

**THE IMPACT OF DOWNSIZING ON STUDENT ACHIEVEMENT AS
REPORTED IN THE ACADEMIC EXCELLENCE INDICATOR SYSTEM
IN NORTH EAST INDEPENDENT SCHOOL DISTRICT
IN SAN ANTONIO, TEXAS**

A Record of Study

by

DONNA MILLER NEWMAN

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

December 2007

Major Subject: Educational Administration

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Approved by:

| | |
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ABSTRACT

The Impact of Downsizing on Student Achievement as Reported in the Academic Excellence Indicator System in North East Independent School District in San Antonio, Texas. (December 2007)

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This study determined the impact of downsizing on student achievement as reported in the AEIS database for the 10 downsized elementary schools in North East Independent School District (NEISD). Ten existing elementary schools lost students and teachers to four new schools that opened in 2005. Conclusions have been made regarding the impact of downsizing at these ten existing feeder schools on student achievement.

The population of this study were students enrolled in third, fourth, and fifth grades at the ten downsized elementary campuses. Research questions were analyzed using an Independent Sample t test and the Pearson Product Moment Correlations to examine whether there was a significant difference between the variables and student achievement and correlations between student achievement and changes in teacher demographics. Based on the findings of this study, the following recommendations are provided:

1. Total tested student population and White subpopulation TAKS scores returned statistically significant improvement at the ten elementary campuses in the area of reading “met standards” after downsizing.
2. The Hispanic subpopulation returned statistically significant improvement in the area of reading “commended performance” after downsizing.
3. The overall tested student population and the Hispanic subpopulation returned statistically significant in the area of mathematics “met standards” after downsizing.
4. The overall tested student population and the Hispanic and White subpopulations returned statistically significant improvement in the area of mathematics “commended performance” after downsizing.
5. The African American subpopulation was the only population in this study whose student achievement mean declined from 2005 to 2006 in the areas of reading “met standards” and mathematics “commended performance.”
6. The African American subpopulation was the only population in this study to show a significant negative correlation between teacher years of experience and student achievement in “commended performance” for reading and mathematics prior to downsizing.

DEDICATION

The years spent pursuing this goal is dedicated to my entire family. My late father, Morley Lester Miller, always stressed the importance of a higher education and continually challenged me to reach a little higher. While he did not get to see me accomplish my latest goal, he was always with me in spirit. My sons, Thomas and Daniel, helped me keep priorities in the right order. My mother, Anna Miller, and sister, Carri Elliott, shared my anxieties and achievements throughout the journey. My brothers, David and Kenny Miller, inspired me in their own special way. And no matter how tired he was, Brent was always there to help make everything a little bit better.

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*A thankful heart is not only the greatest virtue, but the parent of all other virtues.
~ Cicero*

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I would like to thank Dr. Mark Scheffler, who insisted that Texas A&M was the only school worthy of me and would not provide a reference for any other. His confidence, wit, and wisdom have kept me grounded and facing into the wind instead of away from it.

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I am equally indebted to my committee, each of whom replaced an individual I previously thought irreplaceable: Dr. Virginia Collier, who co-chaired my committee and provided such depth and genuine desire to help; Dr. John Hoyle, a co-chair and professor of one of my favorite courses; Dr. Alvin Larke, who provided great insight and encouragement; and Dr. Kim Dooley, who gave of her time as the eleventh-hour addition to the team.

I give special thanks for my colleagues and friends—Bobbie Turnbo, Gloria Canada, and Sean Maika; fellow doctoral candidates with whom I have shared equal joys and frustrations. We laughed together to keep our sanity, challenged one another to explore deeper, and grew in knowledge and wisdom through mountains conquered. Your inspiration was a blanket, and your friendship is cherished forever.

TABLE OF CONTENTS

| | Page |
|---|------|
| ABSTRACT | iii |
| DEDICATION..... | v |
| ACKNOWLEDGEMENTS..... | vi |
| TABLE OF CONTENTS | vii |
| LIST OF TABLES..... | ix |
| CHAPTER | |
| I INTRODUCTION..... | 1 |
| Statement of the Problem | 3 |
| Purpose of the Study..... | 4 |
| Research Questions..... | 5 |
| Operational Definitions | 5 |
| Assumptions | 7 |
| Limitations..... | 7 |
| Significance of the Study..... | 7 |
| Record of Study Contents..... | 8 |
| II REVIEW OF LITERATURE | 10 |
| Accountability | 10 |
| Student Achievement..... | 11 |
| Climate, Collaboration, and Trust | 15 |
| Leadership and Climate | 19 |
| Teacher Quality and Hiring | 22 |
| School Size | 25 |
| Summary of Literature Review | 28 |
| III METHODOLOGY | 30 |
| Operational Definitions | 30 |
| Population..... | 32 |
| Instrumentation..... | 36 |
| Procedures | 37 |

| CHAPTER | Page |
|--|------|
| Data Analysis..... | 38 |
| IV ANALYSIS OF DATA..... | 40 |
| Introduction | 40 |
| Analysis of Research Questions | 41 |
| Summary of Findings | 61 |
| V SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS..... | 63 |
| Research Question 1 | 64 |
| Research Question 2 | 68 |
| Recommendations | 71 |
| REFERENCES | 75 |
| VITA..... | 82 |

LIST OF TABLES

| TABLE | Page |
|---|------|
| 1. Total Student Population from 2004-2005 to 2005-2006 School Year | 33 |
| 2. Total Number of Tested Students and Number of Students by Subpopulations from 2004-2005 to 2005-2006 School Year | 34 |
| 3. Total Number of Tested Students and Number of Tested Students by Subpopulations at the 10 Downsized Elementary Schools in North East Independent School District in San Antonio, Texas | 35 |
| 4. Total Number of Teachers, Number of Teachers by Ethnicity, and Teacher Years of Experience at Each of the 10 Downsized Campuses from 2004-2005 to 2005-2006 School Year | 35 |
| 5. Paired Samples T-Test with Mean, Standard Deviation, Standard Error of Mean, T-Value, Degrees of Freedom, and Significance for Students Meeting Standards in Reading in 2005 Compared to 2006 at the 10 Downsized Campuses in North East Independent School District in San Antonio, Texas | 42 |
| 6. Campus Number (n), Mean Score and Standard Deviation for All Students Meeting Standards in Reading Prior to Downsizing (2004-2005) and After Downsizing (2005-2006) at the Elementary Campuses in North East Independent School District in San Antonio, Texas | 43 |
| 7. Paired Samples T-Test, Degrees of Freedom, and Significance for All Students Meeting Standards in Reading at the Elementary Campuses in North East Independent School District in San Antonio, Texas | 44 |
| 8. Campus Number (n), Mean Score, and Standard Deviation for White Students Meeting Standards in Reading Prior to Downsizing (2004-2005) and After Downsizing (2005-2006) at the Elementary Campuses in North East Independent School District in San Antonio, Texas | 44 |

| TABLE | Page |
|--|------|
| 9. Paired Samples T-Test, Degrees of Freedom, and Significance for White Students Meeting Standards in Reading at the Elementary Campuses in North East Independent School District in San Antonio, Texas | 45 |
| 10. Paired Samples T-Test with Mean, Standard Deviation, Standard Error of Mean, T-Value, Degrees of Freedom, and Significance for Students Receiving Commended Performance in Reading in 2005 Compared to 2006 at the 10 Downsized Campuses in North East Independent School District in San Antonio, Texas | 46 |
| 11. Campus Number (n), Mean Score, and Standard Deviation for Hispanic Students Receiving Commended Performance in Reading Prior to Downsizing (2004-2005) and After Downsizing (2005-2006) at the Elementary Campuses in North East Independent School District in San Antonio, Texas | 46 |
| 12. Paired Samples T-Test, Degrees of Freedom, and Significance for Hispanic Students Receiving Commended Performance in Reading at the 10 Elementary Campuses in North East Independent School District in San Antonio, Texas | 47 |
| 13. Paired Samples T-Test with Mean, Standard Deviation, Standard Error of Mean, T-Value, Degrees of Freedom, and Significance for Students Who Met Standards in Mathematics in 2005 Compared to 2006 at the 10 Downsized Campuses in North East Independent School District in San Antonio, Texas | 48 |
| 14. Campus Number (n), Mean Score, and Standard Deviation for All Students Meeting Standards in Mathematics Prior to Downsizing (2004-2005) and After Downsizing (2005-2006) at the Elementary Campuses in North East Independent School District in San Antonio, Texas..... | 48 |
| 15. Paired Samples T-Test, Degrees of Freedom, and Significance for All Students Meeting Standards in Mathematics at the Elementary Campuses in North East Independent School District in San Antonio, Texas | 49 |

| TABLE | Page |
|--|------|
| 16. Campus Number (n), Mean Score, and Standard Deviation for Hispanic Students Meeting Standards in Mathematics Prior to Downsizing (2004-2005) and After Downsizing (2005-2006) at the Elementary Campuses in North East Independent School District in San Antonio, Texas | 49 |
| 17. Paired Samples T-Test, Degrees of Freedom, and Significance for Hispanic Students Meeting Standards in Mathematics at the Elementary Campuses in North East Independent School District in San Antonio, Texas | 50 |
| 18. Paired Samples T-Test with Mean, Standard Deviation, Standard Error of Mean, T-Value, Degrees of Freedom, and Significance for Students Who Received Commended Performance in Mathematics in 2005 Compared to 2006 at the 10 Downsized Campuses in North East Independent School District in San Antonio, Texas..... | 50 |
| 19. Campus Number (n), Mean Score, and Standard Deviation for All Students Receiving Commended Performance in Mathematics Prior to Downsizing (2004-2005) and After Downsizing (2005-2006) at the Elementary Campuses in North East Independent School District in San Antonio, Texas | 51 |
| 20. Paired Samples T-Test, Degrees of Freedom, and Significance for All Students Receiving Commended Performance in Mathematics at the Elementary Campuses in North East Independent School District in San Antonio, Texas | 52 |
| 21. Campus Number (n), Mean Score, and Standard Deviation for Hispanic Students Receiving Commended Performance in Mathematics Prior to Downsizing (2004-2005) and After Downsizing (2005-2006) at the Elementary Campuses in North East Independent School District in San Antonio, Texas | 52 |
| 22. Paired Samples T-Test, Degrees of Freedom, and Significance for Hispanic Students Receiving Commended Performance in Mathematics at the Elementary Campuses in North East Independent School District in San Antonio, Texas..... | 53 |

| TABLE | Page |
|---|------|
| 23. Campus Number (n), Mean Score, and Standard Deviation for White Students Receiving Commended Performance in Mathematics Prior to Downsizing (2004-2005) and After Downsizing (2005-2006) at the Elementary Campuses in North East Independent School District in San Antonio, Texas | 53 |
| 24. Paired Samples T-Test, Degrees of Freedom, and Significance for White Students Receiving Commended Performance in Mathematics at the Elementary Campuses in North East Independent School District in San Antonio, Texas..... | 54 |
| 25. Teacher Years of Experience at Each of the 10 Downsized Elementary Campuses Before Downsizing (2004-2005) and After Downsizing (2005-2006) in North East Independent School District in San Antonio, Texas | 55 |
| 26. Mean of Teacher Years of Experience at Each of the 10 Downsized Campuses Before Downsizing (2004-2005) and After Downsizing (2005-2006) in North East Independent School District in San Antonio, Texas | 56 |
| 27. Pearson Product Moment Correlations, Significance and N (10) Measuring Degree of Covariance between Student Achievement and Teacher Years of Experience in “Met Standards” and “Commended Performance” in Reading and Mathematics Before Downsizing (2004-2005) and After Downsizing (2005-2006) at the 10 Elementary Schools in North East Independent School District in San Antonio, Texas | 58 |
| 28. Pearson Correlation (r), N (10), and Significance for African America Students Receiving Commended Performance in Reading at the 10 Downsized Elementary Schools in North East Independent School District in San Antonio, Texas | 60 |
| 29. Pearson Correlation (r), N (10), and Significance for African America Students Receiving Commended Performance in Mathematics at the 10 Downsized Elementary Schools in North East Independent School District in San Antonio, Texas | 61 |

| TABLE | Page |
|--|------|
| 30. Total Number of Tested Students and Number of Tested Students by Subpopulations at the 10 Downsized Elementary Schools in North East Independent School District in San Antonio, Texas..... | 65 |
| 31. Paired Samples T-Tests Were Used to Compare Student Achievement on the Texas Assessment Knowledge and Skills (TAKS) Assessment Prior to Downsizing (2005) and After Downsizing (2006) at the 10 Downsized Campuses in North East Independent School District in San Antonio, Texas | 66 |
| 32. Changes in Teacher Ethnicity Before and After Downsizing at the 10 Elementary Campuses in North East Independent School District in San Antonio, Texas | 69 |

CHAPTER I

INTRODUCTION

Recent research has explored the role student attitudes have on their academic success in school (Akey, 2006). Akey (2006) suggested that when students perceive supportive relationships in school, they have a more positive attitude and are motivated to do well. Akey stated that when there is a positive relationship between the student and the teacher, the result is higher levels of student engagement and greater academic success. Students want to learn from teachers that care about and respect them (Pillsbury, 2005).

In an article titled “Why Teachers Matter” (2006), research indicated that teacher quality has more influence on student achievement than does class, race or school. Considerable evidence also demonstrates that capable, well-prepared teachers have the largest influence on student learning and that effective school leaders make it a priority to keep good teachers (Darling-Hammond, 2003). Darling-Hammond, executive director of the National Commission on Teaching and America’s Future, emphasized that the most important factor that determines student achievement is teacher qualification. Boyer (as cited in Pritchett-Johnson, Livingston, Schwartz, & Slate, 2000) found the positive relationships that have formed between teachers and students are characteristic of effective schools.

The style and format for this record of study follow that of the *Journal of Educational Research*.

A primary dimension of a school's culture is collegiality (The Clearing House, 2004). How well teachers work with students depends on how well teachers work with other teachers (Hargreaves, 1997). Wheelan and Kesselring (2005) suggested that the manner in which teachers work together significantly effects student success. More focus is being placed on teams of teachers working effectively together to improve student learning. Results of their study indicate effective teams of teachers display a high level of trust, cooperation and an intense work ethic. Therefore, faculty who have collaborated with one another more extensively over time tend to be more committed than the newer members to a school to making the improvements in teaching methods and curriculum that are necessary to improve student outcomes. Wheelan and Kesselring also cited a growing amount of research indicating that improving student achievement is closely related to faculty collegiality, faculty collaboration and school climate.

Ellis (1998) stated that principals can have a positive effect on a school's climate by being knowledgeable about the complexities of stakeholder interactions and encouraging participation in the decision making process. Studies have shown, moreover, that there is a direct relationship between student learning and principal leadership through "the principal's influences on internal school process." Smith and Andrews (1989) found that teaching improves when principals focus on a positive school climate, which in turn, improves student learning.

Schmoker (1996) stated that improved student learning is dependent on creating a climate in which all stakeholders are committed to specific goals. These goals show teachers areas for improvement, assist teachers in decision making, allow

teachers to gauge student success and provide opportunities for professional dialogue. Wheelan and Kesselring (2005) suggested that mature faculties are more capable of goal achievement. Various studies (Pritchett et al., 2000) have found that successful schools tend to have stable student populations as well as staff stability. Wheelock (2003) suggested that population shifts occurring when enrollment boundaries change can adversely affect student achievement. By planning strategically for the future, school leaders can help ensure theirs is an effective school (Pritchett et al., 2000).

Statement of the Problem

Research conducted by the National Clearinghouse for Educational Facilities (2003) indicated that by the year 2020, the number of school aged children is expected to increase by 6% and that by the year 2030, student enrollment will increase to 60 million. Thousands of schools must be built in order to accommodate school-age children. The demand for new schools will be unprecedented in the history of the United States.

When new schools are built, there is inevitably a change in enrollment boundaries. Changing school boundaries often creates controversy between the families of school-aged children and the local school district (La Crosse Public Library, 2004). Schools that lose students to new schools often report loss in their PTA membership as well (Scott, 2003).

When students transfer to a newly opened school, it sometimes becomes necessary to downsize the older elementary campuses. Studies show that when teachers leave in large numbers, filling the vacancies with highly qualified teachers

becomes a daunting task (Darling-Hammond, 2003). School districts often have regulations in place that limit the number of teachers who can be taken from any one campus to staff new schools (North East Independent School District, 2007a).

Purpose of the Study

The North East Independent School District currently has approximately 60,000 students enrolled and is growing at a rate of 1600 new students per year. Seven new elementary schools have opened in the past 10 years to alleviate overcrowded conditions at the older elementary schools. By the year 2011, the student population is expected to reach 70,000. In 2003 voters passed a \$449 million dollar bond proposal that included building four new elementary campuses. These four schools opened in August, 2005. Ten existing elementary schools lost numerous students, teachers, and community members to the new schools (North East Independent School District [NEISD], 2007b). Unfortunately, research on the effects of the subsequent impact on the campus and principal who will be losing students and teachers to the new school is very limited (White-Hood, 2002).

The purpose of this study was to examine the impact of downsizing on student achievement as reported by the Academic Excellence Indicator System of selected elementary schools in an urban/suburban school district in San Antonio, Texas. Conclusions have been made as to the effectiveness of district policies regarding staffing and boundary change procedures.

Research Questions

The study addressed the following questions:

1. Do changes in selected student demographics impact test scores as reported by AEIS in existing elementary schools which have been reduced in size by new campuses openings in North East Independent School District in San Antonio, Texas?
2. Do changes in selected teacher demographics impact test scores as reported by AEIS in existing elementary schools which have been reduced in size by new campuses openings in North East Independent School District in San Antonio, Texas?

Operational Definitions

Academic Excellence Indicator System: The Academic Excellence Indicator System (AEIS) reports information gathered from student performance in each school and district in Texas. Test results, attendance information, school staff and district finances are included in this annual report made available every fall by the Texas Education Agency (TEA) (2007b).

Commended Performance: Acknowledgement given by TEA to students who achieve mastery level in mathematics, reading, social studies, science and/or writing on the Texas Assessment of Knowledge and Skills (TAKS).

Downsizing: The reduction in numbers of teachers and students at older elementary schools caused by the opening of new elementary schools.

Existing Feeder Schools: Ten elementary campuses housing grades kindergarten through fifth grade in North East Independent School District that lost students and faculty to the new elementary schools.

Newly Opened Elementary Schools: The four elementary schools housing grades kindergarten through fifth grade in the North East Independent School District that opened in the August, 2005.

North East Independent School District (NEISD): A school district of approximately 140 square miles located in the north central and northeast areas of Bexar County, TX. NEISD is comprised of approximately 60,000 students and 7973 employees.

Public School Principal: The instructional leader of a school who shall be provided with adequate personnel assistance and training to assume the instructional leader role in a public school (Bender, 2002).

Student Achievement: The number of third, fourth and fifth grade students passing TAKS (Texas Assessment of Knowledge and Skills) during the 2005-2006 school year. Student passing rates are provided in the areas of reading, mathematics, writing and science.

Texas Assessment of Knowledge and Skills (TAKS): A criterion referenced test given to third through tenth grade students in the areas of reading, mathematics, writing, science and social studies.

Assumptions

1. The respondents surveyed will understand the scope of the study, the language of the instrument, will be competent in self-reporting and will respond objectively and honestly.
2. Interpretation of the data collected accurately reflects the intent of the respondent.
3. The methodology proposed and described here offers a logical and appropriate design for this particular research project.

Limitations

1. This study is limited to the selected number of elementary schools with the North East Independent School District.
2. This study is limited to the information acquired from the literature review and survey instruments.
3. Findings may be generalized only to existing feeder elementary schools within the North East Independent School District.

Significance of the Study

Research on effective schools frequently mentions that a school's climate is one of the most important factors for improved student achievement (Baluch & