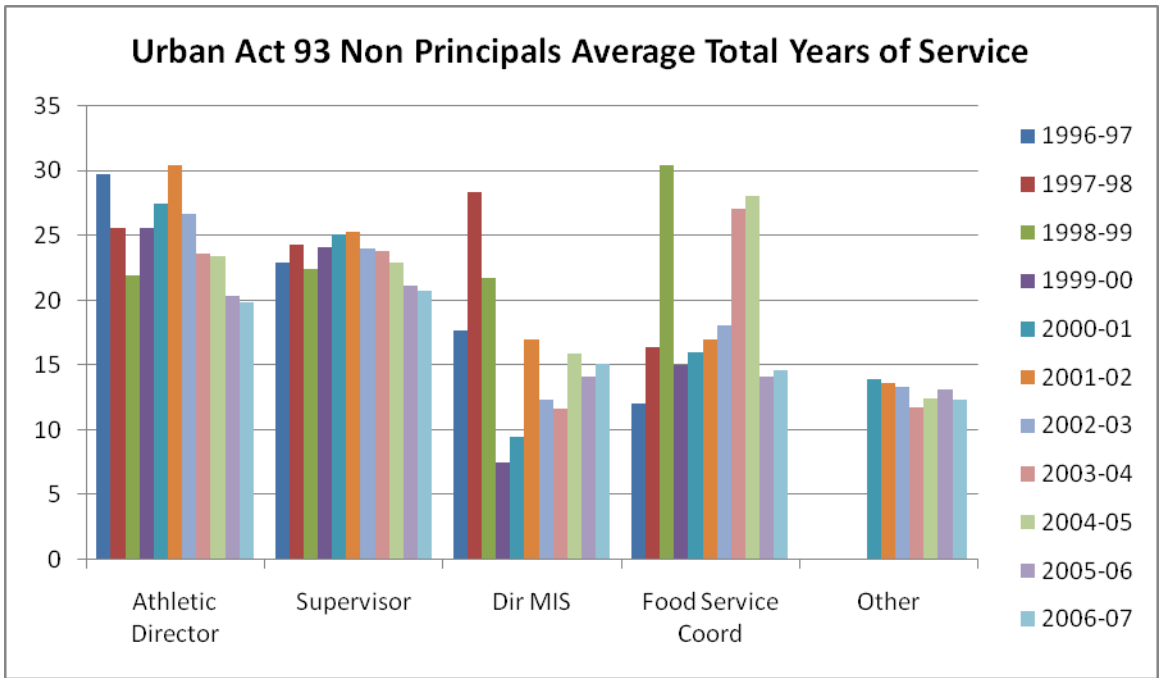
Figure K 8: Suburban Act 93, Non Principals Average Total Years of Service by Year



The sharp increase in the average total years of service for the Other position in 1999-00 was explained by very few positions and the movement of one incumbent with many years of service in education. This was not reflective of environmental trends. Similar to rural communities, the Food Service Coordinator position average total years of service increased each year from 2002 through 2004. The Athletic Director position decreased in average total years of service and the Supervisors remained relatively stable with a slight increase. With the exception of 1997-98 and 1998-99, the Director of MIS remained stable.

Figure K 9 depicts the urban Act 93, Non Principals average total years of service in education by school year.

Figure K 9: Urban Act 93, Non Principals Average Total Years of Service by Year



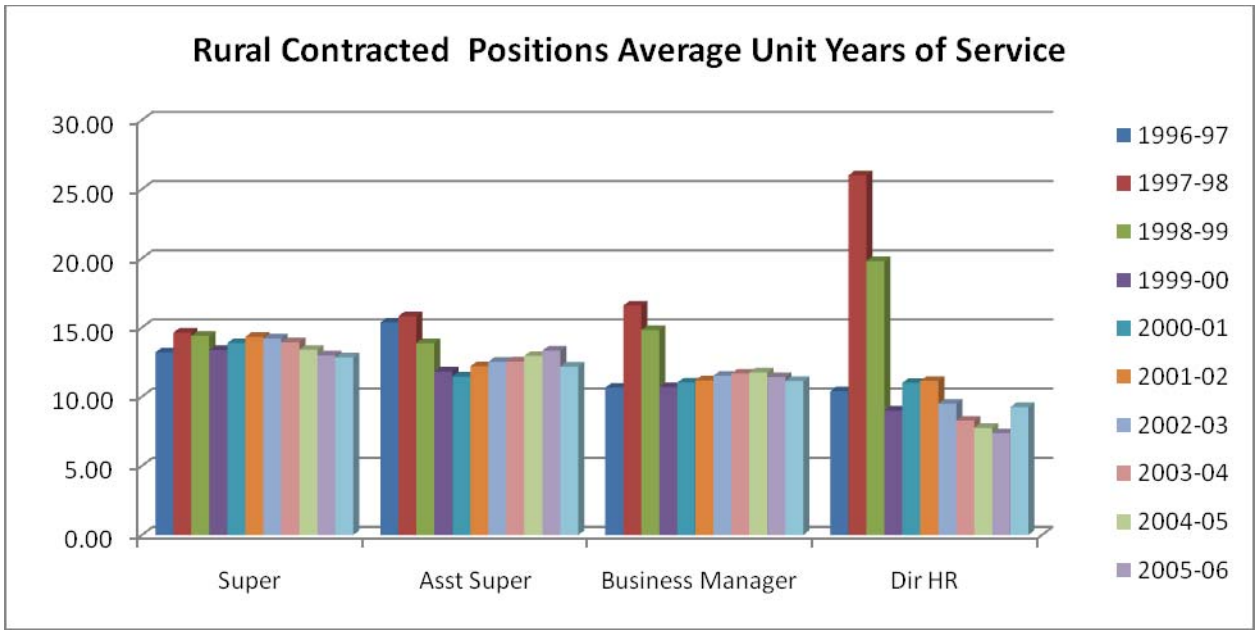
Most disruptions in trends per the urban Act 93, Non Principals in average total years of service are similar to the other community types although more drastic due to far fewer urban districts. The timing of the disruptions in the trends per these positions were aligned with the timing of Act 41 and NCLB.

APPENDIX L

UNIT YEARS OF SERVICE

Appendix L details the average unit years of service over the time period by position and community type. Figure L 1 depicts the average unit years of service per the rural contracted positions by year.

