

THE RELATIONSHIP BETWEEN REPORTED INCIDENTS OF STUDENT DISCIPLINE
AND STUDENT ACHIEVEMENT ACROSS FOUR EASTERN STATES

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Abstract

The No Child Left Behind (NCLB) Act of 2001 was established to improve student achievement among all public school students. To accomplish this goal, this federal mandate requires each state to establish the seven set priorities under NCLB. In addition, each state is required to establish and report their accomplishments and failures annually. One priority listed under NCLB required that all public schools establish a safe learning environment for students, school staff, and parents (U.S. Government, 2001). Some researchers have identified a high frequency of student discipline incidents, resulting in high suspension and expulsion rates, as a negative construct that hinders teachers from establishing a nurturing learning environment. As a result, students are unable to develop the skills they need to successfully pass their state-wide assessment test (Howard et. al., 1987; Hernandez & Seem, 2004). Therefore, this study was designed to determine if there is a relationship between incidents of student discipline and student achievement across public school districts in Maryland, New Jersey, Pennsylvania, and Virginia. For the purpose of this study, a hierarchical clustering analysis was used to create five clusters of school divisions (N=1,108) within the four states according to similarities. To accomplish this task, a data matrix was created, which contains data of the total number of incidents for disorderly conduct, weapon violations, substance abuse, and violence; the number of students receiving free and reduced lunch; and the number of students by race/ethnicity for each school district within the four states. The findings indicate that there is a relationship between incidents of student discipline and student achievement among the four states.

Incidents of Student Discipline and Student Achievement

This dissertation is dedicated to my husband, Sam, and my daughter, Adrienne. I love you both more than you will ever know.

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CHAPTER I

INTRODUCTION

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

A Nation at Risk, 1983

In 2002, President George Bush signed into law the No Child Left Behind Act of 2001 (NCLB) that addresses the quality of public education in the United States. The No Child Left Behind Act establishes seven priorities that address public school reform and improvement in both elementary and secondary schools across the U.S. These priorities require states to do the following: (1) reward individual schools and school districts that meet the established standards and sanction those schools and school districts that fail to meet the standards; (2) close the achievement gap through the establishment of high standards and accountability, annual assessments, and consequences for schools that fail to make Adequate Yearly Progress (AYP); (3) hire highly qualified teachers; (4) improve literacy by establishing a comprehensive reading program; (5) allow parents to make informed decisions with regard to educational options for their children; (6) establish a safe school environment for students, school staff, and parents; and (7) grant school districts flexibility in spending the increased federal funds (U.S. Government, 2001).

The No Child Left Behind Act specifically outlines requirements for states to follow as they move toward academic excellence in achieving equality through high academic standards. To accomplish equal opportunity for all students through high academic standards, states are empowered to implement rigorous accountability programs that measure individual school and school district progress in improving student achievement. As a result states are required to (1)

establish measurable academic standards; (2) establish annual assessments for every student in pre-determined grades; (3) report to the public assessment results by individual school and school district annually; (4) report the AYP of disadvantaged students, minority students, and students with English as a second language; (5) provide additional funding to school districts for technical assistance to improve academic performance of low-performing students; (6) increase school districts' financial flexibility by allowing federal dollars to be used to improve school quality; (7) reward individual schools and school districts that demonstrate success by narrowing the achievement gap; (8) require school districts to develop corrective action plans for low-performing schools; (9) establish penalties and/or sanctions for individual schools and school districts that fail to show improvement in closing the achievement gap; and (10) protect both home and private schools within school districts (U.S. Government, 2001).

Consequently, the NCLB Act has placed public schools and school districts on notice by requiring them to show academic improvement in all students regardless of disability, race, and English proficiency. As a result, schools and school districts now utilize researched-based programs that enable teachers to identify those constructs that improve student achievement (U.S. Government, 2001).

School Climate

Borkan, Cappa, Figueiredo, and Loadman (2003) identify school climate as a construct that impacts student achievement, school effectiveness, and students' school completion rates. Howard, Howell, and Brainard (1987) describe a successful school environment as one that is pleasant, welcoming, and safe; provides emotional support to teachers, students, and parents; provides a clean physical structure; has classrooms free of disruption; and possesses administrative staff members that support and encourage their teachers, as well as teachers who

support and encourage their students. When these basic needs are met, students are able to develop healthy relationships with their peers and teachers. In addition, teachers are able to create a community of learners in which high-quality instruction is provided that promotes high student achievement.

Furthermore Howard et al. (1987) identify eight factors that contribute to a healthy school climate in determining school quality. These factors include: (1) academic and social growth, which enables students to develop the skills needed to be productive citizens; (2) respect, which fostered mutually among students, teachers, and school administrators makes the school environment a place where all individuals are able to develop positive self-esteem; (3) trust and confidence, which distinguishes students, teachers, and administrators as being dependable; (4) high morale, which enables teacher and students to feel good about the school and allows students to practice self-discipline while taking responsibility for their behavior; (5) cohesiveness, also referred to as school spirit, which allows teachers and students to feel a sense of community; (6) collaboration, which affords faculty members opportunities to contribute ideas and share in the decision making process; (7) school growth, which encourages the school to constantly develop and change; and (8) caring, which assures there is a feeling that people within the school environment show concern toward each other.

From these eight factors Howard et al. (1987) identify 24 indicators of a negative school climate, which are symptoms of problems within the school. Some of these indicators include such problems as (1) frequent absenteeism among students and faculty; (2) a weak or non-existent student government; (3) students and/or faculty cliques; (4) negative faculty discussions in the faculty lounge; (5) crowded hallways during student transition; (6) student unrest and feelings of alienation due to large student population; (7) school vandalism, such as

students breaking into each other's lockers; (8) low school spirit; (9) a poor perception of the school on the part of the community and staff members; (10) teachers outward expressions of frustration toward students; (11) students' beliefs that school serves little purpose; (12) high student dropout rate; (13) students' passivity toward education resulting in a high number of underachievers; (14) low staff morale leading to faculty apathy; (15) lack of availability of supplies and materials when needed; (16) frequent student discipline problems; and (17) high incidences of student suspensions and expulsions.

Borkan et al. (2003) further identify school climate as a construct that impacts student achievement, school effectiveness, and students' school completion rate. For example when Howard's eight factors of a healthy school climate are in place, the school's environment will enable teachers to develop positive relationships with their students, will allow students to develop positive relationships with their peers, and will permit teachers to provide high-quality instruction that produces high student achievement (Borkan et al., 2003; Howard et al., 1987). Similarly, a high frequency of student discipline problems, suspensions, and expulsions have been identified as negative constructs that create a negative school climate (Howard et al., 1987). Therefore, violence in schools contributes to a high frequency of discipline problems that causes student suspensions and/or expulsions and has been cited as a factor of a negative school climate (Hernandez & Seem, 2004). Consequently, the existence of these negative factors can impact the school's ability to achieve academic excellence (Howard et al., 1987).

As a result of the NCLB Act of 2001, individual schools, school districts, and state legislative bodies have made academic excellence a priority (U.S. Government, 2001). Consequently, factors such as a high frequency of student discipline problems in high suspension and expulsion rates may negatively impact the school's and school district's capacity to provide

students with high-quality instruction (Howard et al., 1987; Hernandez & Seem, 2004). This high-quality instruction enables students to develop the skills needed to meet the required standards instituted by their state. Therefore, when these standards are not met by individual schools and/or school districts, states are required to sanction them (U.S. Government, 2001). Likewise, this study focuses on the relationship between the frequency of student discipline infractions resulting in suspensions and expulsions and its impact on student achievement across four Eastern states.

Crime and Violence in Public Schools

According to the 2004 *Crime and Safety in America's Public School* report, 71% of all public schools in the United States experience at least one violent incident each year. Some of these violent incidents are depicted in Figure 1. Approximately 1,000,000 incidents involving violent student misconduct occurred in approximately 59,000 public schools during the 1999-2000 school year; it is estimated that 257,000 of these incidents were reported to the police (U.S. Department of Education [USDOE], 2004).

Within the past five years, several high profile shootings have occurred within the walls of our nation's public schools. The research indicated that during the 1999-2000 school year, 29% of public schools in the United States experienced an increase in bullying, which is considered the most serious problem facing public schools today. Figure 2 depicts the fact that disrespect toward teachers and gang activity are equally ranked as the second most reported discipline problem in our nation's public schools (USDOE, 2004).

Factors that Influence Student Achievement

Student discipline, socioeconomic status (SES) of students, gender, and race significantly influence student achievement (Christle, Nelson, & Jolivette, 2004; Bulach, Malone, & Castleman, 1995; Howard et al., 1987). As a result state legislative bodies have dedicated mandates that have, in turn, impacted school board policy and principal leadership. In reaction to those identified factors that influence student achievement, this study will analyze student discipline and determine its relationship on student achievement in New Jersey, Pennsylvania, Maryland, and Virginia.

Figure 1 Percent of schools that reported crime during 1999-2000 school year (USDOE, 2004).

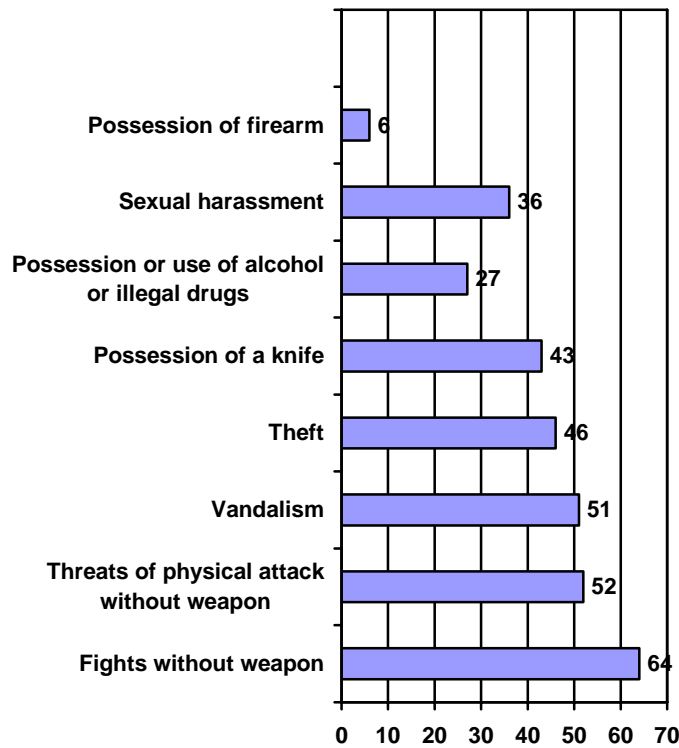


Figure 1 Percent of Schools Reporting Crime in Public Schools

Figure 2 Percent of schools reporting specific discipline problems (USDOE, 2004).

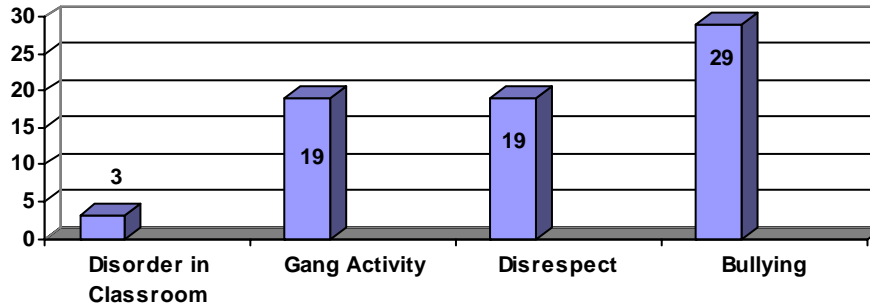


Figure 2 Percent of Schools Reporting Discipline Problems

Legislative Mandates

Two major legislative mandates that have influenced public schools are The National Defense Education Act (NDEA) of 1958 and the Elementary and Secondary Education Act (ESEA) of 1965. Both mandates were the results of federal crises that existed during that time period. As a result, these mandates emerged to directly address the existing federal crises through public education. Subsequent federal funds were made available to local educational agencies, with restrictions, to address the national defense crisis and the educational services provided to children in poverty. Hence, both mandates inspired the federal influences, which presently exist on public education and educational curricula (Twight, 1996).

In 1983, *A Nation at Risk* was published as a warning that the educational system in our nation had lost its purpose for existing. This publication reported that public schools in the United States fail to provide students with the educational foundation needed to compete in the

global world. As a result, recommendations for improving the educational system in our country were provided (United States, 1983).

In 2002, President George Bush signed into law the NCLB Act, which restructured the federal government's role in educating our nation's students. In this legislation, the federal government identified performance goals to ensure improvement in student achievement among all students enrolled in the nation's public school systems. One of these priorities encourages safe schools for the 21st century (U.S. Government, 2001). Hence, the focus of this study is to identify those incidents of school discipline that threaten school safety and to determine its relationship to student achievement.

School Administration

School climate is determined by the attitudes, feelings, and behaviors of the administrators, teachers, students, and parents. In schools where the climate is unhealthy, the administrators, teachers, and parents fail to collaborate when attempting to solve problems that impact student achievement (Hernandez & Seem, 2004). According to Hoy and Hannum (1997), the leadership of a school impacts the relationship between administrators, teachers, students, and parents.

Consistent with Hernandez and Seem (2004), how a school operates is directly influenced by the way the school's administration handles students' disruptive behaviors. They state that parameters for student behaviors and academic expectations must be clearly defined and articulated to the student body. If school leaders fail to establish clear rules and consequences are ambiguous and inconsistent, frequent incidents of student discipline will transpire. Hernandez and Seem (2004) suggest that frequent cases of school violence and disorder give the community the impression that the school's environment is unsafe. As a result, teachers begin to

have difficulty developing healthy relationships with their students; students will have difficulty developing health relationships with their peers (Howard et al., 1987).

Clear expectations for student behavior and student achievement are established by school administration. Hernandez and Seem (2004) recognize that the student codes of conduct developed by the school district for their students address specific student behaviors. At the same time, they believe that a conduct code should be established for all members within the school community. As a result, teachers have the responsibility of modeling appropriate behavior to their students. Furthermore, students need to understand that respectful behavior is expected from the adults in the building as well (Hernandez & Seem, 2004).

In addition, students need to feel connected to their school. Challenging students to achieve high academic excellence helps to foster that bond between school and student and creates a caring learning community that promotes academic growth. The more students are committed to completing their work, the more connected they will feel to the school. Correspondingly, students will be less likely to commit acts of violence in schools with high academic expectations (Hernandez & Seem, 2004).

Socioeconomic Status

Socioeconomic Status (SES) is defined as the social position of a student which is established by both the social and financial domains of the student's parent(s). Usually SES is determined by the parents' educational achievement, employment and occupational status, and income. Studies have concluded that students from low SES families are more likely to exhibit the following educational outcomes: (1) lower levels of literacy, numeracy, and comprehensions; (2) higher retention rates; (3) lower percentages attending college; (d) higher numbers of behavior problems; (4) lower numbers of students studying mathematics and science

subjects; (5) higher levels of negative attitudes toward school; and (6) lower rates of success in the job market (Considine & Zappala, 2002).

Therefore, SES is an important variable in determining a student's academic success (Bulach et al., 1995). Hoy and Hannum (1997) conclude that SES is a strong predictor of student achievement. In addition, Christle et al. (2004) conducted a multi-stage analytical study to identify those school characteristics that are related to student suspension rates in middle schools with high suspension rates. They concluded that ethnicity and SES were found to be positively related to a school's suspension rate. Further discussion of this study may be found in Chapter 2.

Statement of the Problem

School administrators continue to struggle with maintaining an effective and positive learning environment in public schools. Sugai and Horner (2001) indicate that the effectiveness and efficacy of a teacher diminish when students are defiant and disrespectful, when incidents of classroom disruptive behavior occur frequently throughout the school day, and when there are recurring acts of violent student behaviors. In response, school administrators have increased their use of punitive punishment and exclusionary strategies for violent and non-violent student behaviors.

To reiterate, disorder and disruption are symptoms of a negative school climate (Howard et al., 1987). Therefore, if schools and classrooms are disorderly, teachers will be ineffective, which impacts student achievement (Howard et al., 1987; Borkan et al., 2003; Sugai & Horner, 2001). As a result, making public schools safe is a major concern for all stakeholders (National Center for Education Statistics [NCES], 2005). It would not be without validity to state that if schools are safe and welcoming, a positive school climate will exist (Borkan et al., 2003). Likewise, if the school's climate is positive with minimal student behavior problems and low

suspensions and expulsions, effective learning will take place (NCES, 2005; Sugai & Horner, 2001; Thompson & Walter, 1998; Howard et al., 1987; Borkan et al., 2003).

One of the requirements under the NCLB Act is that schools must establish a safe environment for students, staff, and parents (U.S. Government, 2001). A safe school environment is an indicator of a healthy school climate (Howard et al., 1987). Therefore, if the school's climate is healthy, teachers are able to provide high quality instruction. As a result, students, regardless of race/ethnicity, gender, or SES, will obtain the skills they need to meet state standards (Borkan et al., 2003; Howard et al., 1987).

The Purpose of the Study

Several researchers have identified student discipline as having a direct impact on students' academic performance (Howard et al., 1987; Borkan et al., 2003; Sugai & Horner, 2001). In short, if schools have minimal student discipline problems, then students have a better opportunity to learn (NCES, 2005; Sugai & Horner, 2001; Thompson & Walter, 1998; Howard et al., 1987; Borkan et al., 2003). Guided by extensive research, the purpose of this study was to determine if there is a relationship between incidents of student discipline and student achievement across four Eastern states.

Research Questions

The following research questions will guide this study:

1. Is there a relationship between incidents of student discipline and student achievement in reading and mathematics across four Eastern states?

2. Is there a relationship between incidents of student discipline and student achievement by race/ethnicity in reading and mathematics across four Eastern states?
3. Is there a relationship between incidents of student discipline and student achievement by gender in reading and mathematics across four Eastern states?
4. Is there a relationship between incidents of student discipline and student achievement by socioeconomic status in reading and mathematics across four Eastern states?

Significance of the Study

Studies involving school discipline have been conducted at the district, state, and school levels. Prior research has been primarily qualitative utilizing questionnaires, surveys, and/or interviews. In some studies, a mixed methodology has been used to determine how reactive discipline strategies or proactive school-wide discipline programs effectively improve student behavior. Likewise, studies have been conducted to identify discipline gaps by gender and race/ethnicity. However, there has been limited research involving student discipline across multiple state levels, a fact that makes this study significant.

The hierarchical cluster analysis was used in this study to group school districts across New Jersey, Pennsylvania, Maryland, and Virginia based on information obtained from each state's department of education (DOE). The reports obtained from their DOE websites provided the data in the categories of free and reduced lunch, discipline, crime, violent incidents, race/ethnicity, gender, as well as eighth grade reading and mathematics proficiency scores from each state's annual assessment test.

Definition and Terms

1. Student discipline: Antisocial behavior conducted by students that lead to a discipline referral; subsequently, the student receives some form of punishment (Skiba, Peterson, & Williams, 1997).
2. Suspension: Removal of the student from school by the school administrator due to behavior problem. Short term suspension is one to 10 school days. Long term suspension is more than 10 school days (NCES, 2005).
3. Expulsion: Permanent removal of the student from the instructional setting by a school board (NCES, 2005).
4. Socioeconomic status (SES): A person's social class and/or economic status (Colvin, Kameenui, & Sugai, 1993). In this study, SES is determined by the total number of students receiving free or reduced lunch.
5. Student achievement: A product of a student's cognitive ability (Van Acker & Wehby, 2000). Student achievement, in this study, is measured by the four state-wide assessment tests.

Conceptual Framework

Student discipline is defined by specific disciplinary behaviors that students demonstrate. Furthermore, some researchers have acknowledged that specific race and/or ethnic groups, gender, and students in low SES groups are referred repeatedly for disciplinary behaviors more than any other group (Nichols, 1999; Skiba et al., 1997). Therefore, the conceptual framework of this study centered around those listed variables. Figure 3 provides the systematic process this

study used for clustering school districts and analyzing the relationship incidents of student discipline and student achievement.

Conceptual Framework

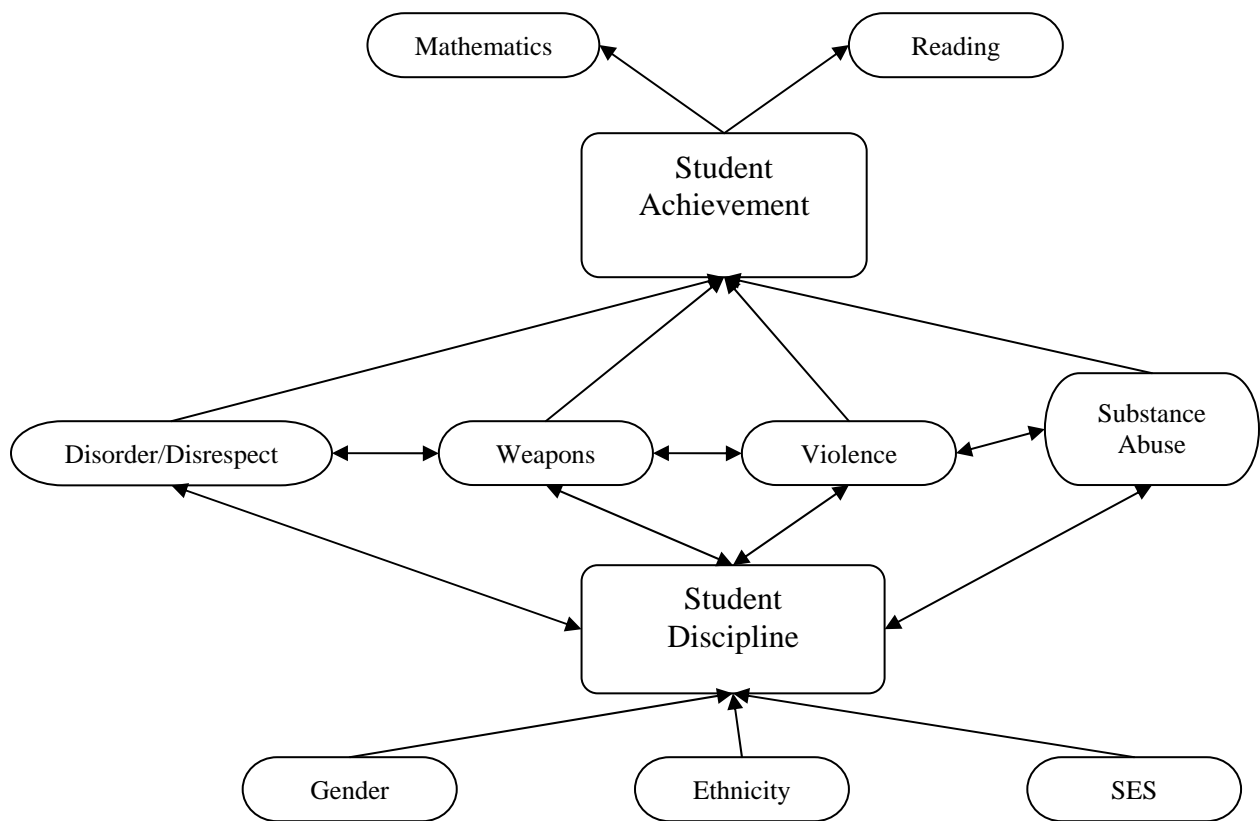


Figure 3 Conceptual Framework

Organization of the Document

This document is organized in five chapters. Chapter 1 includes an introduction, the statement of the problem, the research questions, the significance of the study, a list of terms and definitions, the conceptual frame work, and the organization of the document. Chapter 2 provides a review of literature as it relates to the study. Chapter 3 describes the research methodology used in this study, which includes the population, data collection, and research design. Guided by the research questions, Chapter 4 reports the findings of the data collected. Finally, Chapter 5 summarizes the research finding, lists limitations, and provides several recommendations for further research.

CHAPTER 2

REVIEW OF RELATED LITERATURE

The era of education reform sparked by the publication of *A Nation at Risk* shows few signs of retreating in activity. In fact, recent events suggest that the debates about the future of education reform will continue to be contentious and increasingly influential in determining the scope and nature of elementary and secondary schooling in the United States.

Friedman, 2004

Introduction

Howard et al., (1987) describe a healthy school climate as an atmosphere that allows learning to take place and where both teachers and students enjoy spending a significant amount of time. Subsequent research conducted by Hoy and Hannum (1997) concluded that school climate is the characteristics that influence behavior within the school and distinguish one school from another. Finally, Borkan et al., (2003) identifies that school climate is the positive and negative relationship between the school's administrators, teachers, students, and surrounding community. Therefore, it can be concluded that school climate is shaped through the relationships between the school and the surrounding community as a result of factual and fictional perceptions of the school's internal atmosphere. At the same time, some researchers define a healthy school climate as a school with high teacher affiliation, high academic emphasis, strong leadership, high resource support, and high instructional integrity (Hoy & Hannum, 1997; Bulach et al., 1995). As a result, teachers in a positive school climate will encourage their students to exceed their expected academic performance level (Spratt, 2004). For example, teachers provide extra academic assistance outside of the instructional day as a means to ensure that the goal is accomplished. In other words, when a positive school climate is accomplished,

teachers, students, and administrators work collaboratively to achieve academic success for all students (Howard et al., 1987). In final analysis, researchers conclude that a healthy school climate results in high student achievement (Hoy & Hannum, 1997; Borkan et al., 2003; Howard et al., 1987).

Accordingly, this chapter will focus on those studies that identify factors of school discipline incidents that impact student achievement. The factors highlighted in this chapter include: (1) zero tolerance legislation, (2) incidents of student discipline documentation, (3) administrative response to incidents of student discipline, and (4) students' discipline effect on student achievement.

Zero Tolerance Legislation

A 1993 report conducted by the United States Secret Service National Threat Assessment Center (USSS) in collaboration with the United States Department of Education (USDOE), states that school violence continues to decline in the nation's public schools. However, in the past five years, high profile public school shootings that resulted in multiple deaths have influenced public opinion toward school safety and caused students and school staff mental and emotional distress (U.S. Secret Service National Threat Assessment Center [USSS], U.S. Department of Education [USDOE], & National Institute of Justice [NIJ], 2000). This school year, three acts of school violence have occurred in the nation's public schools. One September 29, 2006, in Colorado, a man took six girls hostage in a public high school; on September 29, 2006, in Wisconsin, a 15-year-old student was charged with shooting his principal; and finally, on October 2, 2006, in Pennsylvania, a man took 12 girls hostage. All three incidents resulted in at least one death (Compiled from reports by The Associated Press, the New York Daily News & The New York Times, 2006).

School violence crosses all race/ethnic groups, socioeconomic groups, and geographic communities. As a result, most local school districts are working in collaboration with their local police departments in an effort to solve the problems associated with school safety (Skiba & Peterson, 2000). In addition, local school boards are taking stringent steps to preserve the welfare and safety of students, staff, and parents on school grounds (Skiba & Peterson, 2000).

Legislation

Zero Tolerance was put into national policy by the Clinton administration under the Gun-Free Schools Act of 1994. This legislation mandates local school boards expel students who are in possession of a firearm for one calendar year from the date of the assigned suspension. By law, these students are referred to the criminal and juvenile justice system for prosecution. However, there is a provision in the federal mandate that allows chief administrative officers of each locality to modify the one-year expulsion on a case-by-case basis (Skiba & Peterson, 2000).

As a result of the Gun-Free Schools Act and Zero Tolerance, school boards have adopted stringent policies that increase the degree of consequences assigned to students for violating this and other acts of violence. In fact, some school districts have established a zero tolerance school discipline policy (Skiba & Peterson, 2000). Consequently, school districts have adopted management plans that range from verbal reprimands, loss of privileges, detention to suspension, expulsions, and in some states, corporal punishment when dispersing consequences for non-violent and violent student behaviors (Colvin et al., 1993; Skiba & Peterson, 2000).

Changes to local school board policies on student behavior are the result of the Gun-Free Schools Act and Zero Tolerance. Unfortunately, there is little evidence that these stringent policies have improved school safety. In fact, studies have concluded that there is a decrease in some areas of school violence, but there is no evidence that the decline is the result of Zero

Tolerance. Regardless, the decline that exists in violent student behaviors and more frequent classroom disruptive behaviors continues to play a part in the nation's perception of school safety (Skiba & Peterson, 2000).

School Violence

In the late 1970's, the federal government began conducting safe school studies which provide data on violence and crime in the nation's schools. These studies involved surveys that were mailed to over 4,000 schools, on-site visit surveys conducted at 642 schools, and case studies conducted at 10 of the 642 schools. Since that time, several other organizations have developed surveys that question students' experiences with violence and crime in their school (USDOE, 2004).

For example, the National Center for Education Statistics (NCES) sponsors the School Crime Supplement (SCS). This supplement is a student survey that questions student experiences with victimization at school, preventive practices used by schools, school rules, presence of weapons on school grounds, street gangs at school, presence of hate related words or graffiti, bullying, and drug availability at school. Additionally, the NCES conducts the Fast Response Survey System (FRSS) to obtain the school's perception of violence and crime from school principals. This survey is mailed to approximately 900 randomly selected principals and includes information regarding student offenses, school policies, disciplinary actions, and other aspects of school safety (USDOE, 2004).

In fact, the FRSS survey, covering the 1999-2000 school year, indicated that approximately 1,466,000 violent incidents occurred in the nation's public schools. Of the public schools across the nation that reported at least one discipline infraction during the 1999-2000 school year, 71% indicated experiencing at least one violent incident. The two violent incidents

reported most frequently were physical attacks/fights without a weapon, and threats of physical attacks without a weapon. In addition, 31% of the schools indicated reporting at least one violent crime to their local police department for further prosecution through the juvenile court system (USDOE, 2004).

A subsequent study conducted by Brener, Lowry, and Barrios, (2004) identified those violent behavior changes that have occurred among high school students in the nation's public schools from 1991 to 2003. In this study, four school-related violent behaviors were assessed: weapons carried on school property, physical altercations on school property, students threatened or injured with a weapon while on school property, and students not attending school because of personal concern for their safety on school property. To acquire this data, the Youth Risk Behavior Survey (YRBS) was sent to randomly selected public and private high schools across the nation.

The sample size ranged from 10,904 to 16,296 students in grades 9-12 within the 50 states and the District of Columbia. After all the information was collected, it was presented in three independent stages: schools' response rates that ranged from 70% to 81% of the sample size; students' response rates that ranged from 83% to 90% of the sample size; and overall response rates that ranged from 60% to 70% of the sample size. It is important to note that the students were assured anonymity (Brener et al., 2004).

The facts indicate that physical altercations on school property among students in grades 9-12 had decreased from 42% in 1991 to 33% in 2003. In addition, the number of students carrying a weapon on school property had declined from 16.2% in 1993 to 6.1% in 2003. Unfortunately, injury during a physical fight remained stable among students in grades 9-12 (Brener et al., 2004).

The researchers concluded that even though aggressive behaviors had declined on school property, students threatened or injured with a weapon on school property had not decreased among high school students within the Hispanic culture and students in the 10th and 11th grades. In addition, students threatened by their peers resulted in an increase in students not attending school because of personal concern for their safety. In fact, 5.4% of students in grade 9-12 in 2003 identified school safety concerns as the main reason for not going to school, which is a one percent increase from 1993. Even though this research found a decrease in violent behaviors on school grounds, there was no evidence that this decrease was due to stringent changes in school board policy as a result of the Gun-Free Schools Act (Brener et al., 2004).

Public school administrators' responses to students' anti-social behaviors have been reactive and ineffective in modifying students' behavior (Colvin et al., 1993). Even though violent student behavior on school ground has decreased, the threat of violence occurring on school property still exists (USSS et al., 2000; Brener et al., 2004). In fact, Skiba and Peterson (2000) have identified those threats of violence that occur in public schools which included: rumors of violence; verbal intimidation and threats; pushing and shoving by students; and sexual harassment. These behaviors create the perception that public schools are unsafe. As a result of these threats of violent student behaviors, researchers have found an increase in students not attending school due to safety concerns (Brener et al., 2004). Appendix A, Table 1, illustrates a synthesis of the cited research discussed in this section.

Incidents of Student Discipline Documentation

School communities have become diverse. These diverse communities continue to experience a multitude of antisocial behaviors and challenges that threaten school safety (Irvin, Tobin, Sprague, Sugai, & Vincent, 2004). As a result, these antisocial behaviors threaten the

learning environment and prohibit students from achieving, making the school community ineffective (Nichols, 1999). Consequently, ineffective school communities contribute to a negative school climate (Colvin et al., 1993).

The NCLB Act of 2001 requires that all schools create a safe environment for their students. As a result, Title IX, Section 9532, entitled “Unsafe School Choice Option,” requires that all states receiving federal funds report school safety data on a school-by-school basis and identify the “persistently dangerous” public elementary and secondary schools. Therefore, as established by state law, each state is given the authority to determine what offenses qualify a school as “persistently dangerous.” Furthermore, school districts must identify and report those “persistently dangerous schools” within their school district (U.S. Government, 2001). As a result, school districts have created their own data base and reporting system for documenting student discipline (George, Harrower, & Knoster, 2003; Skiba et al., 1997; Nichols, 1999; Sprague, Sugai, Horner, & Walker, 1999).

To document, monitor, and measure incidents of student discipline, office discipline referrals are used in most school districts (Skiba et al., 1997; Sprague et al., 1999; Nichols, 1999; Irvin et al., 2004,). In fact, the office discipline referral represents a specific disciplinary infraction. For example, office discipline referrals provide information related to the disciplinary event such as (a) the name of the student engaged in the behavior that violated the rule, (b) the name of the person who observed the infraction, and (c) the name of the administrative staff member who delivered the consequence (Sprague et al., 1999). As a result, office discipline referrals have been utilized by researchers as a tool to measure the school’s antisocial student behavior, to assess school climate, to establish school-wide discipline efforts, and to ascertain if the school is safe for all stakeholders (Colvin et al., 1993; Nichols, 1999; Sprague et al., 1999;

Irvin et al., 2004). Furthermore, office discipline referrals have been used as a gauge to determine the inconsistency and quality of discipline within a school as well as the disproportionate patterns of discipline for students of other cultural backgrounds (Skiba et al., 1997; Sprague et al., 1999).

Most acts of student behaviors are recorded on office discipline referrals. In order to measure the frequency of occurrence throughout the school, school district, and state, some states require that a code be assigned to various incidents (Skiba, Michael, Nardo, & Peterson, 2002). Depending on the school district, the information on the discipline referral may include the following: the nature of the incident, the action taken by the administrator, the date and time of the incident, the name of the staff member reporting the incident, the name of the administrator handling the referral, previous action(s) taken by the teacher or staff person in an effort to redirect the behavior, date of the administrative action, and notification of the parent(s) (Sprague et al., 1999; Skiba et al., 2002). As a result this information can be organized and maintained by the school and/or school district and later reported to the state as required. Skiba et al. (2002) contend that disciplinary referrals and administrative consequences are guided by school board policy. Therefore, the discipline policies are usually outlined in the school district's code of student discipline (Skiba et al., 2002).

Discipline Referral

A two-part study was conducted by researchers to determine why referrals are written by teachers in response to a student's behavior, the circumstances that resulted in a student's referral to the office, the response options taken by administrators as a result of the referral, the number of students that are suspended as a result of the discipline referral, and the other characteristics related to disciplinary incidents. In particular, this study involved middle school students in a

large urban Mid-Western public school district that serves over 50,000 students. Data were collected from the disciplinary records of all 11,001 middle school students attending 19 middle schools throughout the district from 1994-1995. The ethnic distribution consisted of 56% African American, 42% Caucasian, 1.2 % identified as Latino, and .1% Native American. Male students made up 51.8% of the student population and 48.2% of the total population were female students. For the purpose of this study, SES was determined by using free or reduced lunch qualification. Of the total student sample, 7,187 (65.3%) of the students received free lunch and 891 (8.1%) received reduced lunch (Skiba et al., 1997).

The results indicated that male and African American students were overrepresented in receiving office referrals, suspensions, and expulsions. Using the Chi-squared tests at the $p < .01$, the disproportionality of male and African American students significantly increased as the consequence moved from suspension to expulsion. In addition, there was a statistically significant difference between office referrals and suspensions among low SES groups but not between low SES groups and expulsion. Furthermore, boys were suspended at a significantly higher rate than girls. However, there was no statistically significant difference in the number of suspensions by race/ethnicity or for the interaction of race/ethnicity and gender. Although referrals to the office were significant by race/ethnicity and gender, the researchers found no significant difference related to administration of consequences by race/ethnicity and gender. Lastly, a two-factor analysis of covariance to measure the four measures of discipline (referrals, suspensions, proportion of referrals suspended, mean days suspended), with race/ethnicity and gender used as the two factors of race/ethnicity and gender and controlling for SES, the researchers found a minimal influence of SES on race/ethnicity and gender differences on the disciplinary measures (Skiba et al., 1997).

In a subsequent study conducted by Nichols (1999), student discipline and suspension data was analyzed to determine the disproportionate patterns of discipline for minority and low-income students in a large urban school district in the Midwest. This study was a follow-up to a previous study in which the suspension data collected from a large urban school district was flawed. As a result, the data collected in the previous study did not align with the information obtained during interviews with building administrators. Therefore, this new study was conducted after a new data collection procedure was implemented by the school district (Nichols, 1999).

This study included eleven middle schools, six high schools, and thirty-five elementary schools. The total student enrollment for grades pre-K through 12 was approximately 37,000 students, which consist of 72% Caucasian, 23% African American, 5% from the Hispanic/Latino culture with less than 1% of the student population identified as Asian American or Native American. In addition, approximately 4,100 students received free or reduced lunch, which was used to identify low socioeconomic (SES) students. As an expansion of the previous study, the discipline data obtained contained information related to the level of discipline consequences received by students, which ranged from Level 1: (parent conference) to Level 6: (expulsion) and the area or zone where the discipline infraction occurred (Nichols, 1999).

The total number of discipline infractions equaled 65,507 in elementary, middle, and high schools. Disciplinary events were listed per 100 students in each category, which ranged from horseplay to assault. Of the 26,920 reported discipline infractions, 40% were for minority students, which accounted for less than 29% of the total student population. In addition, out-of-school suspensions (OSS) were assigned to 9,559 students; 3,342 of those receiving OSS were minority students, which was 35% of the total student population (Nichols, 1999).

In final analysis, Nichols (1999) found a correlation between the total number of OSS suspension events and the total number of students receiving OSS as a disciplinary consequence. Conversely, there was no significant correlation between total OSS events and low SES. However with $r = .42$, Nichols (1999) determined that there is a positive correlation between minority students and low SES. Therefore, Nichols (1999) found a strong correlation between OSS events and low SES of minority students. As a result, Nichols (1999) concluded that there is a high correlation between minority students with low SES and high numbers of disciplinary infractions warranting OSS consequences.

Furthermore, Nichols (1999) determined that the majority of student incidents occurred in classrooms and that discipline referrals, as a result of classroom behaviors, were due to inadequate adult supervision in the classroom. Consequently, classroom management, instructional strategies, and student discipline have become a concern for teachers, parents, and the school's administrative staff (Nichols, 1999).

Both Skiba et al. (1997) and Nichols (1999) found an overrepresentation of minority students referred for misbehavior, which led them to believe that discipline and suspensions were racially motivated. Furthermore, Nichols (1999) found a strong positive correlation ($r = .42$) between minority students and students receiving free and reduced lunch with a reversed correlation of $r = -.49$ for majority students. Simply, minority status of students was significantly correlated with low socioeconomic status ($r = .92$). In conclusion, there is a high correlation between out-of-school suspension and free and reduced lunch status ($r = .85$). In addition, both studies concluded that there is a correlation between African-American students and SES (Skiba et al., 1997; Nichols, 1999).

Furthermore, Nichols (1999) and Skiba et al. (1997) agreed that the majority of reported student behaviors occurred in the classroom. Consequently, lack of classroom management has been identified as an indicator for student misbehavior in the classroom. Additionally, Nichols (1999) identified other areas within the school building where frequent student behavior problems occur. These areas include: (1) in elementary schools: the bus loading area and playground; (2) in middle schools: the bus loading area, hallways during classroom transition, gymnasiums, and locker rooms; (3) in high schools: the office area, gymnasiums, study hall, fine arts class, home economics class, parking lots, and industrial technology class (Nichols, 1999; Skiba et al., 1997). Appendix B, Table 2, illustrates a synthesis of the cited research discussed in this section.

Finally, there is no evidence that a relationship exists between the seriousness of the student behavior and severity of the consequence(s) assigned by the administrator handling the discipline referral (Skiba et al., 1997). In addition, the data obtained by office referrals provide only a rough estimate of student behaviors that occur in public schools and administrative responses to those behaviors (Skiba et al., 1997; Nichols, 1999).

Response to Incidents of Student Discipline

Out-of-school suspension (OSS) is considered to be the most severe short-term consequence assigned to students for student discipline. School administrators, in some districts, have the authority to remove a student from the school environment for up to five days; whereas, in other school districts the building administrator may remove a student for up to 10 school days. Regardless, when a student is removed from the school environment for a period of time, he or she is not allowed to attend class, have access to school grounds, participate in extra-curricular activities, and in some cases, not allowed to complete academic work that would have

been assigned had the student been in class. However, researchers have found no evidence that out-of-school suspension is an effective deterrent to student behavior problems (Nichols, 1999).

Conversely, in-school suspension (ISS) is used by some school districts as another intervention in dealing with minor student behavior problems. This method allows students to attend school, but they are removed from direct classroom instruction. These students are placed in a designated room that isolates them from the school population. Once again, researchers have found no evidence that in-school suspension deters student misconduct (Nichols, 1999).

Out-of-school suspension and ISS are reactionary tools used by administrators to facilitate classroom instruction and learning. However, Killion (1998) conducted a study to determine the most effective discipline method used by Indiana secondary school principals when dealing with student discipline problems. A stratified and systematic sampling method was used to identify the secondary school principals used in this study. As a result, twenty-five percent of the administrators listed in the Indiana directory were selected to participate in this study.

As a result, the selected secondary school principals were surveyed by written questionnaires. In addition, telephone interviews were conducted to determine the most and least effective method used by school principals when assigning consequences for student discipline. Of the 88 surveys that were sent out, 74 surveys were returned; a return rate of 84%. Likewise, out of the 74 administrators who completed the written survey, 51 agreed to participate in a telephone interview. The research concluded that the most effective discipline methods identified by administrators are alternative schools, out-of-school suspension, and Saturday schools; whereas, before or after school detention was determined as the most ineffective method used by administrators to correct student misbehavior (Killion, 1998).

Another study conducted by Sprague et al., (2001) identified effective interventions used to improve student behaviors and school safety. This study was conducted in nine schools located in two suburban and one urban community in the Pacific Northwest. In fact, the participating schools were chosen by their local school administrators. After schools were selected, comparisons were made on selected performance measures to six similar schools within the same communities. Next, a profile was developed for each school, which included characteristics such as demographics, the type and number of at-risk students, discipline referral patterns, school crime, and school safety. These profiles were used as primary evaluation tools to compare schools (Sprague et al., 2001).

Unlike previous research on school climate, this study identified school climate factors that contribute to students' antisocial behavior. These factors include: (1) ineffective instruction, (2) inconsistent and punitive management practices, (3) inability of students to practice pro-social interpersonal and self-management skills, (4) ineffective and unclear rules and expectations, (5) inconsistency with enforcing school rules, and (6) inability to differentiate instruction based on student needs. To address these factors some school districts allow schools to use other non-punitive disciplinary interventions to improve student behaviors. Such interventions identified in this study included the school counselor advising the student, a school psychologist providing insight-based therapy to the student, and a self esteem program that improves a student's self image. The researchers found that providing these programs was usually ineffective because the student has no desire to participate in the program and he or she fails to take ownership of the behavior. Therefore, if these interventions are unsuccessful – in accordance with their school board policies – school administrators will consequently use more reactive, punitive methods that result in the student exclusion from the educational setting.

Hence, ISS, OSS, and expulsion, were identified as the most common reactive responses to student discipline used by public schools (Sprague et al., 2001).

To identify the effective disciplinary interventions, a treatment-comparison analysis was used between the nine treatment schools and the six comparison schools. To accomplish this comparison, the treatment schools were asked to participate in the Effective Behavioral Support (EBS) model, which is a whole-school approach that involves a system of training, technical assistance, and evaluation of school discipline and climate. In addition, the Second Step Violence Prevention Curriculum was also implemented in each treatment school (Sprague et al., 2001).

To begin with, schools reported the frequency of office discipline referrals for the year prior to the implementation and during the implementation of the EBS model. Afterward, this data were used as a measurement for decision making in regard to intervention effects. In fact, office discipline referrals in the baseline year ranged from 550 referrals to 3,167 for the treatment schools and 260 referrals to 2,608 in the intervention year. In contrast, the comparison schools ranged from 601 to 1,240 office referrals during the baseline year and 755 to 1,222 in the intervention year (Sprague et al., 2001).

Secondly, the researchers administered the Oregon School Safety Survey to administrators, teachers, and parents from both the treatment and comparison schools. The participants were asked to rate the extent of 16 risk factors and 17 protective factors of school violence and discipline problems within their schools. Interestingly enough, the treatment schools reported 2.53 for risk factors and 2.57 for protective factors, which indicate minimal to moderate risk and protective factors. Similarly, the comparison school also indicated minimal to moderate risk and protective factors (Sprague et al., 2001).

The researchers concluded that the interventions provided limited improvement to school-wide discipline and school safety. Accordingly, the treatment schools saw a slight improvement in the number of office discipline referrals as measured by the survey. However, this minor change was found to be related to the perception of the interventions and improvement in student social skills by administrators and parents (Sprague et al., 2001).

After the September 17, 1999, brawl that led to a two year suspension of seven African American students, Skiba, Michael, Nardo, and Peterson, (2002) conducted a study to determine if there was an overrepresentation of African American students in school discipline. Specifically, these researchers investigated the existence of racial bias in school discipline. This study was conducted on middle school students in a large, urban Mid-Western public school district serving over 50,000 students. The data were obtained from disciplinary records of all 11,001 students in 19 middle schools in the district for the 1994-1995 school year.

A two-factor analysis of covariance was used to assess the four measures of discipline to race/ethnicity and gender. As a result, researchers found that males and African American students were overrepresented in office referrals, suspensions, and expulsions. Similarly, this disproportional representation increased as the punitive consequence moved from suspension to expulsion. In addition, a correlation between SES, office referrals, and suspensions was observed. Even though office referrals are significantly related to race/ethnicity and gender, no significance between the assigned consequences and race/ethnicity was found (Skiba et al., 2002).

A subsequent study conducted by Christle, Nelson, and Jolivette (2004) investigated those school characteristics that influence student behaviors that result in students' suspensions from the educational setting. This study utilized Kentucky middle schools' suspension data from

schools that reported both high and low suspension rates. The variables studied included: (1) school demographics, environment, policies and disciplinary procedures; (2) classroom environment and instruction; (3) administrator characteristics, philosophies, attitudes, and behaviors; (4) staff characteristics, beliefs, attitudes and behaviors; and (5) student characteristics and behaviors (Christle et al., 2004).

This study was conducted in three stages. During Stage One, 2000-2001 and 2001-2002 data were collected from the annual reports submitted by the Kentucky Department of Education (KDE) and the Kentucky Center for School Safety (KCSS). This data included: (1) total student enrollment; (2) gender; (3) socioeconomic background measured by the percentage of students receiving free and reduced lunch; (4) ethnicity of students; (5) academic achievement; (6) attendance rate; (7) retention rate; (8) dropout rate; (9) number of student discipline violations; and (10) number of law violations. In Stage Two, suspension rates were used to select 40 middle schools, 20 schools with the highest suspension rates (HSS, mean = 62.96) and 20 schools with the least suspension rates (LSS, mean = 2.47). Finally, Stage Three involved collecting and analyzing qualitative data from eight of the forty sampled middle schools where site visits, interviews, and surveys were conducted (Christle et al., 2004).

In Stage One, the researchers used Pearson correlation coefficient to determine the correlation between suspension rates to the ten aforementioned variables. They concluded that five of the ten variables were positively correlated to suspension rates: number of student discipline violations, SES, law violations, retention rate, and dropout rate. In addition, suspension rate was negatively correlated with student attendance and academic achievement among Caucasian students. And finally, gender and school size were not significantly correlated with the suspension rate (Christle et al., 2004).

In Stage Two, researchers used a between-groups multivariate analysis to determine the effect of suspension rates between LSS and HSS. Three additional variables were measured during this stage (average years of teaching experience, amount of per-pupil expenditure, and teacher-student ratio). The results indicated a significant difference between the 20 LSS and the 20 HSS of the eight of the 10 variables measured in Stage One. For example, attendance rates, the number of Caucasian students, and academic achievement were significantly higher in the LSS than the HSS. Dropout rate, student discipline violations, law violations, and the percentage of low SES were significantly higher for HSS than LSS. However, there was no significant difference observed between retention rate, enrollment, average teaching experience, teacher-student ratio, and gender (Christle et al., 2004).

In Stage Three, the administrator surveys identified four differences between the HSS and LSS: (1) principals in HSS had less experience than the principals in LSS; (2) administrators in the HSS expressed the need to reduce the number of suspensions for all students; (3) the administrators in the HSS stated that parental involvement was minimal; (4) HSS administrators expressed the need for additional resources to address student behavior problems. During the observations phase in Stage Three, several patterns emerged: (1) the physical plant was cleaner among the LSS than the HSS; (2) there were more displays of student-created work in LSS than HSS; and (3) there appeared to be more teacher-student interaction in the LSS than HSS (Christle et al., 2004).

The researchers concluded that students in HSS were usually suspended more than once. Therefore, the number of students suspended, either ISS or OSS, was found to be a strong indicator of additional suspensions. In addition, SES was found to be positively correlated to suspension rates. Furthermore, race/ethnicity and family structure were identified as risk factors

for SES, and race/ethnicity was found to be related to the suspension rate (Christle et al., 2004). These findings supported previous conclusions of suspension disproportional representation in male students; students from low SES; minority students, usually African American and/or of the Hispanic culture; and students with academic disabilities (Skiba et al., 1997).

In summary, alternative schools, OSS, and Saturday schools are the most effective consequence assigned to students for discipline problems (Killion, 2998). Sprague et al. (2001), on the other hand, investigated other intervention programs for student discipline problems but determined that school-wide discipline programs had minimal improvement on the number of office discipline referrals, school-wide discipline, and school safety. Finally, schools with a high number of low SES students and a high number of minority students are strong indicators for high student suspension rates (Christle et al., 2004). Appendix C, Table 3, illustrates a synthesis of the cited research discussed in this section.

The Effect of Student Discipline on Student Achievement

According to Thompson and Walter (1998), schools should provide a structured environment where students learn. However, when students are concerned for their personal safety, they are unable to concentrate, which minimizes students' ability to learn. As a result, schools or classrooms no longer become a community of learners. In short, when violence, disruption, and chaos permeate the school environment, teachers, and administrators become ineffective (Thompson & Walter, 1998). For schools to be effective, the environment must be free of disruption and chaos, thus allowing teachers to provide a nurturing learning environment, which fosters high student achievement (Thompson & Walter, 1998; Howard et al., 1987; Borkan et al., 2003).

In 1999, Rodney, Crafter, Rodney, and Mupier conducted a study to determine which variables contribute to grade retention among African American males. Grade retention was defined as the number of times a participant had been held back in school. Two hundred forty-three African American 13-17 year old males, living in a Mid-Western city, participated in this study. To compensate for their time, the contributors received \$20 for participating in a one-hour interview session. Students were interviewed by the researchers with questions obtained from sections of the Children's Structured Assessment for the Genetics of Alcoholism and related to information associated with alcohol use, conduct disorder, time spent with parents, and discipline in the home (Rodney et al., 1999).

Using the multiple-regression analysis, three variables were identified as being positively related to grade retention in African American males: (1) number of suspensions from school, (2) conduct disorder, and (3) lack of discipline within the home. The researchers also found that African American males scored lower than any other race/ethnic group on standardized tests as a result of these factors. In addition, African American males were more likely to be identified with a learning disability or as emotionally disturbed (Rodney et al., 1999).

Additionally, the researchers identified physical aggression as the most common infraction that lead to African American males receiving ISS or OSS during the school year. Forty-two percent of these students suspended for aggressive behavior were repeat offenders. Out of the total number of students who dropped out of school, 55% of them had been suspended at least once (Rodney et al., 1999).

The facts in this study also indicated that 14% of the participants had abused alcohol. Of those who abused alcohol, 85% reported that they had been suspended from school at least once and 33% reported that they had been retained at least once. Of the students abusing alcohol,

22% were retained and 17% had been suspended from the learning environment (Rodney et al., 1999).

Finally, 69% of the respondents indicated that they had been suspended at least once; whereas 51% reported being suspended two or more times. In addition, 20% of the total number of participants indicated that they had been retained at least once; whereas, 90% of the total number of participating students reported being suspended at least once (Rodney et al., 1999).

Thereafter, a longitudinal study was conducted to assess whether student behavior could be a predictor for academic achievement. The participants in this study came from the Raising Healthy Children (RHC) Project located in ten public schools in the suburbs of a school district in the Pacific Northwest. The participants, who included teachers, students, and parents, received annual surveys which allowed the researchers to obtain data related to academic achievement from two cohorts (grades 7 and 10) (Fleming, Haggerty, Catalano, Harachi, Mazza, & Gruman, 2005).

The researchers found that attention regulation, commitment to school, and social and problem solving skills were significant predictors of academic achievement. Consequently, low test scores and low grades could be predicted as a result of elevated levels of attention problems, negative behaviors, and disruptive and/or aggressive student behavior. However, a student's mental instability was not a good predictor of a student's test scores. On the contrary, low test scores can be a predictor of early alcohol and cigarette use by adolescences. Finally, the researchers found that negative peer groups influenced students' antisocial behavior, test scores, and grades (Fleming et al., 2005).

Similarly, Zentner and Smith conducted respective studies to determine the relationship between classroom management, as measured by classroom disciplinary infractions, and student

achievement in their different states. Zentner conducted a multi-linear study that examined the relationship between classroom discipline and student achievement on eighth-grade students in a school district in Wisconsin. This study involved 67,882 eighth grade students within the 426 school districts in the state of Wisconsin for the 1999-2000 school year. Additionally, all proficiency levels of the state-wide assessment test in mathematics and reading were compared to the reported incidents of disciplinary infractions as measured by trancies, OSS, and expulsions. The incidents of disciplinary infractions were obtained from the Wisconsin Information Network for Successful Schools (WINNSS) (Zentner, 2001).

Zentner's (2001) study examined those factors, as determined by the researcher, which would directly affect student achievement. As identified in previous studies, those variables included: SES, gender, ethnicity, building enrollment size, LEP, truancy rates, out-of-school suspension rates, and expulsion rates. Test data, in the area of mathematics and reading, were obtained from the 1999-2000 state examination. To determine the relationship between student discipline and student achievement, multiple regression analysis was used to analyze the data using a multi-linear technique. By using regression analysis, the researcher was able to construct a model that would predict student achievement using three independent variables: truancy, suspension, and expulsion state-wide. As a result, a strong correlation was found between Caucasian students and truancy at 66%. In addition, truancy appeared to be a good predictor of academic and student discipline problems. In fact, schools with high truancy rates also had high suspension and expulsion rates. Furthermore, Zentner (2001) found a negative correlation between student discipline and student achievement at individual schools. However, the discipline variables were not significant predictors of student achievement. This finding was confirmed at the minimal and proficient test levels in both mathematics and reading across the

state. In conclusion, incidences of student discipline are negatively correlated to student achievement across all levels (Zentner, 2001).

Likewise, Smith (2005) conducted a study to determine the relationship between school division climate and student achievement in school divisions in the Commonwealth of Virginia. The population in this study included all 132 public school districts in the Commonwealth of Virginia, which included 1,829 elementary, middle, and high schools within the state.

For the purpose of this study, student achievement data from the 2002-2003 Virginia Standard of Learning (SOL) tests and discipline data from the state's 2002-2003 Discipline, Crime, and Violence Incidents report obtained from the Virginia Department of Education website served as the data source. Smith (2005) identified four factors that would negatively impact school climate: absenteeism, student discipline, vandalism, and student dropout rate.

Unlike other studies conducted in this area, a hierarchical cluster method was used to create a climate index. This climate index served as a measuring tool in determining the school division's climate within five clusters. The aforementioned four categories were used to cluster school districts according to similar factors. In addition, each district's achievement scores were averaged across the clusters to determine if relationships existed across cluster members and student achievement (Smith, 2005).

Using the climate index, Smith (2005) found a relationship between school division climate and student achievement in the school divisions within the Commonwealth of Virginia. In addition, an association between school division climate and student achievement in reading, mathematics, history, science, and English/reading were found. Finally, this study concluded that student disorder, combined with students who received free and reduced lunch, could be

predictors of student achievement (Smith, 2005). Both studies provide evidence that student behavior affects student achievement at the state level (Zentner, 2001; Smith, 2005).

In summary, Zentner (2001) found a negative correlation between eighth grade students' discipline and achievement. Likewise, Smith (2005) found a relationship between student disciplinary infractions and student achievement. Furthermore, Fleming et al., (2005) determined that a student's mental stability is a predictor of grades but not test scores. Finally, among African American males, conduct disorder, number of suspensions, and lack of discipline in the home are related to grade retention (Rodney et al., 1999). All of the studies agree that student behavior affects a student's ability to achieve. Appendix D, Table 4 illustrates a synthesis of the cited research discussed in this section.

Summary

Due to the high profile shootings that have occurred in public schools in the past five years, many citizens assume that public schools in the United States are unsafe. As a result, safety in our schools has become a concern on all governmental levels (USSS et al., 2000). As schools try to meet the federal mandates of NCLB, school districts and states have made school safety a priority (U.S. Government, 2001). As a result of the Gun-Free Schools Act of 1994, the establishment of a zero tolerance policy for students in possession of a firearm on school grounds was instituted across the nation (Skiba & Peterson, 2000). In response to the law and the zero tolerance policy, school districts have adopted stringent policies to enforce zero tolerance for violent acts conducted by students on school grounds (Skiba & Peterson, 2000). The U.S. Secret Service (2000) reported a decrease in school violence. Likewise, Skiba and Peterson (2000) indicate that there is no evidence that this decrease is due to zero tolerance or other stringent policies adopted by school districts.

With a decline in violent student behaviors in public schools, there is an increase in non-violent behaviors that could impact a student's ability to learn. Those non-violent behaviors include threats of violence, classroom disruption, insubordination, and sexual harassment (Brener et al., 2004). However, these non-violent behaviors threaten students' safety, which results in an increase in students' absenteeism (Skiba & Peterson, 2000). According to NCLB, schools that are considered persistently dangerous can receive punitive sanctions from their states (U.S. Government, 2001). As a result, the correlation between students' absenteeism and their subsequent lack of skill development is well documented in students' performance on state-wide assessments (U.S. Government, 2001; Thompson & Walter, 1998; Howard et al., 1987; Borkan et al., 2003).

In review, the discipline referral is used by most school districts to document the frequency of student discipline problems and consequences assigned by the administrators (George et al., 2003; Skiba et al., 1997; Nichols, 1999). Accordingly, school districts create their own policies and procedures on student discipline; determine how to maintain student discipline data; and determine the disposition assigned to student discipline infractions (George et al., 2003; Skiba et al., 1997; Nichols, 1999; Irvin et al., 2004).

In addition, researchers have found that males and African American students are overrepresented in office referrals, suspensions, and expulsions. In fact, the disproportional representation by gender and race/ethnicity increases as the punitive consequences moves from suspension to expulsion. Furthermore, students receiving free or reduced lunch are more likely to be referred to the office for disobedience. The researchers have indicated that African American students were most likely to receive free or reduce lunch.

Finally, a healthy school climate will result in teachers providing their students with effective instruction, which will result in an increase in student achievement (Hoy & Hannum, 1997; Borkan et al., 2003; Howard et al., 1987). Unfortunately, frequent student discipline problems can threaten school climate and affect a student's ability to learn (Howard et al., 1987; Borkan et al., 2003).

CHAPTER 3

METHODOLOGY

Statistics and their interpretation by experts show only the surface dimension of the difficulties we face. Beneath them lies a tension between hope and frustration that characterizes current attitudes about education at every level.

A Nation at Risk, 1983

Introduction

This chapter describes how the research was conducted. As a reminder, the purpose of this study is to determine if there is a relationship between incidents of student discipline and student achievement across four Eastern states. A quantitative research design was conducted guided by the following questions:

1. Is there a relationship between incidents of student discipline and student achievement in reading and mathematics across four Eastern states?
2. Is there a relationship between incidents of student discipline and student achievement by race/ethnicity in reading and mathematics across four Eastern states?
3. Is there a relationship between incidents of student discipline and student achievement by gender in reading and mathematics across four Eastern states?
4. Is there a relationship between incidents of student discipline and student achievement as determined by socioeconomic status in reading and mathematics across four Eastern states?

In review, a positive school climate is one that is free of chaos, pleasant, welcoming, and safe (Howard et al., 1987). Unfortunately, a positive school climate does not prevent a school from experiencing at least one violent incident (USDOE, 2004). As previously stated in Chapter Two, a national survey indicated that 71% of all public schools in the United States experienced at least one violent incident that was reported to the police between 1999-2000 (USDOE, 2004).

Furthermore, school climate has been identified as a construct that impacts student achievement (Borkan et al., 2003). Therefore, high frequency of student discipline problems and high incidents of suspension and expulsion are indicators of a negative school climate (Howard et al., 1987). If public schools are experiencing at least one violent incident and if classrooms are disorderly, teachers will be ineffective which impacts student achievement (USDOE, 2004; Howard et al., 1987). Finally, the research indicates that if students are concerned about their safety in school, they will not attend school, which results in high retention and drop-out rates (Brener et al., 2004). As school administrators attempt to maintain order and school safety, punitive and exclusionary discipline is usually administered (Skiba & Peterson, 2000). Therefore, the researcher's null hypothesis is excessive student discipline has no impact on student achievement.

Population

The population of this study consists of the 1,249 public school districts across four Eastern states: Maryland, New Jersey, Pennsylvania, and Virginia. This includes 5,204,359 elementary and secondary students; with a race/ethnic distribution of 3,313,790 Caucasians; 1,131,155 African Americans; 488,262 from the Hispanic culture; and 279,152 classified as other. Within this population 1,593,464 students receive free or reduced lunch. In this study, free or reduced lunch is used to identify students who are socioeconomically disadvantaged.

Data reported to each of the four states' department of education (DOE) websites served as the data source for this investigation.

Maryland, New Jersey, Pennsylvania, and Virginia provide similar data when reporting incidents of discipline, crime, and violence. In addition, each state reports student achievement pass rates as proficient and advanced proficient by school districts. For this reason these four Eastern states were selected for this regional study.

Data Collection

To increase accountability and improve student achievement, NCLB requires all states to create their own assessment tool. In the four states used in this study, students in grades three through eight are required to take annual state assessments in reading and mathematics. A report card is published by individual school districts and state DOE which documents the results of those assessment. To make this information assessable to the general public, these data are available on the state's DOE website (U.S. Government, 2001).

Each state's assessment tool is unique (U.S. Government, 2001). As a result, the assessments are designed to measure the performance of students on their specific state curriculum objectives and to identify areas of strength and weakness at the school and district level (National Center for Educational Statistics, 2005). The results obtained from the state assessments are used by district leaders in determining how the district's curriculum aligns with the state's standards (U.S. Government, 2001).

In addition, the four states used in this study report three measurement levels that determine the schools', the school districts', and the states' level of accreditation: basic or fail (the name varies by state), proficient, and advanced proficient. Therefore, students in grades three through eight demonstrate their knowledge in the subject area with the minimal rate of pass

proficient (U.S. Government, 2001). For the purpose of this study, the percentage of students passing their state's assessment test in eighth grade reading and mathematics at the district level was obtained.

In a similar manner, the four states used in this study posted their state, district, and individual school's report card on their state DOE website. The report cards indicate the percentage of students passing the state's achievement test by school district. For the purpose of this study, the results of the 2004-2005 state-wide assessment tests were used to determine student achievement for each school district within the four states. As a result, the 2004-2005 state-wide assessment tests in eighth grade reading and mathematics was used because these data were the most current available for measuring student achievement across the four states.

Furthermore, the four states' DOE received data from each school district in regards to student discipline, violence, and crime; free and reduced lunch; race; and gender. The free and reduced lunch data were used to identify student SES for each school district. It is important to note that a student receiving free or reduced lunch is determined by the guidelines established by each state's school nutritional program.

Schools and school districts have been mandated under Title V and NCLB to assist students in meeting academic standards by providing a safe, drug-free environment that enables high quality education for all students. As a result, states that receive federal funds are required to define "persistently dangerous schools" and report school safety on a school-by-school basis (U.S. Government, 2001). Therefore, in compliance with the federal mandates, school districts receive discipline and safety data from each school, the district compiles and reports these data to the state, and the state compiles and reports its data to the federal government. While many states report this information differently, Maryland, New Jersey, Pennsylvania, and Virginia

report similar discipline data, which enabled clustering of school districts by similarities across the four states.

For the purpose of this study the discipline, crime, and violence data were obtained by school district. The discipline categories collected included incidents of (1) disorderly conduct/disrespect; (2) weapons, which includes bombs, firearms, and knives; (3) substance abuse and use, which includes the use, possession, and distribution of alcohol, prescription drugs, and any illegal substance; and (4) violence, which includes assaults, physical altercation, intimidation, robbery, sex offenses, threats of bodily harm, harassment, and bullying. Data collected from each state's 2004-2005 discipline, crime, and violence report were utilized in this study. Therefore, the number of incidents per 100 students was calculated in each category for each school district ($N = 1,249$) within the four states.

Research Design

Descriptive research as defined by Isaac and Michael (1983) is a description of facts and characteristics of a given population. As a result, this study describes the relationship between reported incidents of student discipline and student achievement across four states, thereby making it a descriptive research design.

Clustering is a method used to group individual subjects according to similar or shared attributes. In other words, clustering is an efficient method of organizing large sets of data to retrieve required information. Used as a technique for visualizing data, this method enables the researcher to describe similarities and differences that may exist in each category (Everitt, 1993).

Everitt (1993) lists several types of cluster analysis used to group individual subjects into shared categories. The analysis includes hierarchical, optimization, mixture, density, and clumping. The hierarchical model allows the use of more than one independent variable or

vectors to establish similarities among subjects (Everitt, 1993). For the purpose of this study, hierarchical clustering analysis was used.

The hierarchical clustering analysis incorporates two techniques for establishing cluster agglomerative and dendrogram. Agglomerative method is the fusion of individual subjects into groups, and the division method partitions the individual subjects into finer groupings.

Dendrogram technique is the two-dimensional diagram that illustrates the fusions or divisions created at each stage of the hierarchic classification according to their similarities. Furthermore, clusters are represented by their mean values/vectors by each variable. These mean vectors position each variable on an interval scale (Everitt, 1993). Therefore, the clusters of school districts are formed by clumping school districts together in successive order according to homogeneous factors. This study uses the Johnson Max process, which stacks the variables according to their like factors (Smith, 2005).

For the purpose of this study, the hierarchical clustering analysis was used to form five clusters of school divisions across the four states ($N = 1,249$) and was organized into seven reporting categories: (1) free and reduced lunch, (2) disorderly conduct, (3) weapons, (4) violence, (5) substance abuse, (6) race/ethnicity, and (7) gender.

To create the clusters, descriptive data on each of the listed incidents obtained from each of the four states' DOE was downloaded into an Excel spreadsheet. Next, the data were rescaled based on infractions per 100 students for each school district. The number of students receiving free and reduced lunch, race, and gender was also rescaled on a per-pupil scale of 100 students for each school district. This rescaled data were used to calculate the mean and standard deviation scores for each reporting category. In addition, the rescaled data were utilized to calculate the z-score (standard score) for each school division in each reporting category.

Finally, the z-scores were entered into SPSS by school district and reporting category. SPSS was used to group the school districts across the four states by similar factors thereby forming the five clusters (Smith, 2005).

Afterward, the state-wide assessment test results were used to measure student achievement for each school district. All four states report pass percentages as pass proficient or advanced. These data were used to calculate the pass percentage in each school district. Once the pass percentage was calculated, the scores were averaged across each of the five clusters to determine the relationship between each cluster membership and student achievement.

Finally, clusters were analyzed to determine if there is a relationship between incidents of student discipline and student achievement across the 1,249 school districts. To accomplish this task, the proficient and advanced percentages were averaged to determine the pass percentage for eighth grade reading and mathematics achievement scores. To complete the analysis, a mean and standard deviation score was calculated for each school division ($N = 1,249$) in reading and mathematics (Smith, 2005).

Summary

The purpose of this study is to determine the relationship between incidents of student discipline and student achievement across four Eastern states. In this regional study, the following data were used to organize the school districts within the four states ($N = 1,249$) into clusters and organized into the following reporting categories: (1) free and reduced lunch/SES, (2) disorderly conduct/disrespect, (3) weapons, (4) violence, (5) substance abuse, (6) ethnicity, and (7) gender. The raw scores obtained from the incidents of discipline, crime/violence report and the free and reduced lunch report from each state's DOE were transferred to an Excel spreadsheet. The mean score and standard deviation was calculated for each category; these data

were used to calculate z-scores for each state. Furthermore, these new data were transferred into SPSS. Hierarchical cluster method was used to cluster the states by similar factors using the Johnson Max process. Finally, student achievement scores were averaged within each cluster and analyzed to determine if there is a relationship between incidents of student discipline and student achievement.

CHAPTER 4

PRESENTATION OF THE DATA

Our goal must be to develop the talents of all to their fullest. Attaining that goal requires that we expect and assist all students to work to the limits of their capabilities. We should expect schools to have genuinely high standards rather than minimum ones, and parents to support and encourage their children to make the most of their talents and abilities.

A Nation at Risk, 1983

Introduction

The purpose of this study was to determine if there is a relationship between incidents of student discipline and student achievement across four Eastern states. A hierarchical cluster analysis was used in this study to group school districts across Maryland, New Jersey, Pennsylvania, and Virginia. The student population within these four states consisted of 1,249 public school districts serving 5,204,359 elementary and secondary public school students. To answer the aforementioned question, the following research questions guided this study:

1. Is there a relationship between incidents of student discipline and student achievement in reading and mathematics across four Eastern states?
2. Is there a relationship between incidents of student discipline and student achievement by race/ethnicity in reading and mathematics across four Eastern states?
3. Is there a relationship between incidents of student discipline and student achievement by gender in reading and mathematics across four Eastern states?

4. Is there a relationship between incidents of student discipline and student achievement as determined by socioeconomic status in reading and mathematics across four Eastern states?

For the purpose of this regional study, four Eastern states that report similar discipline, crime, and violence categories for each school district were selected. During the data collection process, no discipline data were found for two school districts in Pennsylvania and one school district in Maryland. Thus these districts were eliminated from the study. In addition, eighth grade reading and eighth grade mathematics state-wide assessment tests and discipline data were not found in 138 school districts in New Jersey and these districts were eliminated. Table 5 illustrates the number of school districts used in this study.

Table 5

Total Number of School Districts Identified and School Districts Clustered

States	Number of Operating School Districts	Number of School Districts Clustered
Maryland	25	24
New Jersey	592	454
Pennsylvania	500	498
Virginia	132	132
Total	1,249	1,108

To develop the hierarchical clusters, a data matrix was created using data obtained from each state’s department of education website. Raw data were compiled for each school district

($N = 1,108$) in the following categories: (1) disorder, (2) weapons, (3) substance abuse, (4) violence, (5) free and reduced lunch, (6) race/ethnicity (Caucasian, African American, Hispanic, Other), and (7) gender. After collecting the raw data, a standardized data matrix was created by calculating the z-score (standard score) for each category. This standardized score calculated for each of the seven categories was used to create five clusters of school districts on the basis of their similarities.

To create the data matrix, the total number of incidents for disorderly conduct, weapon violations, substance abuse, violence, free and reduced lunch, race/ethnicity, and gender was obtained from each state's department of education website. The crime and discipline reports for each state provided descriptive data that included total number of weapon violations, incidents against school staff and students, and other disciplinary infractions as identified by the state's department of education. For the purpose of this study, descriptive data from other discipline categories were calculated and listed within one of the five identified incidents. For example, weapons included bombs, firearms, and knives; substance abuse included alcohol, prescription drugs, and illegal substances; and violence included assaults, physical altercation, intimidation, robbery, sex offenses, threats of bodily harm, harassment, bullying, and gang activity.

This descriptive data were compiled into an Excel spreadsheet. Using the total student enrollment in each school district, the total number of incidents of discipline, free and reduced lunch, race/ethnicity, and gender was rescaled to a per-pupil scale of 100 ($N = 1,108$). This data matrix was standardized by calculating the z-score for each category within school districts. To create the five clusters of school districts according to similarities, this standardized z-score was transferred into SPSS. Using the Johnson Max method of stacking the variables according to similar factors, five clusters of school districts across the four Eastern states were created.

During the data collection process, some data were missing in 138 school districts across the four states. As a result, these school districts were eliminated from this study. Therefore, five clusters were formed representing 1,108 school districts across Maryland, New Jersey, Pennsylvania, and Virginia (Cluster One, $n = 93$; Cluster Two, $n = 394$; Cluster Three, $n = 316$; Cluster Four, $n = 130$; and Cluster Five, $n = 175$). Lastly, the mean/average and standard deviation scores were calculated for each category (disorder, weapons, substance abuse, violence, free and reduced lunch, race/ethnicity, and gender) by cluster. The mean/average and standard deviation were calculated on a per-pupil scale of 100. These data were used to compare the seven categories by clusters.

After the data matrix was created and school districts were assigned to one of five clusters, the 2004-2005 state-wide eighth grade assessment tests in reading and mathematics were used to determine student achievement for each school district within each cluster. All state-wide assessment tests used in this study were administered to eighth grade students during the spring semester of the 2004-2005 school year. To calculate the percentage pass rate for each school district, the average percentage for proficient and for advanced proficient scores were averaged in eighth grade reading and mathematics for each school district within each cluster. Finally, the mean/average pass percentage and standard deviation were calculated in reading and mathematics by cluster. These data were used to compare the achievement score by clusters.

Presentation of the Data

Initial Observation

During the initial observation of the five clusters, it is interesting to note that no school districts from Maryland were assigned to Clusters Two or Five. However, 13 of Maryland's 24 school districts fell into Cluster Three. Out of the 454 New Jersey school districts clustered, 234

districts fell into Cluster Two. With only eight of Pennsylvania’s school districts falling into Cluster Four, 164 of Pennsylvania’s 498 school districts fell into Cluster Five. Lastly, out of Virginia’s 132 school districts, 75 of them were assigned to Cluster Three. Table 6 illustrates the complete numerical distribution of school districts in each state by cluster.

Table 6
Total Number of School Districts in Each Cluster

State	<u>N</u>	Cluster One	Cluster Two	Cluster Three	Cluster Four	Cluster Five
Maryland	24	9	0	13	2	0
New Jersey	454	22	234	77	115	6
Pennsylvania	498	23	152	151	8	164
Virginia	132	39	8	75	5	5
Total	1,108	93	394	316	130	175

Research Question One

Is there a relationship between incidents of student discipline and student achievement in reading and mathematics across four Eastern states?

Table 7 illustrates the mean/pass percentage and standard deviation scores for the eighth grade achievement test for reading and mathematics by clusters. These data were used to determine the student achievement rate by cluster.

Table 7

Mean/Average Pass Percentage and Standard Deviation for Eighth Grade Student Achievement Scores by Cluster.

<u>Cluster</u>	<u>Reading</u>		<u>Mathematics</u>	
	M	SD	M	SD
1	53.4	14.4	51.1	20.6
2	81.0	9.6	76.6	10.1
3	67.7	10.8	65.4	12.1
4	66.3	17.6	58.0	18.5
5	65.5	9.4	64.1	10.4

Note. Mean and standard deviation scores are based on the pass percentage for each school district.

Among the clusters, the achievement percentage in Cluster One is the lowest in both reading (M = 53.4, SD = 14.4) and mathematics (M = 51.1, SD = 20.6) among all five clusters. Cluster Two has the highest achievement percentage in both reading (M = 81.0, SD = 9.6) and mathematics (M = 76.6, SD = 10.1) among all clusters. It is interesting to note that Cluster Two is the only cluster with an achievement percentage more than 70%. All other achievement percentages in Clusters Three, Four, and Five fall between Cluster Two (reading M = 81.0, SD = 9.6; mathematics M = 76.6, SD = 10.1) and Cluster One (reading M = 53.4, SD = 14.4; mathematics M = 51.1, SD = 20.6).

Table 8 illustrates the mean and standard deviation scores for incidents of student behavior by disorder, weapons, substance abuse, and violence. The mean scores for each category are based on the number of incidents per 100. These data are used to determine the number of student discipline incidents.

Among the five clusters, Cluster One ($n = 95$) had the highest per 100 incidents of student behavior (Table 8) in the following categories: disorder, $M = 10.16$ ($SD = 30.82$); weapons, $M = 0.35$ ($SD = 0.31$); and violence, $M = 3.38$, ($SD = 2.81$). With a mean score of 0.23 ($SD = 0.20$), substance abuse was reported as the second highest per 100 incidents among all five clusters. Eighth grade achievement percentage (Table 7) for reading, $M = 53.4$ ($SD = 14.4$) and for mathematics, $M = 51.1$, ($SD = 20.6$) in Cluster One were the lowest among all five clusters.

Cluster Two ($n = 396$) had the lowest number of incidents per 100 in all discipline categories (Table 8) in comparison to all five clusters (Table 8): disorder, $M = 0.06$, ($SD = 0.29$); weapons, $M = 0.05$, ($SD = 0.07$); substance abuse, $M = 0.11$, ($SD = 0.12$); and violence, $M = 0.47$, ($SD = 0.44$). In the analysis of the eighth grade reading and mathematics pass percentage (Table 7), Cluster Two had the highest achievement percentage of all five clusters; reading, $M = 81.0$ ($SD = 9.6$), and mathematics, $M = 76.6$, ($SD = 10.1$).

Cluster Three ($n = 318$) scored below Cluster One ($n = 95$) in the number of student discipline incidents per 100 (Table 8) in disorder ($M = 2.53$, $SD = 7.80$), weapons ($M = 0.17$, $SD = 0.13$), and violence ($M = 1.73$, $SD = 1.25$). Substance abuse ($M = 0.33$, $SD = 0.30$) incidents per 100 was the highest among all clusters. In addition, eighth grade reading and mathematics achievement percentages (Table 7) in Cluster Three were higher than Cluster One ($M = 53.4$, SD

= 14.4) and lower than Cluster Two ($M = 81.0$, $SD = 9.6$). The reading mean score in Cluster Three was 67.7 ($SD = 10.8$) and mathematics had a mean score of 65.4 ($SD = 12.1$).

Illustrated in Table 8, Cluster Four ($n = 132$) scored below Clusters One ($n = 95$) and Cluster Three ($n = 318$) in per 100 incidents of disorder, $M = 0.08$ ($SD = 0.39$). Cluster Four also had the third highest incidents per 100 of weapons, $M = 0.13$ ($SD = 0.13$), substance abuse, $M = 0.16$ ($SD = 0.22$), and violence, $M = 0.92$ ($SD = 0.87$). The achievement percentage (Table 7) in reading ($M = 66.3$, $SD = 17.6$) was below Cluster Three ($n = 318$) and above Cluster One ($n = 95$). The same was true for the mathematics achievement percentage of 58.0 ($SD = 18.5$) with a 6.9% difference between Cluster Four and Cluster One ($M = 51.1$, $SD = 20.6$).

Table 8 illustrates that Cluster Five ($n = 177$) scored below Cluster One ($n = 95$) and Cluster Three ($n = 318$) but above Clusters Two ($n = 396$) and Four ($n = 132$) in the number of disorder ($M = 0.14$, $SD = 0.36$) incidents per 100. Weapons, $M = 0.07$ ($SD = 0.07$); substance abuse, $M = 0.13$ ($SD = 0.09$); and violence, $M = 0.71$ ($SD = 0.56$) incidents per 100 were higher than Cluster Two yet lower than Clusters one, three, and four. The eighth grade reading achievement percentage (Table 7) in Cluster Five was 65.5 ($SD = 17.6$). The eighth grade mathematics achievement percentage ($M = 64.1$, $SD = 10.4$) was the third highest percentage among all five clusters.

Is there a relationship between incidents of student discipline and student achievement across four Eastern states? Table 7 illustrates the eighth grade achievement percentage in reading and in mathematics by providing the mean/average percentage and the standard deviation by cluster. Table 8 illustrates the individual mean score and standard deviation for each incident category within each cluster based on student discipline incidents per 100. Cluster One had the highest student discipline incidents per 100 in disorder, weapons, and violence.

Table 8

Mean and Standard Deviation for Incidents of Student Behavior by Cluster

<u>Cluster</u>	<u>N</u>	<u>Disorder</u>		<u>Weapons</u>		<u>Substance Abuse</u>		<u>Violence</u>	
		M	SD	M	SD	M	SD	M	SD
1	93	10.16	30.82	0.35	0.31	0.23	0.20	3.38	2.81
2	394	0.06	0.29	0.05	0.07	0.11	0.12	0.47	0.44
3	316	2.53	7.80	0.17	0.13	0.33	0.30	1.73	1.25
4	130	0.08	0.39	0.13	0.13	0.16	0.22	0.92	0.87
5	177	0.14	0.36	0.07	0.07	0.13	0.09	0.71	0.56

Note. Mean and standard deviation scores are based on a per-pupil scale of 100.

Cluster One also had the lowest eighth grade achievement percentage in both reading and mathematics. On the other hand, Cluster Two had the lowest student discipline incidents per 100 in all four categories (disorder, weapons, substance abuse, and violence) and the highest eighth grade achievement percentage in both reading and mathematics than all five clusters. Cluster Two also reported the only achievement percentages above 70% in both eighth grade reading and mathematics.

Cluster Three reported the second highest student discipline incidents per 100 in three of the four categories (disorder, weapons, and violence) and the highest incidents per 100 of substance abuse. Cluster Four reported the third highest student discipline incidents per 100 of weapons, substance abuse, and violence; and Cluster Five had the second lowest incidents of weapons, substance abuse, and violence. These data also indicate that each cluster reported a mean score of less than one incident per 100 of weapons and substance abuse, yet four out of the five clusters reported at least one incident of violence.

Finally, Cluster Three's reading and mathematics achievement percentages were the second highest among all five clusters. In Cluster Four, eighth grade reading achievement percentage was the third highest percentage and mathematics achievement percentage was the second lowest among all other clusters. Cluster Five reported the second lowest achievement percentage in reading and the third highest in mathematics. It is important to note that the achievement score for four out of the five clusters were below 70%.

Research Question Two

Is there a relationship between incidents of student discipline and student achievement by race/ethnicity in reading and mathematics across four Eastern states?

Table 9 illustrates the mean number for race/ethnic groups by cluster. The mean score represents the number of students per 100 in each race/ethnic group. Caucasian, African American, Hispanic, and “Other” are the four race/ethnic categories recognized under NCLB Act. The “Other” race/ethnic category includes American Indian, Alaska Native, Asian, and Pacific Islander. These data are used to determine the number of per 100 students in each race/ethnic group by cluster. For example, in Cluster One, 52.16 per 100 students are Caucasian students and 50.88 per 100 students are African American students. In Cluster Five, 96.66 per 100 students are Caucasian and 1.69 per 100 students are African-American.

Table 9 illustrates that Cluster One ($n = 95$) reports the highest number of African American students ($M = 50.88$) per 100 than any other cluster. With a mean score of 52.16, the number of Caucasian students per 100 in Cluster One ranked the second lowest among all clusters. With a mean score of 5.03, the number of students from the Hispanic culture reported the second highest mean/average per 100 among the clusters. However, 1.58 per 100 students reported in the “Other” race/ethnicity category, which was the second lowest among all the clusters. According to Table 9, Cluster One reported the lowest achievement percentage in both reading ($M = 53.4$) and mathematics ($M = 51.1$). In addition, Table 8 illustrated that Cluster One had the highest student discipline incidents, per 100 students, in the area of disorder ($M = 10.16$, $SD = 30.82$), weapons ($M = 0.35$, $SD = 0.31$), and violence ($M = 3.38$, $SD = 2.81$).

According to the data in Table 9 race/ethnicity in Cluster Two ($n = 396$), 88.37 per 100 students were Caucasian, which is the second highest mean score among all clusters. Likewise, 4.14 per 100 students in the “Other” category recorded the second highest number per 100 students among all clusters. Also in Cluster Two, 3.62 out of 100 students were African

Table 9

Mean and Standard Deviation for Race/Ethnicity by Cluster

<u>Cluster</u>	<u>Caucasian</u>	<u>African American</u>	<u>Hispanic</u>	<u>Other</u>	<u>Reading</u>	<u>Mathematics</u>
	M	M	M	M	M	M
1	52.16	50.88	5.03	1.58	53.4	51.1
2	88.37	3.62	3.95	4.14	81.0	76.6
3	84.56	10.46	3.23	1.74	67.7	65.4
4	40.76	16.66	31.08	11.35	66.3	58.0
5	96.66	1.69	1.00	0.69	65.5	64.1

Note. Mean scores are based on a per-pupil scale of 100.

American, which was the second lowest score among all clusters. In comparison to all the clusters, 3.95 per 100 students reported in the Hispanic category, which was the third highest number among all clusters. In addition, Cluster Two reported the highest achievement percentage in eighth grade reading ($M = 81.0$) and mathematics ($M = 76.6$). Table 8 illustrated that Cluster Two reported the lowest student discipline incidents per 100 in all four categories: disorder ($M = 0.06$, $SD = 0.29$), weapons ($M = 0.05$, $SD = 0.07$), substance abuse ($M = 0.11$, $SD = 0.12$), and violence ($M = 0.47$, $SD = 0.44$).

Within race/ethnicity in Cluster Three, 84.56 per 100 students were Caucasian, which ranked as the third highest number among all clusters. Likewise, the 10.46 students per 100 were African American, which reported in as the third highest average in comparison to the other clusters. The race/ethnicity category in Cluster Three reported that 1.74 out of 100 students were classified in the “Other” category, which was the third highest number when compared to the other clusters. Finally, Cluster Three reported the second lowest number of Hispanic ($M = 3.23$) per 100 among all clusters. Table 9 illustrated that Cluster Three reported the second highest achievement percentage in reading ($M = 67.7$) and mathematics ($M = 65.4$). In addition, Table 8 illustrated that Cluster Three reported the second highest student discipline incidents per 100 of disorder ($M = 2.53$, $SD = 7.80$), weapons ($M = 0.17$, $SD = 0.13$), and violence ($M = 1.73$, $SD = 1.25$).

In Cluster Four ($n = 132$), 40.76 per 100 students were identified as Caucasian, which was the lowest reported number among all clusters. Whereas 16.66 per 100 students in Cluster Four were African Americans, which was the second highest number in comparison with all other clusters. Both the Hispanic ($M = 31.08$) and “Other” ($M = 11.35$) categories reported the highest number of students per 100 in respectively. In addition, Table 9 illustrates that Cluster

Four's achievement percentage in reading ($M = 66.3$) was the third highest percentage and mathematics ($M = 58.0$) was the second lowest percentage among all clusters. Cluster Four also reported the third highest number (Table 8) of student discipline incidents per 100 in three of the four categories: weapons ($M = 0.13$, $SD = 0.13$), substance abuse ($M = 0.16$, $SD = 0.22$), and violence ($M = 0.92$, $SD = 0.87$).

Table 9 illustrates that Cluster Five ($n = 177$) had the highest number of Caucasian ($M = 96.66$) students per 100, than any other cluster. In addition, 1.69 students were classified as African American, 1.00 students were classified as Hispanic, and 0.69 students were classified as "Other" on a per-pupil scale of 100. Table 9 illustrates that Cluster Five reported the second lowest achievement percentage in reading ($M = 65.5$) and the third highest achievement percentage in mathematics ($M = 64.1$). In addition, Cluster Five's student discipline incidents per 100 were the second lowest in three of the four categories: weapons ($M = 0.07$, $SD = 0.07$), substance abuse ($M = 0.13$, $SD = 0.09$), and violence ($M = 0.71$, $SD = 0.56$).

In summary, Cluster One ($n = 95$) reported that 50.88 per 100 students were African American, which was the second highest number of African American students among all clusters. In addition, 5.03 per 100 students in Cluster One were from the Hispanic culture. Cluster One also reported the most number of student discipline incidents per 100 in three of the four categories (disorder, weapons, and violence) and the lowest failure percentage in both reading ($M = 53.4$) and mathematics ($M = 51.1$). Cluster Two ($n = 396$) reported that 88.37 per 100 students reported as Caucasian, which was the second highest number race/ethnic group among all clusters. Cluster Two also reported the lowest number of student discipline incidents per 100 in all four categories and the only cluster to report achievement percentages above 70% in eighth grade reading and mathematics. Although Cluster Five ($n = 177$) had the highest

number of Caucasian ($M = 96.66$) per 100 students, it reported less than one student discipline incident per 100 in all four categories. Furthermore, Cluster Five reported the second lowest achievement percentage in eighth grade reading ($M = 65.5$) and third highest achievement percentage in mathematics ($M = 64.1$).

Cluster Three reported the third highest number of Caucasian ($M = 84.56$), African-American ($M = 10.46$), and “Other” ($M = 1.74$) students per 100. In addition, Cluster Three reported at least two student discipline incidents per 100 in disorder and violence. Even though Cluster Three reported at least one incident of substance abuse ($M = 0.33$, $SD = 0.30$), this score was the highest student discipline incident per 100 among all five clusters. Although the achievement percentages were less than 70%, the achievement percentages in reading and mathematics were the second highest percentage among all five clusters.

Cluster Four reported that every 40.53 out of 100 students were Caucasian, which was the lowest number of Caucasian students among all clusters. Yet 31.27 per 100 students identified in the Hispanic culture, which was the highest number of students reported among all clusters. Question One identified at least one incident per 100 of weapon, substance abuse, and violence occurred, and yet the students in Cluster Five performed poorly on the eighth grade reading ($M = 66.3$) and mathematics ($M = 58.0$) assessments (Table 7).

Research Question Three

Is there a relationship between incidents of student discipline and student achievement by gender in reading and mathematics across four Eastern states?

Table 10 illustrates the number of male and female students represented in each cluster. The mean score represents the number of male and female students based on a per-pupil scale of 100 students. These data were used to determine how many students, on a per-pupil scale of 100,

are male and how many are female. For example, 50.36 per 100 students in Cluster One are male and 47.75 per 100 students are female.

Table 10 illustrates that over 50 per 100 students in all four clusters are male students. In contrast, less than half of the students represented in this study are female. With 52.42 per 100 students as males Cluster Three reports the highest number of male students among all clusters. Cluster Three also reports the 49.77 per 100 female students, which is highest among all five clusters. At 50.36 per 100 male and 47.75 per 100 female students, Cluster One reports the lowest number of male and female students among all clusters.

Table 10
Mean and Standard Deviation of Gender by Cluster

<u>Cluster</u>	<u>Male</u>		<u>Female</u>		<u>Reading</u>		<u>Mathematics</u>	
	M	SD	M	SD	M	SD	M	SD
1	50.36	10.42	47.75	9.87	53.4	14.4	51.1	20.6
2	51.40	1.92	48.42	2.45	81.0	9.6	76.6	10.1
3	52.45	10.05	49.77	9.55	67.7	10.8	65.4	12.1
4	51.69	1.76	47.96	3.87	66.3	17.6	58.0	18.5
5	51.80	2.07	48.50	1.77	65.5	9.4	64.1	10.4

Note. Mean score is based on a per-pupil scale of 100.

Of all the clusters, 50.36 (SD = 10.42) of the students per 100 in Cluster One ($n = 95$) are males and 47.75 (SD = 9.87) are females. Within incidents of student discipline (Table 8),

Cluster One has the highest incidents per 100 students in the area of disorder ($M = 10.16$, $SD = 30.82$), weapons ($M = 0.35$, $SD = 0.31$), and violence ($M = 3.38$, $SD = 2.81$). In addition, student discipline incidents per 100 of substance abuse ($M = 0.23$, $SD = 0.20$), ranked as the second highest when compared to all other clusters. Lastly, Cluster One reports the lowest achievement percentage (Table 10) in both reading ($M = 53.4$, $SD = 14.4$) and mathematics ($M = 51.1$, $SD = 20.6$).

In Cluster Two ($n = 396$), 51.40 ($SD = 1.92$) per 100 students were male, which was the second lowest number among all clusters. In addition, 48.42 ($SD = 2.45$) per 100 students were female, which was the third highest number among all clusters. When comparing student discipline (Table 8) with the other clusters, Cluster Two reported the lowest number of student discipline incidents per 100 in all categories: disorder ($M = 0.06$, $SD = 0.29$), weapons ($M = 0.05$, $SD = 0.07$), substance abuse ($M = 0.11$, $SD = 0.12$), and violence ($M = 0.47$, $SD = 0.44$). In both content areas, Cluster Two reported the only achievement percentage (Table 10) above 70% for both eighth grade reading ($M = 81.0$, $SD = 9.6$) and mathematics ($M = 76.6$, $SD = 10.1$).

The results of Cluster Three reported that 52.42 ($SD = 10.05$) per 100 students were males and 49.77 ($SD = 9.55$) per 100 students were females. Both ranked as the highest male and female number among all other clusters. The number of student discipline incidents per 100 in Cluster Three, as illustrated in Table 8, were the highest involving substance abuse ($M = 0.33$, $SD = 0.30$) and the second highest in the area of disorder ($M = 2.53$, $SD = 7.80$), weapons ($M = 0.17$, $SD = 0.13$), and violence ($M = 0.93$, $SD = 1.73$). Like three other clusters, the achievement percentage (Table 10) in eighth grade reading and mathematics were below 70%, yet Cluster Three reported the second highest achievement percentage among the other clusters; reading ($M = 67.7$, $SD = 10.8$) and mathematics ($M = 65.3$, $SD = 12.1$).

The number of males ($M = 51.69$, $SD = 1.76$) per 100 students in Cluster Four was the third highest number among all cluster. Whereas the number of females ($M = 47.96$, $SD = 3.87$) per 100 students reported as the second lowest number among all clusters. Cluster Four reported at least one student discipline incident per 100 (Table 8) in three categories: weapons ($M = 0.13$, $SD = 0.13$), substance abuse ($M = 0.16$, $SD = 0.22$), and violence ($M = 0.92$, $SD = 0.87$). These were the third highest number of student discipline incidents per 100 among the all clusters. In the two student achievement test (Table 10), Cluster Four reported the third highest percentage in reading ($M = 66.3$, $SD = 17.6$), and the second lowest percentage in mathematics ($M = 58.0$, $SD = 18.5$).

Cluster Five ($n = 177$) report the second highest number of males with a mean of 51.80 ($SD = 2.07$) and females with a mean of 48.50 ($SD = 1.77$) per 100 students. In addition, three of the four categories of student discipline incidents per 100 (Table 8) ranked as the seconded lowest number when compared to the other cluster; weapons ($M = 0.07$, $SD = 0.07$), substance abuse ($M = 0.13$, $SD = 0.56$), and violence ($M = 0.71$, $SD = 0.56$). Furthermore, disorder ($M = 0.14$, $SD = 0.36$) incidents per 100 had the third highest number among all clusters. Like Clusters one, three, and four the achievement percentage in eighth grade reading and mathematics reported below 70% (Table 10). Within the content areas reading ($M = 65.5$, $SD = 17.6$) had the second lowest achievement percentage, whereas mathematics ($M = 64.4$, $SD = 10.4$) the third highest achievement percentage among the clusters.

In summary, Cluster Three reported the highest number of male and female students and the second highest achievement scores. However, on a per-pupil scale of 100 students, at least two student discipline incidents of disorder, weapon violation, and violence were reported in Cluster Three. Cluster One had the lowest number of male and female students per 100 and the

lowest achievement percentage among all clusters in reading and mathematics. However, three of the four student discipline incidents per 100 reported the highest number compared to all other clusters. Cluster Two, being the only cluster reporting pass achievement scores in both reading and mathematics, reported the third highest and second lowest number of male and female students per 100 respectively. In addition, Cluster Two reported the lowest number of student discipline incidents per 100 in all student discipline categories when compared to all other clusters.

Lastly, Cluster Five reported the second highest number of male and female students on a per-pupil scale of 100, yet reported the second lowest reading achievement percentage and the third highest mathematics achievement percentage. At least one student discipline incidents per 100 was reported in Cluster Five with weapons, substance abuse, and violence reported as the second lowest incidents and disorder reported as the third highest among all other clusters.

Research Question Four

Is there a relationship between incidents of student discipline and student achievement as determined by socioeconomic status in reading and mathematics across four Eastern states?

Table 11 illustrates the mean and standard deviation for student's receiving free and reduced lunch, which was used to determine student's socioeconomic status. The mean score represents the number of low SES students per 100 represented by cluster. According to Table 11, Cluster One reports 52.87 per 100 students received free/reduce lunch. This is the highest number of low SES students among all clusters. However, 9.55 per 100 students in Cluster Two received free and reduce lunch. This is the lowest number of low SES students among all clusters. Clusters Three, Four, and Five reported over 30 per 100 students representing low SES students.

In the area of low SES, Cluster One ($n = 95$) reported the highest number of students per 100 receiving free and reduce lunch ($M = 52.87, SD = 16.44$). Table 7 illustrated that Cluster One reported the lowest achievement percentages in both reading ($M = 53.4, SD = 14.4$) and mathematics ($M = 51.1, SD = 20.6$). In Table 8, Cluster One reported the highest number of student discipline incidents per 100 in disorder ($M = 10.16, SD = 30.82$), weapons ($M = 0.35, SD = 0.31$) and violence ($M = 3.38, SD = 2.81$).

Table 11

Mean and Standard Deviation of Free/Reduce Lunch by Cluster

<u>Cluster</u>	<u>Free/Reduced Lunch</u>		<u>Reading</u>		<u>Mathematics</u>	
	M	SD	M	SD	M	SD
1	52.16	16.44	53.4	14.4	51.1	20.6
2	9.55	7.47	81.0	9.6	76.6	10.1
3	31.30	15.17	67.7	10.8	65.4	12.1
4	36.62	23.97	66.3	17.6	58.0	18.5
5	32.23	10.75	65.5	9.4	64.1	10.4

Note. Mean score is based on a scale of per 100 students.

In the area of low SES, Cluster Two ($n = 396$) reported the lowest number of students per 100 receiving free and reduce lunch ($M = 9.55, SD = 7.47$). According to Table 11, this is the only cluster reporting an achievement percentage above 70% in both eighth grade reading ($M = 81.0, SD = 9.6$) and mathematics ($M = 76.6, SD = 10.1$). In addition, Cluster Two has the lowest

student discipline incidents per 100 (Table 8) in all four categories: disorder ($M = 0.06$, $SD = 0.29$), weapons ($M = 0.05$, $SD = 0.07$), substance abuse ($M = 0.11$, $SD = 0.12$), and violence ($M = 0.47$, $SD = 0.44$).

In Cluster Three ($n = 318$), 31.30 ($SD = 15.17$) students per 100 received free and reduced lunch. This is the second lowest number of SES students per 100 among the other clusters. According to Table 11, eighth grade reading ($M = 67.7$, $SD = 10.8$) and mathematics ($M = 67.7$, $SD = 12.1$) achievement percentage was the second highest percentages reported. In student discipline incidents per 100 (Table 8), Cluster Three reported three of the four categories with the second highest incidents among the other clusters. Those three categories are disorder ($M = 2.53$, $SD = 7.80$), weapons ($M = 0.17$, $SD = 0.13$), and violence ($M = 1.73$, $SD = 1.25$). Substance abuse ($M = 0.33$, $SD = 0.30$) reported the highest incidents per 100 among the other clusters.

With 36.62 ($SD = 23.97$) per 100 students receiving free and reduced lunch, Cluster Four ($n = 132$) ranked with the second highest number of SES students compared to the other clusters. Also in Cluster Four, the student achievement percentage (Table 11) in eighth grade reading ($M = 66.3$, $SD = 17.6$) was the third highest percentage and mathematics ($M = 58.0$, $SD = 18.5$) reported the second lowest percentage among all of the other clusters. Cluster Four reported at least one student discipline incident per 100 (Table 8) occurring in all four categories with weapons ($M = 0.13$, $SD = 0.13$), substance abuse ($M = 0.16$, $SD = 0.22$), and violence ($M = 0.92$, $SD = 0.87$) ranking as the third highest among all clusters. Disorder ($M = 0.08$, $SD = 0.39$) ranked second lowest student discipline incidents per 100 among all clusters.

Cluster Five ($n = 177$) reported the third highest number of low SES students per 100 receiving free and reduce lunch ($M = 32.23$, $SD = 10.75$). In Table 11, Cluster Five reported

reading achievement percentage of 65.5 (SD = 9.4) and mathematics achievement percentage of 64.1 (SD = 10.4). The reading achievement percentage in Cluster Five was the second lowest percentage and mathematics was the third highest percentage among all other clusters. From Table 8 Cluster Five reported the second lowest student discipline incidents per 100 in weapons (M = 0.07, SD = 0.07), substance abuse (M = 0.13, SD = 0.09), and violence (M = 0.71, SD = 0.56).

To summarize, with the highest number of low SES students per 100, Cluster One had the lowest achievement percentage in reading and mathematics. In addition, Cluster One had the highest student discipline incidents per 100 in three of the four student discipline categories. On the other hand, Cluster Two had the lowest number of students, per 100, receiving free and reduce lunch and had the highest pass percentage in both reading and mathematics. Furthermore, Cluster Two had the lowest number of student discipline incidents per 100.

Finally, Clusters Three, Four, and Five each reported 30 plus students, on a per-pupil scale of 100, receiving free and reduce lunch. Although all three clusters reported achievement percentages below 70%, Cluster Three reported the highest achievement percentage in reading and mathematics among all clusters. Furthermore, all three clusters reported at least one student discipline incident per 100 students in at least three of the four discipline categories.

Conclusion

The purpose of this study was to determine if there is a relationship between incidents of student discipline and student achievement across four Eastern states. The hierarchical cluster analysis was used to cluster school districts across Maryland, New Jersey, Pennsylvania, and Virginia. Out of the 1,249 active school districts across the four states, 1,108 school districts were clustered.

Data obtained from each state's department of education website was the main source utilized to retrieve the data. Results from the 2004-2005 state-wide achievement scores in eighth grade reading and mathematics provided the pass percentage for each school district. Each state's 2004-2005 discipline, crime, and violence report provided the data for incidents of student discipline. Additional data obtained from the state's websites included gender, ethnicity, and free and reduce lunch. Raw data were collected, rescaled to a per-pupil scale of 100 and standardized by calculating the z-scores which was used to cluster all 1,108 school districts by similar factors. Clusters were analyzed to determine the relationship between the incidents per 100 pupils and student achievement across four Eastern states.

In analyzing the clusters, several findings were noted. Cluster One ($n = 95$) had the lowest student achievement rate among all other clusters. In addition, Cluster One reported the most number of African-American per 100 students, and the highest number of low SES students. In analyzing incidents of student discipline, Cluster One reported the highest number of incidents, per 100, in three of the four discipline categories.

On the other hand, Cluster Two ($n = 396$) was the only cluster that reported achievement percentages above 70% in both reading and mathematics. Cluster One had the highest number of African-American students, per 100, Cluster Two reported the second lowest number of African-Americans and the second highest number of Caucasian students. In addition, Cluster Two reported the lowest number of students receiving free and reduced lunch, which indicates a low number of SES students. Likewise, the numbers of student discipline incidents were the lowest in Cluster Two when compared to the other clusters.

While Cluster Five reported the highest number of Caucasian students, the achievement percentage reported 12 percentage points above Cluster One in reading and 13 percentage points

above Cluster One in mathematics. Even though 30 per 100 students in Cluster Five received free and reduced lunch, student discipline incidents per 100 were less than one in all four discipline categories.

Finally, Clusters Three and Four report failing achievement scores in both content areas. Like Cluster Five, Clusters Three and Four reported only 30 per 100 students, receiving free and reduced lunch. However, Cluster Three reported the highest number of male students and Cluster Four reported the highest number of female students on a per-pupil scale of 100.

All of the data presented in this chapter are based on a per-pupil scale of 100. The findings presented in this chapter will serve as the basis for the final summary of the findings and recommendations for further studies in Chapter 5.

CHAPTER 5

FINDINGS, DISCUSSION, AND RECOMMENDATIONS

The goal of productivity means that the school provides a wholesome, stimulating, and productive learning environment conducive to the academic and personal growth of students.

Howard et al., 1987

Introduction

As a requirement of NCLB Act, all schools must establish a safe environment for students, staff, and parents (U.S. Government, 2001). Research has established that a safe school environment is an indicator of a healthy school climate (Howard et al., 1987). Therefore, if schools are safe and the school climate is healthy, teachers are able to provide high quality instruction and students will obtain the skills they need to meet their state standards (Borkan et al., 2003; Howard et al., 1987).

Further research indicates that a high frequency of student discipline incidents is a negative construct that creates a negative school climate (Howard et al., 1987). Incidents of student violence contribute to a high frequency of student discipline problems that result in excluding students from the school environment (Hernandez & Seem, 2004). Therefore, the existence of these negative factors impact the school's ability to achieve high academic standards established by their state and federal government (Howard et al., 1987).

Several researchers have identified student discipline as having a direct impact on student achievement (Howard et al., 1987; Borkan et al., 2003; Sugai & Horner, 2001; Zentner, 2001; Smith, 2005). Additionally, researchers have identified factors that relate to incidents of student discipline and student achievement. These factors include SES, race/ethnicity, and gender

(Skiba et al., 1997; Nichols, 1999; Rodney et al., 1999; Fleming et al., 2005). If schools and school districts are aware of those negative constructs that impact student discipline, schools will be able to develop programs that will decrease incidents of student discipline, thereby providing students with a safe school environment in which to learn. Consequently, a safe school environment, free of chaos and fear, will enable teachers to provide students with high quality instruction thus giving students an opportunity to learn those skills needed to pass their state-wide assessment test (NCES, 2005; Sugai & Horner, 2001; Thompson & Walter, 1998; Howard et al., 1987; Borkan et al., 2003).

Several studies have been conducted which involve student discipline on the district and state level. However, most of these studies have involved the strategies utilized by administrators to reduce student discipline, the methods utilized by administrators to monitor student discipline, and the methods used to identify disciplinary gaps by gender and race/ethnicity. In addition, most of the previous research has been primarily qualitative in which researchers use questionnaires, surveys, and interview methods as their primary tools to obtain the necessary data. However, there has been limited research involving student discipline across multiple states, making this study significant.

The purpose of this study was to determine the relationship between incidents of student discipline and student achievement across four Eastern states. A hierarchical cluster analysis was used to group 1,108 school districts from Maryland, New Jersey, Pennsylvania, and Virginia into five clusters. The following questions were used to guide this study:

1. Is there a relationship between incidents of student discipline and student achievement in reading and mathematics across four Eastern states?

2. Is there a relationship between incidents of student discipline and student achievement by race/ethnicity in reading and mathematics across four Eastern states?
3. Is there a relationship between incidents of student discipline and student achievement by gender in reading and mathematics across four Eastern states?
4. Is there a relationship between incidents of student discipline and student achievement by socioeconomic status in reading and mathematics across four Eastern states?

To create the hierarchical clusters, a data matrix was developed using data obtained from each state's department of education website. From each website, raw data were compiled by school district in the following categories: (1) incidents of student discipline in the area of disorder, weapons, substance abuse, and violence; (2) free and reduced lunch, (3) race/ethnicity, and (4) gender. Secondly, this raw data were re-scaled to a per-pupil scale of 100 by category, which was utilized to calculate the z-score (standard score) for each school district by reporting category. This process provides a common measuring tool in which school districts can be compared. Finally, the z-score was used to cluster the school districts by similarities using the Johnson Max method of stacking the variables.

This study sought to determine the relationship between incidents of student discipline and student achievement. Therefore to measure student achievement, the 2004-2005 state-wide assessment tests in eighth grade reading and mathematics were used to measure student achievement by cluster.

Once clusters were formed and student achievement percentages calculated by cluster, the data were analyzed to determine if there is a relationship between incidents of student discipline and student achievement across four Eastern states.

Findings

1. There is a relationship between incidents of student discipline and student achievement in reading across four Eastern states. The data (Cluster Two) showing high eighth grade reading achievement percentage (81.0) also demonstrated low incidents of student discipline in disorder (0.06), weapons (0.05), substance abuse (0.11), and violence (0.47) on a per-pupil scale of 100. The data (Cluster One) showing low reading achievement percentage (53.4) demonstrated high incidents of student discipline in disorder (10.16), weapons (0.35), and violence (3.38) on a per-pupil scale of 100. This finding supports Smith (2005) who found a relationship between student disciplinary infractions and student achievement and Zentner (2001) who found a negative correlation between eighth grade student discipline and student achievement.
2. There is a relationship between incidents of student discipline and student achievement in mathematics across four Eastern states. The data (Cluster Two) showing high eighth grade mathematics achievement percentage (76.6) demonstrated lower incidents of student discipline in disorder (0.06), weapons (0.05), substance abuse (0.11), and violence (0.47) on a per-pupil scale of 100. In contrast, the data (Cluster One) showing low mathematics achievement percentage (51.1) demonstrated high incidents of student discipline in disorder (10.16), weapons (0.35), and violence (3.38) on a per pupil scale of 100. This

finding supports Smith (2005) who found a relationship between student disciplinary infractions and student achievement and Zentner (2001) who found a negative correlation between eighth grade student discipline and student achievement.

3. There is a relationship between incidents of student discipline and student achievement by race/ethnicity in reading and mathematics across four Eastern states. That data (Cluster Two) showing high eighth grade reading (81.0) and mathematics (76.6) achievement percentages and low incidents of student discipline in disorder (0.06), weapons (0.05), substance abuse (0.11), and violence (0.47) also have a high population of Caucasian (88.37) students and students identified as “Other” (4.14) and a low population of African American (3.62) and Hispanic (3.95) students. In contrast, in data (Cluster Two) that showed low reading (53.4) and mathematics (51.1) achievement percentages and high incidents of student discipline in disorder (10.16), weapons (0.35), and violence (3.38) also had a higher population of African American (50.88) and Hispanic (5.03) students and a lower population of Caucasian (52.16) and students identified as “Other”(1.58). This finding supports Skiba et al., (2002) and Christle et al. (2004) who found a relationship between violations of student discipline by race/ethnicity and student achievement.
4. There is no significant relationship between incidents of student discipline and student achievement by gender in reading and mathematics across four Eastern states. The data indicates that gender was evenly distributed across all five

clusters giving no indication that the high or low incidents of student discipline or achievement percentages was the result of the number of male or female students represented in each cluster.

5. There is a relationship between incidents of student discipline and student achievement by socioeconomic status in reading and mathematics across four Eastern states. This is evident in data (Cluster One) showing a high number of students receiving free and reduced lunch (52.87) also demonstrated high incidents of student discipline in disorder (10.16), weapons (0.35), and violence (3.38) as well as low achievement percentages in eighth grade reading (53.4) and mathematics (51.1). In contrast, data (Cluster Two) showing a low number of students receiving free and reduced lunch (9.55) also demonstrated low incidents of student discipline in disorder (0.06), weapons (0.05), substance abuse (0.11), and violence (0.47) as well as high achievement percentages in reading (81.0) and mathematics (76.6). This finding supports Smith (2005), Skiba et al. (2002), and Christle et al. (2004) who found a relationship between SES, discipline violations, and student achievement.

Summary of Findings

The findings in this study were based on the results obtained from a data matrix. As a result, the findings supported previous research that involved student discipline and student achievement.

This study found that achievement percentages in eighth grade reading and mathematics are related to incidents of student discipline in the areas of disorder, weapons, substance abuse, and violence. In addition, there is a relationship between incidents of student discipline in the

area of disorder, weapons, substance abuse, and violence and eighth grade achievement percentage by race/ethnicity and students who receive free and reduced lunch. Therefore, school districts that experience high incidents of student discipline in the area of disorder, weapons, substance abuse, and violence will probably have a high number of African American and Hispanic students and a higher number of students receiving free and reduced lunch. As a result, student achievement in eighth grade reading and mathematics will be low.

These findings support studies that found a relationship between SES, discipline violation by race/ethnicity, and student achievement (Skiba et al., 2002; Christle et al., 2004). As a result, states and school districts must place emphasis on improving classroom management, which has been identified as an indicator for student misbehavior (Nichols, 1999; Skiba et al., 1997).

Also supported in these findings is research that identified violence and disorder as two major incidents of student discipline that cause chaos to the school environment (Thompson & Walter, 1998). As a result, school districts must assure that their schools are safe and orderly if students are to achieve. School districts must assure that their students are receiving the skills needed to pass their state-wide assessment test. To accomplish this task, schools must understand that if students feel safe they are able to concentrate; thereby, able to obtain the knowledge they need to be successful in school (Thompson & Walter, 1998). This is especially true in those schools where there is a higher concentration of minority and low SES students.

Rodney et al., (1999) found that African American students score lower on standardized tests than any other race/ethnic group, which can also be concluded in the findings of this study. Researchers have identified that low test scores could be a predictor of negative student behaviors, which is supported in these findings (Fleming et al., 2005; Rodney et al., 1999; Thompson & Walter, 1998). Finally, as a replication of Smith's (2005) study, these findings are

consistent in that there is a relationship between school climate, as defined by his Climate Index using student discipline, and student achievement.

Implications

School districts can use the findings in this study to improve incidents of student discipline and student achievement by addressing the following:

1. School districts should assign their best instructional and administrative staffs to schools that have high incidents of student discipline, high numbers of minority students, and high numbers of students receiving free and reduced lunch.
2. School districts should provide their best instructional and administrative staffs with an incentive when they agree to work in schools with high incidents of student discipline, high numbers of minority students, and high numbers of students receiving free and reduced lunch.
3. School districts should look into school-wide discipline programs that have proven to reduce incidents of student discipline for those schools with high incidents of student discipline, high numbers of minority students, and high numbers of students receiving free and reduced lunch.
4. School districts should review their discipline policies and how it impacts minority students and students from low SES. These students should not receive special accommodations as it relates to disciplinary infractions; however, school districts must be sensitive to students' culture differences and environmental challenges faced by students in low SES communities.

5. School districts should develop staff development programs that improve classroom management skills of teachers who frequently refer students to the office for classroom disorder.
6. School districts should provide diversity training for staff members who work in schools with a high population of minority students.
7. School districts should develop instructional programs that focus on improving reading and mathematics skills for their middle school students.
8. School districts should develop programs that focus on the needs of minority and low SES students.

Recommendations for Future Studies

The recommendations for further studies in the area of student discipline and student achievement are as following:

1. It is recommended that this study be replicated on the state level.
2. It is recommended that this study be replicated using the student achievement pass percentage on state-wide assessment tests by gender as the independent variable.
3. It is recommended that this study be replicated using the student achievement pass percentage on state-wide assessment tests by race/ethnicity as the independent variable.
4. It is recommended that this study be replicated using the student achievement pass percentage on state-wide assessment tests by SES as the independent variable.
5. It is recommended that this study be replicated using different incidents of student discipline such as fights, bullying, and gang activity.

6. It is recommended that this study be replicated using states that are similar in their number of school districts and geographical area.
7. It is recommended that this study be replicated using another four state region.
8. It is recommended that this study be replicated disaggregating student achievement by SES and race/ethnicity.
9. It is recommended that this study be replicated on the national level using the National Assessment of Education Progress (NAEP) assessment instead of state-wide assessment.

Limitations

Any generalizations drawn from this study should consider the following limitations:

1. The state's achievement pass percentage range was established by each state respectively. For example, one state may consider 300 as pass advanced and another state may consider 300 as failing.
2. Each school district must report their incidents of student discipline as required by their respective states. However, it is possible for one school district to report fewer incidents of violent student behaviors whereas another school district may assign a less severe code to a violent behavior to avoid being identified as a persistently dangerous school. In addition, one school might be more aggressive in their dealings with how they deal with student discipline than another school.
3. Schools within school districts may vary in their due diligence in reporting incidents of student discipline. For example, what may be considered as

bullying in one school may be considered horseplaying or disruption in another school.

4. This study does not take into consideration the geographical differences between states and school districts within states. For example, several school districts contained one or two reporting schools. The differences in the number of schools in each school district were not considered in this study.
5. Each school district's school board develops their individual policies on how administrators should handle incidents of student discipline. This study does not take those differences into consideration.
6. The four states used in this study were selected because they report similar data when reporting incidents of discipline, crime, and violence. However, the method of reporting and some of the discipline categories that each state required their school districts to report were different. For example, one state did not have a classroom disruption category, or classroom disruption may be included in another category such as disrespect or disobedience. This study does not take this difference into consideration.

Reflections

The findings in this study supported past research as expected. Past researchers have indicated that SES is a predictor for student achievement. Additionally, researchers have stated that African American students do poorly on achievement tests, which causes the achievement gap between African American and Caucasian students. It is not surprising that this study supports those findings. However, it is surprising that there is no significant relationship between incidents of student discipline and student achievement by gender. Another surprise in

this study was the achievement pass percentage in each cluster. I expected a higher pass percentage in eighth grade reading and eighth grade mathematics across all clusters. These data indicates the need for all school districts, regardless of what state that school district is in, need to concentrate on reading and mathematics skills for middle school students.

The most difficult task in conducting this study was the collection of the data to create the data matrix. Data obtained from each state's department of education website included incidents of student discipline, free and reduced lunch, race/ethnicity, gender, total student membership, and pass percentages in reading and mathematics. On several occasions the data had to be calculated by hand prior to entering the raw number into the Excel spreadsheet.

In this study the crime and discipline reports for each state provided raw data that included other discipline categories beyond the four used in this study. It was decided early during the study to include the data from various discipline sub-categories to establish the total number of incidents used. For example, violence included the compilation of all incidents of violence reported on school grounds. This included assaults, physical altercation, intimidation, robbery, sex offenses, threats of bodily harm, harassment, bullying, and gang activity. These data were hand calculated prior to entering these data into the Excel spreadsheet. The enormity of this task was overwhelming.

Within several categories used in this study states reported these data by school. In order to obtain the total number needed in this study, these data had to be hand-calculated before these data could be entered into the Excel spreadsheet. For example, gender was reported by schools within districts. Like the incidents of student discipline, these data were calculated by hand in order to obtain the total that was re-scaled to a per-pupil scale of 100.

To enter this information for 1,108 school districts required tremendous diligence, dedication, and determination—skills that were maintained throughout the research process. Even though the data collection process was enormous and at times stressful, the experience was enlightening.

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Appendix A

Cited Research: Zero Tolerance Towards School Violence

Table 1

Zero Tolerance towards School Violence

Author	Date	Focus of Study	Data Source	Population	Findings
Skiba and Peterson	2000	Perceptions in school violence and discipline	Synthesis of past research.	Past literature on disciplinary practices as a result of zero tolerance.	Little evidence that zero tolerance procedures and policies improve school safety. Little data related to the cause of school violence and factors that prevent school violence
Brener, Lowry, and Barrios	2004	Changes in violent-related behaviors in public schools from 1999-2003	National Survey	Secondary schools in all 50 states. A three stage review.	Decline in physical fights. Decline in weapons on school property. No change in student threats. Increase in students not attending school because fear for their safety
United States DOE	2004	Principals' perception of school safety	FRSS Survey	900 principals across the nation	1,466,000 violent incidents occurred in public schools. 71% of schools reported experiencing violent crimes on school grounds. 36% reported the need to contact their local police department

Appendix B

Cited Research: Incidents of Student Discipline Documentation

Table 2

Incidents of Student Discipline Documentation

Author	Date	Focus of Study	Data Source	Population	Findings
Skiba, Peterson, and Williams	1997	Disciplinary practices in middle schools	Discipline data from selected school districts	Middle schools located in a urban Midwestern school district	Most behaviors occurred in the classroom Disobedience is the most frequent infraction African American students are referred more frequently Students receiving free or reduced lunch are more likely to receive referrals
Skiba, Michael, Nado, and Peterson	2002				African American students were most likely to receive free or reduced lunch
Nichols	1999	An exploration of discipline and suspension data	SMART program-discipline database	Large urban school district in the Midwest	40% of discipline infractions were committed by minority students. Found no relationship between SES and student behavior Found a correlation between SES and minority students

Discipline problems
occurred most frequently
in the classroom

Appendix C

Cited Research: Responses to Incidents of Student Discipline

Table 3

Responses to Incidents of Student Discipline

Author	Date	Focus of Study	Data Source	Population	Findings
Killion	1998	Most effective methods used by administrators	Questionnaire and telephone interviews	Indiana public school principals	Alternative schools, OSS, and Saturday school were the most effective methods used Student tardiness was the number one discipline problem
Sprague, Walker, Golly, White, Meyers, and Shannon	2001	Alternative programs for student discipline	Treatment-comparison analysis	9 treatment schools compared to 6 non-treatment schools	Limited improvement in school-wide discipline and school safety in treatment schools
Christle, Nelson, and Jolivette	2004	Suspension rate	Mix-method Three stage analytical process	161 middle schools in Kentucky	Suspensions do not deter student behavior SES and ethnicity of students are related to suspension rates

Appendix D

Cited Research: The Effect of Student Discipline on Student Achievement

Table 4

The Effect of Student Discipline on Student Achievement

Author	Date	Focus of Study	Data Source	Population	Findings
Rodney, Crafter, Rodney, and Mupier	1999	Variables that contribute to grade retention among African American males	Children's Structured Assessment for the Genetics of Alcoholism survey	243 African American 13-17-year-old males in a Mid-western city	Number of suspensions, conduct disorder, and lack of discipline in the home were found to be related to grade retention Physical aggression was the most common infraction Half of the males who dropped out of school had been suspended at least once
Fleming, Haggerty, Catalano, Harachi, Mazza, and Gruman	2005	Characteristics that predict problem behaviors in students	Surveys	Students who were involved in the Raising Healthy Children Project in 10 public schools in a Pacific Northwest school district	Mental instability was found to be a predictor of grades but not test scores Alcohol and cigarette use was associated to test scores Negative peers were positively associated to students' antisocial behaviors, test scores, and poor grades

Zentner	2001	The relationship between classroom discipline and student achievement in grade eight	Wisconsin state-wide test and Information and incidents of discipline from the state's Information Network for Successful Schools	569 schools with eighth grade students in 426 school districts in the state of Wisconsin	Negative correlation exists between eighth grade student discipline and student achievement. Incidents of discipline were negatively correlated to student achievement at the minimal and proficient levels.
Smith	2005	To determine if a school's climate affects student achievement	Virginia's state-wide assessment test and incidents of discipline from the state-wide discipline, crime and violence report	1,829 schools in 132 school districts in the Commonwealth of Virginia	A relationship was found between school climate and student achievement; the number of conduct infractions and student achievement; student aggression and student achievement; and SES and student achievement. The number of student infractions and low SES students were found to be predictors for student achievement.

Raw data of school districts within the five clusters is available upon request.

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