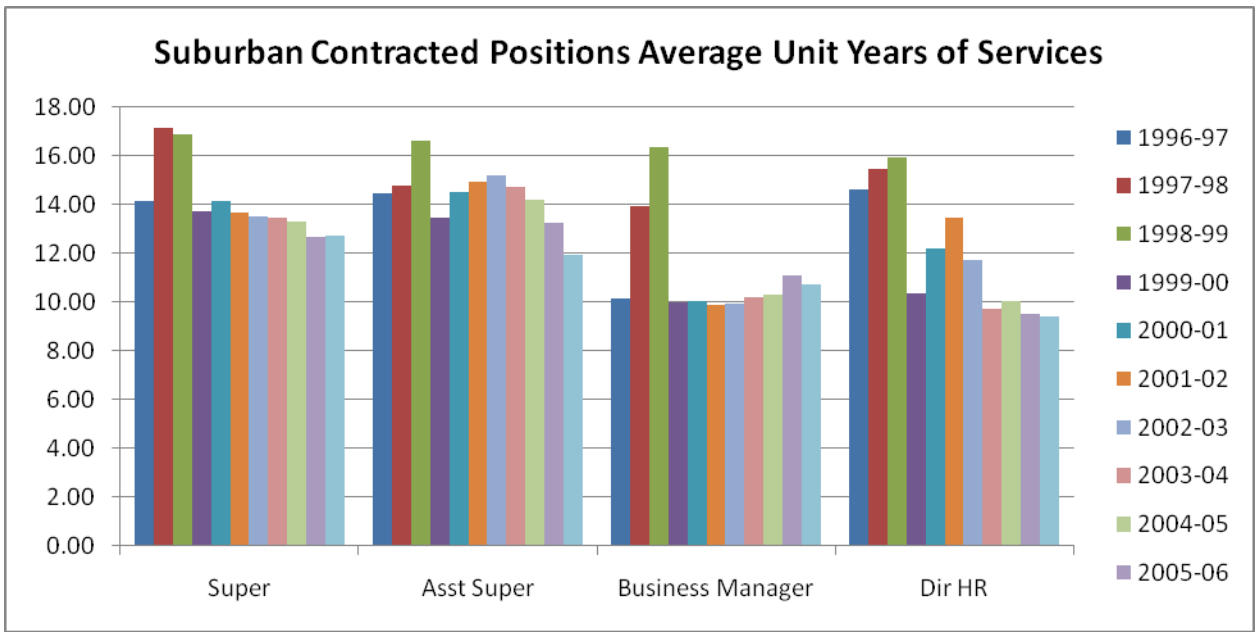
Figure L 1: Rural Contracted Average Unit Years of Service by Year



The increases in all four contracted positions in 1997- 98 and 1998-99 suggests rural districts filled the positions of administrators that opted for early retirement with long term employees – most notably in the Business Manager and Director of Human Resources positions. In addition, the apparent inverse trends in the average unit years of service per the Superintendent and Assistant Superintendent positions may suggest that the Assistant Superintendents with greater years of service in the district were selected for the open superintendent positions.

Figure L 2 details the average years of service in the district of suburban contracted positions by year.

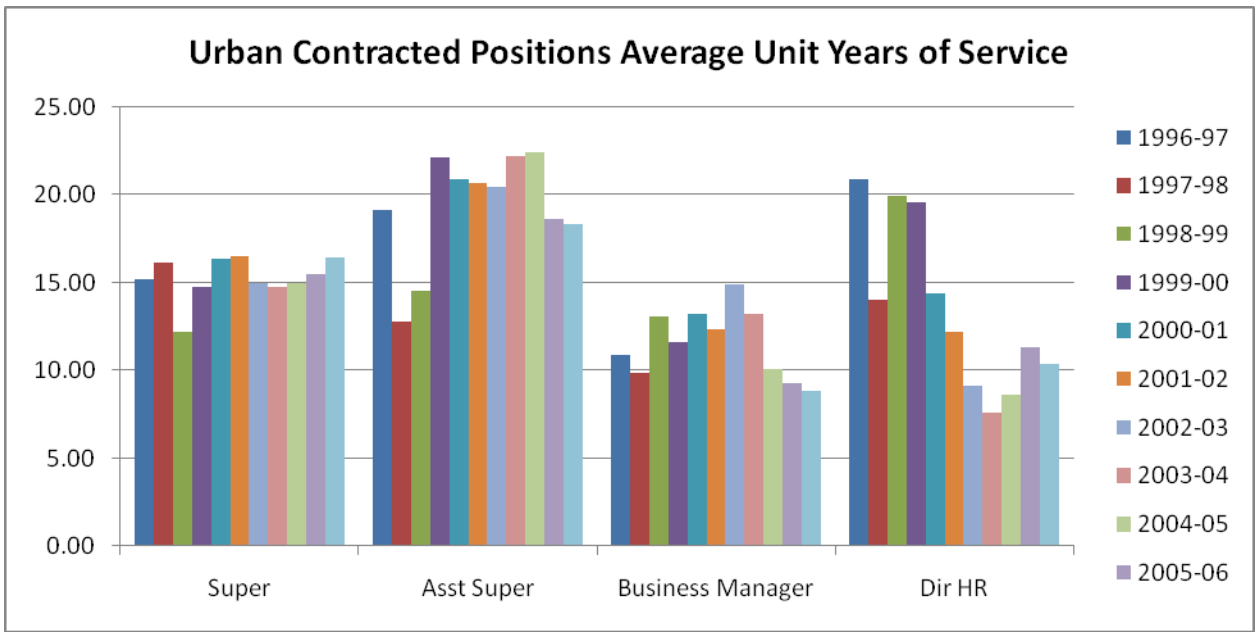
Figure L 2: Suburban Contracted Average Unit Years of Service by Year



As expected, there were disruptions in 1997-98 and 1998-99 and the increases in the averages suggest suburban districts selected long term internal employees to fill the posts. However, the decreases in the average unit years of service for both the Superintendent and Assistant Superintendent positions toward the end of the time frame suggests more external candidates were selected for these positions or, for the Assistant Superintendent, those being selected have less experience than those that came before as a result of the decrease in both the average unit years and average total years of service. There also appears to be a period in which the average unit years of service were similar if not more for the Assistant Superintendents than the Superintendents from 2000 through 2005 suggesting external Superintendent candidates may be selected more often in suburban districts.

Figure L 3 details the average years of service in the district of urban contracted positions by school year.

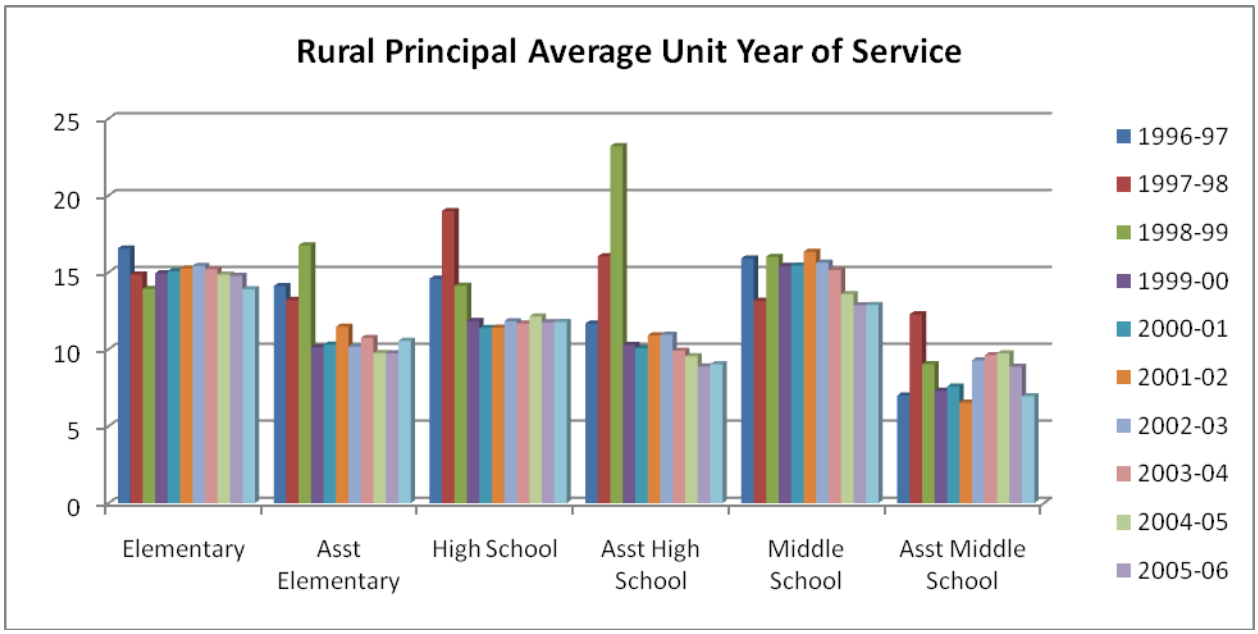
Figure L 3: Urban Contracted Average Unit Years of Service by Year



As expected, there were disruptions in 1997-98 and 1998-99. In addition, there were some decreasing trends suggesting more incumbents having fewer years in the district. While there were fewer urban districts, this was the only community type in which consistently the average years of service in the district was less for the Superintendent than the Assistant Superintendents.

Figure L 4 depicts the average unit years of service of rural Principals by school year.

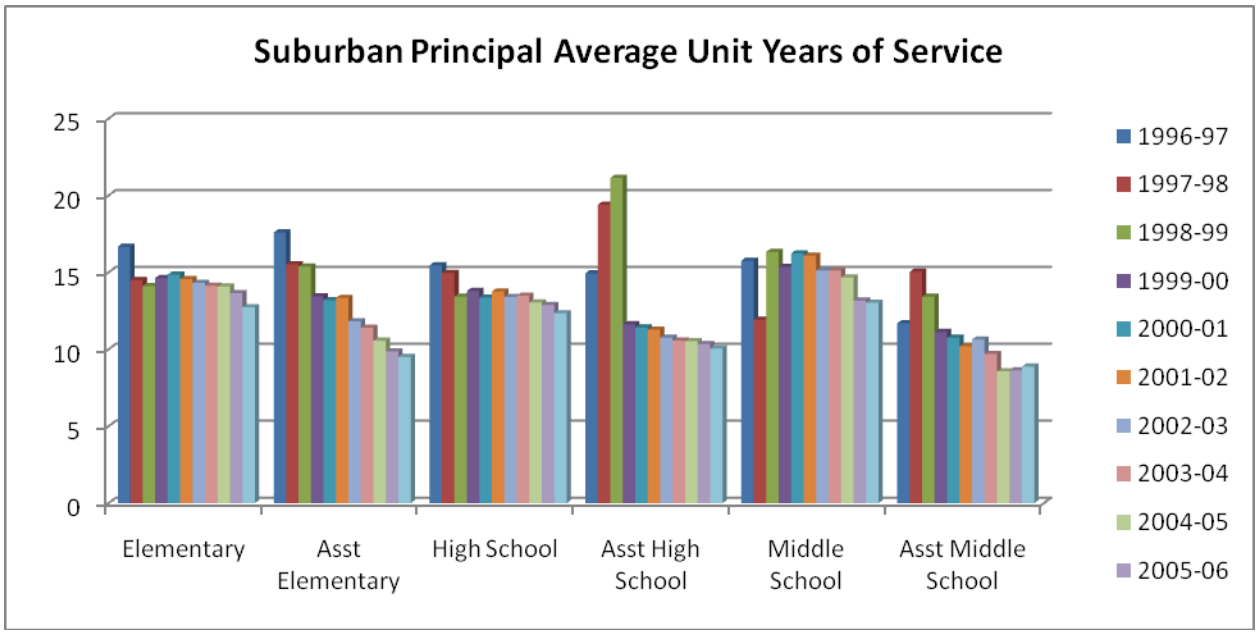
Figure L 4: Rural Principals Average Unit Years of Service by Year



The average unit years of service changed in 1997-98 and 1998-99 and in some cases resulted in much lower averages for the Assistant Elementary, High School and Assistant High School Principal positions. This could have been reflective of a number of Principal positions opening as the result of early retirement elections resulting in qualified candidates moving to new districts to fill the positions. Rural Elementary Principal averages remained the most stable over the time period.

Figure L 5 depicts the average unit years of service of suburban Principals by school year.

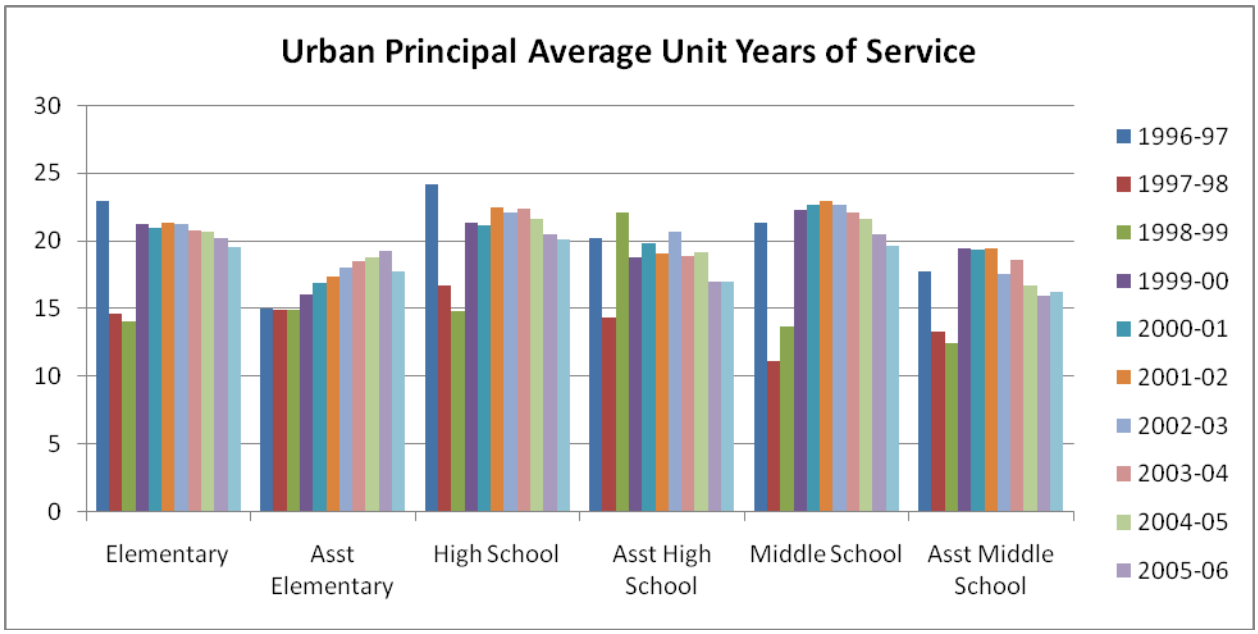
Figure L 5: Suburban Principals Average Unit Years of Service by Year



Suburban Principal positions decreased in the average years of service over the time period. There were some disruptions in the trends early in the time period. After which, there were incremental decreases. This suggests the decreasing average unit years of service per the suburban Principal positions were the result of aggregate changes over time in the educational environment and in the applicant pool.

Figure L 6 depicts the average unit years of service of urban Principals by school year.

Figure L 6: Urban Principals Average Unit Years of Service by Year

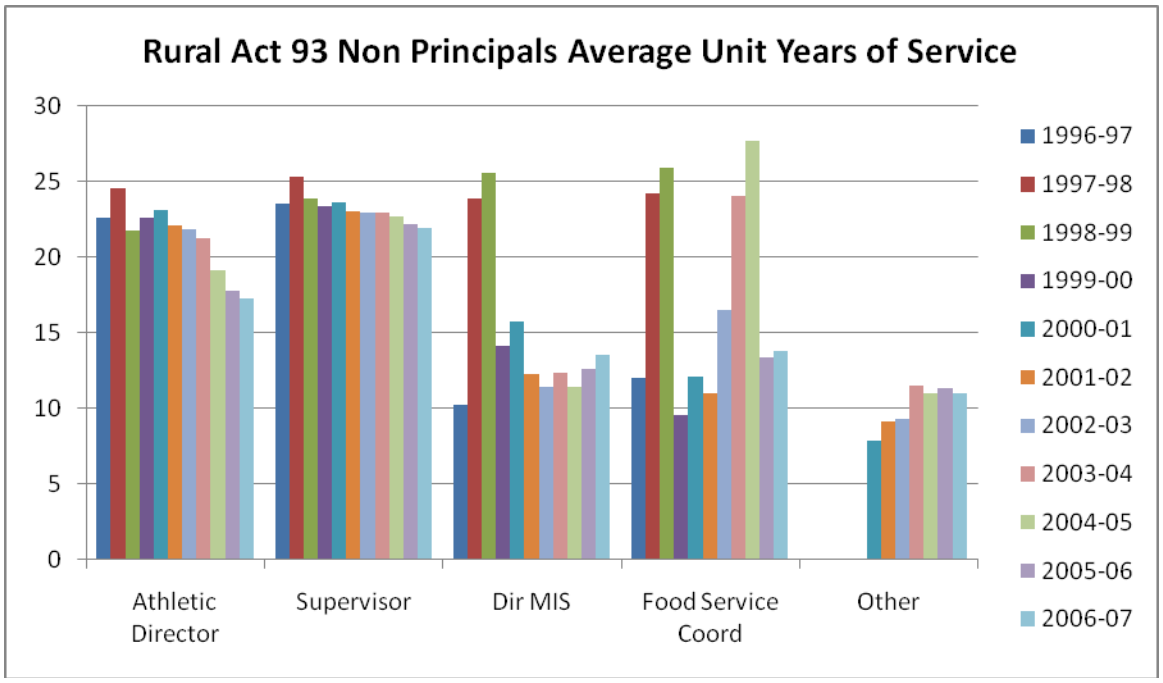


The changes in the first few years were explained by Act 41. Most average unit years of service for urban Principals increased incrementally then began a decline post 2000-01. These positions included the High School Principal, Assistant High School Principal, Middle School Principal, Assistant Middle School Principal and the Elementary School Principal. In contrast to this trend and of particular interest in the urban Principal average unit years of service data are the increasing trends for the Assistant Elementary Principal position. This is unexplained.

Collectively, the urban Principal average unit years of service data indicated small changes from one school year to the next suggesting greater stability in these positions than in the urban contracted positions.

Figure L 7 depicts rural Act 93, Non Principals Average Unit Years of Service by Year.

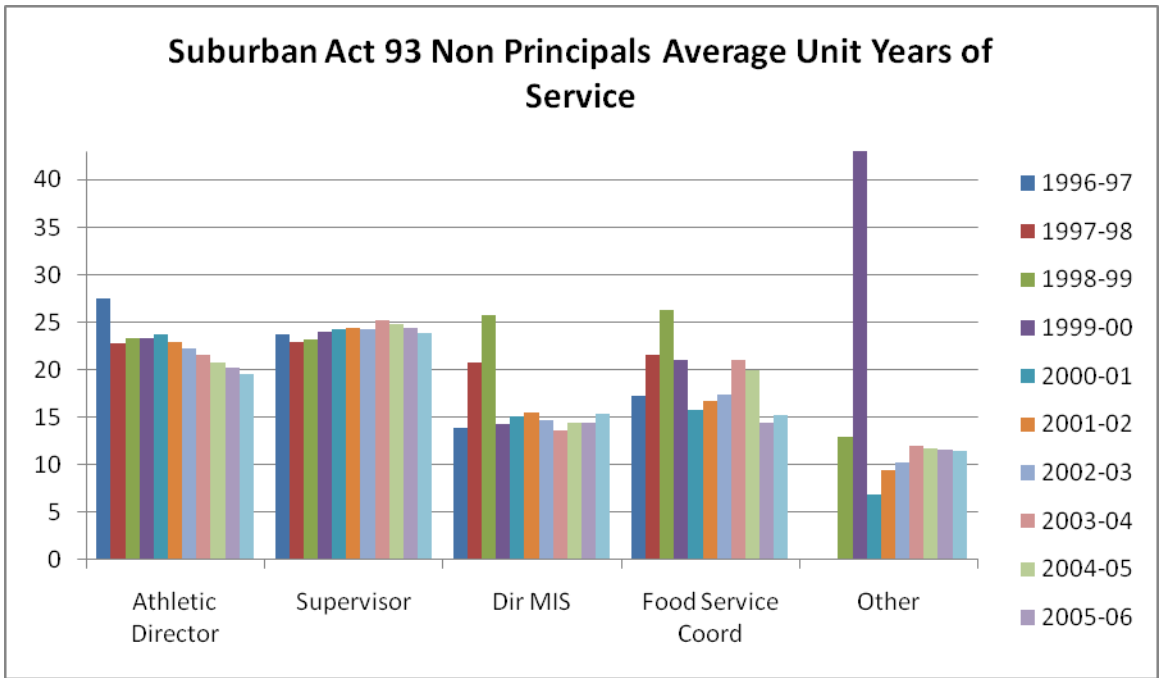
Figure L 7: Rural Act 93, Non Principals Average Unit Years of Service by Year



The average unit years of service per the rural Act 93, Non Principals are reflective of the trends displayed in the average total years of service. Some disruptions were aligned with both Act 41 and NCLB.

Figure L 8 depicts suburban Act 93, Non Principals average unit years of service by year.

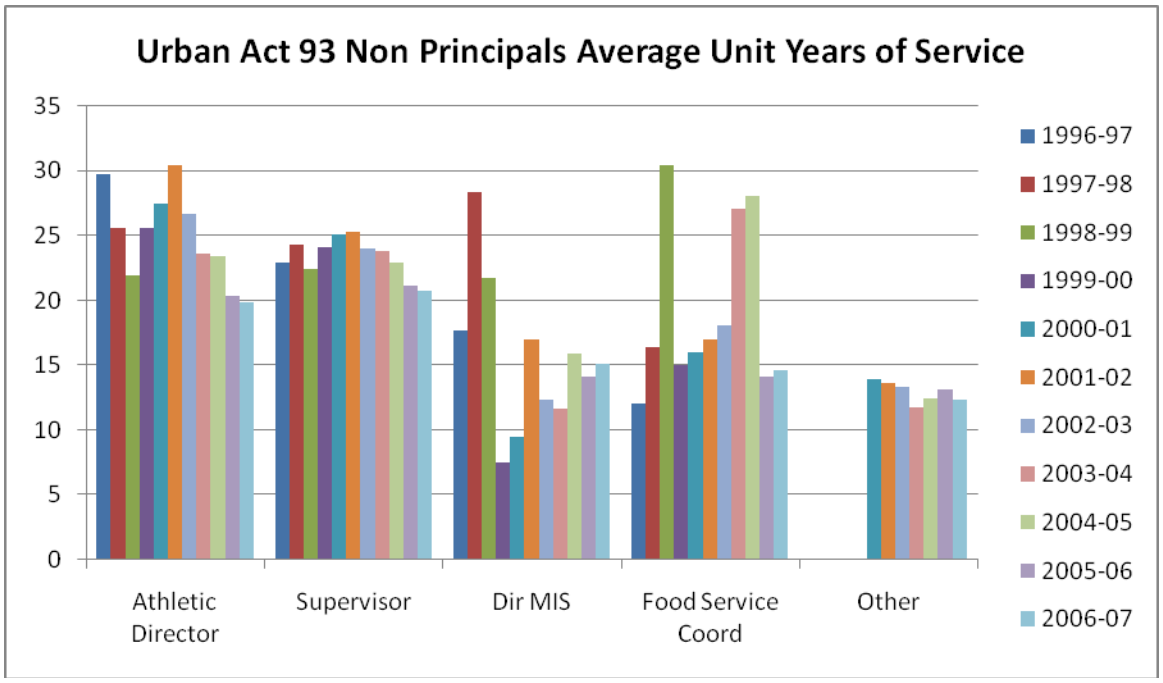
Figure L 8: Suburban Act 93, Non Principals Average Unit Years of Service by Year



The average unit years of service per the suburban Act 93, Non Principals were reflective of the trends displayed in the average total years of service. Suburban districts had smaller, incremental changes reflective of higher levels of stability in these positions than in rural districts.

Figure L 9 depicts urban Act 93, Non Principals Average Unit Years of Service by year.

Figure L 9: Urban Act 93, Non Principals Average Unit Years of Service by Year



The average unit years of service per the suburban Act 93, Non Principals were reflective of the trends displayed in the average total years of service. Again, some disruptions aligned with Act 41 and NCLB.

APPENDIX M

DISTRICTS BY COMMUNITY TYPE AND AVERAGE DAILY MEMBERSHIP

Appendix M details the district size as indicated by the 2004-05 Average Daily Membership and by community type. Table M. 1 details rural districts by Average Daily Membership. Table M. 2 details suburban districts by Average Daily Membership. Table M. 3 details urban districts by Average Daily Membership.

Table M.1: Rural Districts by Average Daily Membership

District	ADM		District	ADM
AUSTIN AREA S D	242		UNION AREA S D	889
HARMONY AREA S D	379		ROCKWOOD AREA S D	900
SALISBURY-ELK LICK S D	387		CLARION AREA S D	922
TURKEYFOOT VALLEY AREA S D	391		NORTHEAST BRADFORD S D	923
GALETON AREA S D	435		OLD FORGE S D	925
SHANKSVILLE-STONYCREEK S D	490		CONEMAUGH VALLEY S D	926
FORBES ROAD S D	492		FOREST CITY REGIONAL S D	927
OSWAYO VALLEY S D	574		TRI VALLEY S D	930
WILLIAMSBURG COMMUNITY S D	588		CAMERON COUNTY S D	932
FANNETT METAL S D	598		SOUTHERN FULTON S D	938
SHADE CENTRAL CITY S D	631		WESTERN BEAVER COUNTY S D	938
COMMODORE PERRY S D	652		CLAYSBURG-KIMMEL S D	942
NORTH CLARION COUNTY S D	667		MILLERSBURG AREA S D	944
JAMESTOWN AREA S D	702		JEFFERSON MORGAN S D	945
NORTHERN POTTER S D	711		HOMER-CENTER S D	957
BLACKLICK VALLEY S D	713		BERLIN BROTHERSVALLEY S D	962
FOREST AREA S D	720		WEST GREENE S D	970
SOUTHEASTERN GREENE S D	723		SUSQUEHANNA COMMUNITY S D	973
AVELLA AREA S D	759		COUDERSPORT AREA S D	977
JOHNSONBURG AREA S D	765		ALLEGHENY-CLARION VALLEY S	984
UNION S D	801		MONTGOMERY AREA S D	992
OTTO ELDRED S D	804		SMETHPORT AREA S D	1,010
WEATHERLY AREA S D	805		PORTAGE AREA S D	1,022
SULLIVAN COUNTY S D	815		MEYERSDALE S D	1,037
BENTON AREA S D	817		PENNS MANOR AREA S D	1,040
MILLVILLE AREA S D	821		CENTRAL FULTON S D	1,042
ST CLAIR AREA S D	861		VALLEY GROVE S D	1,046
JUNIATA VALLEY S D	865		RIDGWAY AREA S D	1,056
GLENDALE S D	879		CALIFORNIA AREA S D	1,070

District	ADM		District	ADM
MUNCY S D	1,071		SHENANGO AREA S D	1,400
SHENANDOAH VALLEY S D	1,084		SCHUYLKILL HAVEN AREA S D	1,431
CARMICHAELS AREA S D	1,098		BETHLEHEM-CENTER S D	1,433
PORT ALLEGANY S D	1,118		CRANBERRY AREA S D	1,441
CLARION LIMESTONE AREA S D	1,119		LAUREL S D	1,442
CONEMAUGH TOWNSHIP AREA S D	1,128		MOUNTAIN VIEW S D	1,457
NORTHERN BEDFORD COUNTY S D	1,130		WYALUSING AREA S D	1,465
MOSHANNON VALLEY S D	1,137		NORTHWEST AREA S D	1,470
MAHANOY AREA S D	1,153		ELK LAKE S D	1,476
CANTON AREA S D	1,164		SOUTHERN COLUMBIA AREA S D	1,481
KEYSTONE S D	1,191		REYNOLDS S D	1,521
MINERSVILLE AREA S D	1,196		COLUMBIA BOROUGH S D	1,522
WILLIAMS VALLEY S D	1,196		EVERETT AREA S D	1,528
CHARTIERS-HOUSTON S D	1,211		CAMBRIA HEIGHTS S D	1,541
FRAZIER S D	1,213		MOUNT UNION AREA S D	1,550
PURCHASE LINE S D	1,219		BURGETTSTOWN AREA S D	1,577
SAYRE AREA S D	1,219		MARION CENTER AREA S D	1,611
BLUE RIDGE S D	1,233		PANTHER VALLEY S D	1,612
BROCKWAY AREA S D	1,233		WILMINGTON AREA S D	1,627
WEST MIDDLESEX AREA S D	1,238		WELLSBORO AREA S D	1,637
BENTWORTH S D	1,241		APOLLO-RIDGE S D	1,648
CURWENSVILLE AREA S D	1,242		PENNS VALLEY AREA S D	1,663
NORTHERN CAMBRIA S D	1,251		WATTSBURG AREA S D	1,668
TUSSEY MOUNTAIN S D	1,253		GREENVILLE AREA S D	1,685
HALIFAX AREA S D	1,269		ANNVILLE CLEONA S D	1,715
NEWPORT S D	1,269		LAKELAND S D	1,719
UNITED S D	1,289		PINE GROVE AREA S D	1,737
FAIRFIELD AREA S D	1,295		EAST LYCOMING S D	1,770
LINE MOUNTAIN S D	1,298		MOUNT CARMEL AREA S D	1,773
UPPER DAUPHIN AREA S D	1,321		MONITEAU S D	1,777
FORT CHERRY S D	1,324		TULPEHOCKEN AREA S D	1,785
LAKEVIEW S D	1,343		TOWANDA AREA S D	1,792
KANE AREA S D	1,344		WARRIOR RUN S D	1,795
NESHANNOCK TOWNSHIP S D	1,344		CHESTNUT RIDGE S D	1,796
BELLWOOD-ANTIS S D	1,350		PENN CAMBRIA S D	1,815
WEST BRANCH AREA S D	1,355		TROY AREA S D	1,825
LACKAWANNA TRAIL S D	1,364		LEWISBURG AREA S D	1,828
SOUTHERN HUNTINGDON CO S D	1,365		UPPER ADAMS S D	1,850
LOYALSOCK TOWNSHIP S D	1,375		KARNS CITY AREA S D	1,853
NORTH STAR S D	1,376		BLOOMSBURG AREA S D	1,868
SOUTH SIDE AREA S D	1,380		NORTHWESTERN S D	1,876
REDBANK VALLEY S D	1,383		TYRONE AREA S D	1,907
UNION CITY AREA S D	1,388		BROOKVILLE AREA S D	1,937

District	ADM		District	ADM
PEQUEA VALLEY S D	1,960		ATHENS AREA S D	2,440
MONTROSE AREA S D	1,962		EASTERN LEBANON COUNTY S D	2,462
SPRING COVE S D	1,966		CORRY AREA S D	2,496
NORTH SCHUYLKILL S D	1,971		NORTHERN TIOGA S D	2,496
SCHUYLKILL VALLEY S D	1,991		NORTHERN LEBANON S D	2,505
PEN ARGYL AREA S D	2,008		MIFFLINBURG AREA S D	2,506
BRANDYWINE HEIGHTS AREA S D	2,010		MOUNT PLEASANT AREA S D	2,522
FREEPORT AREA S D	2,022		ST MARYS AREA S D	2,542
MOHAWK AREA S D	2,050		SLIPPERY ROCK AREA S D	2,544
GIRARD S D	2,058		WESTERN WAYNE S D	2,583
BALD EAGLE AREA S D	2,059		YOUGH S D	2,589
BROWNSVILLE AREA S D	2,059		LEHIGHTON AREA S D	2,619
JIM THORPE AREA S D	2,069		VALLEY VIEW S D	2,622
DEER LAKES S D	2,085		SOMERSET AREA S D	2,700
OLEY VALLEY S D	2,085		DANVILLE AREA S D	2,711
MONTOURSVILLE AREA S D	2,094		DERRY AREA S D	2,720
NORTHERN LEHIGH S D	2,110		HAMBURG AREA S D	2,726
LIGONIER VALLEY S D	2,116		OCTORARA AREA S D	2,735
PHILIPSBURG OSCEOLA AREA S D	2,126		TUSCARORA S D	2,780
PALMERTON AREA S D	2,127		GREENCASTLE-ANTRIM S D	2,787
BLAIRSVILLE-SALTSBURG S D	2,156		WEST PERRY S D	2,797
BERMUDIAN SPRINGS S D	2,165		CONNEAUT S D	2,836
SOUTH MIDDLETON S D	2,195		PUNXSUTAWNEY AREA S D	2,836
TAMAQUA AREA S D	2,213		CONRAD WEISER AREA S D	2,843
LAKE-LEHMAN S D	2,254		BLACKHAWK S D	2,850
SOUTHERN TIOGA S D	2,266		EASTERN YORK S D	2,853
ELLWOOD CITY AREA S D	2,273		SELINSGROVE AREA S D	2,853
CENTRAL COLUMBIA S D	2,277		CLEARFIELD AREA S D	2,918
SUSQUENITA S D	2,279		BRADFORD AREA S D	2,923
FORT LEBOEUF S D	2,307		SOUTH BUTLER COUNTY S D	2,928
FOREST HILLS S D	2,323		BLUE MOUNTAIN S D	2,930
CENTRAL GREENE S D	2,328		BELLE VERNON AREA S D	2,958
MCGUFFEY S D	2,329		JERSEY SHORE AREA S D	2,970
NORTHWESTERN LEHIGH S D	2,330		BELLEFONTE AREA S D	3,016
SOUTHMORELAND S D	2,330		CRESTWOOD S D	3,034
FRANKLIN AREA S D	2,356		TUNKHANNOCK AREA S D	3,076
HUNTINGDON AREA S D	2,358		MANHEIM CENTRAL S D	3,112
BEDFORD AREA S D	2,361		BIG SPRING S D	3,117
LITTLESTOWN AREA S D	2,365		JUNIATA COUNTY S D	3,128
MILTON AREA S D	2,376		NORTHERN YORK COUNTY S D	3,255
GENERAL MCLANE S D	2,402		NORTH POCONO S D	3,258
SAUCON VALLEY S D	2,412		LAMPETER-STRASBURG S D	3,266
MIDD-WEST S D	2,420		TWIN VALLEY S D	3,296

District	ADM		District	ADM
WAYNE HIGHLANDS S D	3,352		SPRING GROVE AREA S D	4,064
NORTHEASTERN S D	3,387		WAYNESBORO AREA S D	4,146
SOUTHERN YORK COUNTY S D	3,400		CRAWFORD CENTRAL S D	4,150
GETTYSBURG AREA S D	3,427		DUBOIS AREA S D	4,552
SOUTH EASTERN S D	3,431		CORNWALL-LEBANON S D	4,877
EASTERN LANCASTER COUNTY S D	3,498		KEYSTONE CENTRAL S D	4,940
BERWICK AREA S D	3,509		PENN MANOR S D	5,487
UNIONTOWN AREA S D	3,588		AVON GROVE S D	5,506
COCALICO S D	3,656		CONNELLSVILLE AREA S D	5,616
LAUREL HIGHLANDS S D	3,677		NORTHAMPTON AREA S D	5,798
OXFORD AREA S D	3,752		STROUDSBURG AREA S D	5,828
CONEWAGO VALLEY S D	3,767		WARREN COUNTY S D	5,932
FRANKLIN REGIONAL S D	3,801		MIFFLIN COUNTY S D	5,984
ELIZABETHTOWN AREA S D	3,962		RED LION AREA S D	6,019
WALLENPAUPACK AREA S D	3,964		ARMSTRONG S D	6,674
PENNCREST S D	3,969		PLEASANT VALLEY S D	7,122
SOLANCO S D	4,037		PENNRIDGE S D	7,304
LOWER DAUPHIN S D	4,050		PARKLAND S D	8,927
ALBERT GALLATIN AREA S D	4,063		POCONO MOUNTAIN S D	12,066

Table M.2: Suburban Districts by Average Daily Membership

District	ADM		District	ADM
MIDLAND BOROUGH S D	497		BRENTWOOD BOROUGH S D	1,376
JENKINTOWN S D	595		JEANNETTE CITY S D	1,386
CORNELL S D	755		BRISTOL BOROUGH S D	1,387
FERNDALE AREA S D	798		STEELTON-HIGHSPIRE S D	1,418
MONACA BOROUGH S D	809		WINDBER AREA S D	1,428
GREENWOOD S D	876		SOUTH WILLIAMSPORT AREA S D	1,436
LEECHBURG AREA S D	908		NEW HOPE-SOLEBURY S D	1,438
CLAIRTON CITY S D	984		ALIQUIPPA S D	1,442
MORRISVILLE BOROUGH S D	986		RIVERSIDE S D	1,515
FARRELL AREA S D	1,064		STO-ROX S D	1,516
MONESSEN CITY S D	1,091		MERCER AREA S D	1,523
ANTIETAM S D	1,110		NORTHGATE S D	1,525
CAMP HILL S D	1,118		CARLYNTON S D	1,582
ROCHESTER AREA S D	1,120		RICHLAND S D	1,602
ALLEGHENY VALLEY S D	1,245		MID VALLEY S D	1,607
RIVERVIEW S D	1,252		CARBONDALE AREA S D	1,611
IROQUOIS S D	1,259		FAIRVIEW S D	1,630
AVONWORTH S D	1,339		CHARLEROI AREA S D	1,679
SHARPSVILLE AREA S D	1,364		CATASAUQUA AREA S D	1,714

District	ADM		District	ADM
DUNMORE S D	1,723		HOPEWELL AREA S D	2,879
WESTMONT HILLTOP S D	1,742		ELIZABETH FORWARD S D	2,899
HANOVER PUBLIC S D	1,766		MARS AREA S D	2,906
FREEDOM AREA S D	1,778		WEST JEFFERSON HILLS S D	2,937
WILKINSBURG S D	1,788		HIGHLANDS S D	2,944
KUTZTOWN AREA S D	1,791		SOUTHERN LEHIGH S D	3,074
SOUTH ALLEGHENY S D	1,791		AMBRIDGE AREA S D	3,117
SALISBURY TOWNSHIP S D	1,870		PALMYRA AREA S D	3,118
LOWER MORELAND TOWNSHIP S D	1,879		MUHLENBERG S D	3,136
WYOMISSING AREA S D	1,884		INDIANA AREA S D	3,145
RIVERSIDE BEAVER COUNTY S D	1,902		UPPER MORELAND TOWNSHIP S D	3,155
BIG BEAVER FALLS AREA S D	1,908		HAMPTON TOWNSHIP S D	3,189
CENTRAL CAMBRIA S D	1,922		SHIKELLAMY S D	3,230
QUAKER VALLEY S D	1,945		SUSQUEHANNA TOWNSHIP S D	3,250
NEW BRIGHTON AREA S D	1,947		MONTOUR S D	3,283
SOUTH FAYETTE TOWNSHIP S D	1,948		WEST ALLEGHENY S D	3,286
NORTH EAST S D	1,958		PITTSTON AREA S D	3,289
EAST ALLEGHENY S D	1,985		WEST YORK AREA S D	3,303
CENTER AREA S D	2,009		WEST MIFFLIN AREA S D	3,327
HANOVER AREA S D	2,089		POTTSGROVE S D	3,332
SPRINGFIELD TOWNSHIP S D	2,108		POTTSTOWN S D	3,333
HARBOR CREEK S D	2,149		SHIPPENSBURG AREA S D	3,347
PALISADES S D	2,149		UPPER PERKIOMEN S D	3,382
BEAVER AREA S D	2,154		PENN-DELCO S D	3,395
BURRELL S D	2,187		SPRINGFIELD S D	3,421
GREATER NANTICOKE AREA S D	2,192		RADNOR TOWNSHIP S D	3,459
HERMITAGE S D	2,231		UPPER MERION AREA S D	3,474
SOUTH PARK S D	2,238		GREENSBURG SALEM S D	3,478
WILSON AREA S D	2,259		CHARTIERS VALLEY S D	3,504
STEEL VALLEY S D	2,289		MARPLE NEWTOWN S D	3,509
GROVE CITY AREA S D	2,351		DERRY TOWNSHIP S D	3,532
TITUSVILLE AREA S D	2,412		WALLINGFORD SWARTHMORE S D	3,567
KEYSTONE OAKS S D	2,450		MECHANICSBURG AREA S D	3,573
OIL CITY AREA S D	2,517		DANIEL BOONE AREA S D	3,599
NEW KENSINGTON-ARNOLD S D	2,562		ABINGTON HEIGHTS S D	3,664
SHAMOKIN AREA S D	2,566		DOVER AREA S D	3,669
MIDDLETOWN AREA S D	2,618		RINGGOLD S D	3,675
FLEETWOOD AREA S D	2,662		BANGOR AREA S D	3,691
DALLAS S D	2,678		HOLLIDAYSBURG AREA S D	3,761
WYOMING AREA S D	2,690		CHICHESTER S D	3,765
DONEGAL S D	2,753		TRINITY AREA S D	3,797
YORK SUBURBAN S D	2,809		PHOENIXVILLE AREA S D	3,806
EAST PENNSBORO AREA S D	2,865		MOON AREA S D	3,854

District	ADM		District	ADM
UNIONVILLE CHADDS FORD S D	3,982		QUAKERTOWN COMMUNITY S D	5,495
INTERBORO S D	3,991		WYOMING VALLEY WEST S D	5,496
GREAT VALLEY S D	4,005		MANHEIM TOWNSHIP S D	5,500
ROSE TREE MEDIA S D	4,005		SHALER AREA S D	5,612
CONESTOGA VALLEY S D	4,013		DELAWARE VALLEY S D	5,615
PETERS TOWNSHIP S D	4,041		HAVERFORD TOWNSHIP S D	5,651
PINE-RICHLAND S D	4,096		PENN HILLS S D	5,651
UPPER ST CLAIR TOWNSHIP S D	4,121		DALLASTOWN AREA S D	5,663
EPHRATA AREA S D	4,168		WOODLAND HILLS S D	5,750
SOUTH WESTERN S D	4,196		TREDYFFRIN EASTTOWN S D	5,846
SOUTHEAST DELCO S D	4,199		RIDLEY S D	5,868
WHITEHALL-COPLAY S D	4,200		CENTENNIAL S D	6,382
EXETER TOWNSHIP S D	4,202		HEMPFIELD AREA S D	6,648
KENNETT CONSOLIDATED S D	4,216		LOWER MERION S D	6,766
GOVERNOR MIFFLIN S D	4,231		SOUDERTON AREA S D	6,823
GARNET VALLEY S D	4,232		BENSALEM TOWNSHIP S D	6,852
GATEWAY S D	4,372		SPRING-FORD AREA S D	6,989
PLUM BOROUGH S D	4,392		BOYERTOWN AREA S D	7,109
GREATER LATROBE S D	4,409		MILLCREEK TOWNSHIP S D	7,255
OWEN J ROBERTS S D	4,455		STATE COLLEGE AREA S D	7,405
UPPER DUBLIN S D	4,475		HEMPFIELD S D	7,428
BALDWIN-WHITEHALL S D	4,477		EAST PENN S D	7,454
CANON-MCMILLAN S D	4,488		ABINGTON S D	7,465
KISKI AREA S D	4,553		BRISTOL TOWNSHIP S D	7,475
NAZARETH AREA S D	4,601		CUMBERLAND VALLEY S D	7,727
FOX CHAPEL AREA S D	4,616		SENECA VALLEY S D	7,767
WISSAHICKON S D	4,647		EAST STROUDSBURG AREA S D	8,057
WARWICK S D	4,688		NORTH ALLEGHENY S D	8,198
COLONIAL S D	4,691		WEST SHORE S D	8,294
CHELTENHAM TOWNSHIP S D	4,714		COATESVILLE AREA S D	8,395
PENN TRAFFORD S D	4,744		CHAMBERSBURG AREA S D	8,435
CARLISLE AREA S D	4,809		HAZLETON AREA S D	9,525
NORTH HILLS S D	4,837		NESHAMINY S D	9,810
CENTRAL YORK S D	5,079		DOWNINGTOWN AREA S D	11,409
BETHEL PARK S D	5,158		CENTRAL DAUPHIN S D	11,687
PERKIOMEN VALLEY S D	5,189		PENNSBURY S D	11,842
NORWIN S D	5,299		WEST CHESTER AREA S D	12,201
METHACTON S D	5,415		UPPER DARBY S D	12,424
HATBORO-HORSHAM S D	5,465		COUNCIL ROCK S D	12,697
MT LEBANON S D	5,477		NORTH PENN S D	13,340
WILSON S D	5,479		CENTRAL BUCKS S D	19,650

Table M.3: Urban Districts by Average Daily Membership

District	ADM		District	ADM
DUQUESNE CITY S D	943		YORK CITY S D	7,493
WASHINGTON S D	2,038		HARRISBURG S D	8,412
SHARON CITY S D	2,404		BUTLER AREA S D	8,417
POTTSVILLE AREA S D	2,863		ALTOONA AREA S D	8,421
GREATER JOHNSTOWN S D	3,167		EASTON AREA S D	8,793
NEW CASTLE AREA S D	4,060		SCRANTON S D	9,305
LEBANON S D	4,417		THE S D OF LANCASTER	11,432
MCKEESPORT AREA S D	4,655		ERIE CITY S D	13,606
WILLIAM PENN S D	5,777		BETHLEHEM AREA S D	15,526
WILLIAMSPORT AREA S D	5,987		READING S D	17,366
WILKES-BARRE AREA S D	7,272		ALLENTOWN S D	17,635
NORRISTOWN AREA S D	7,282		PITTSBURGH S D	33,661
CHESTER UPLAND S D	7,283		PHILADELPHIA S D	211,059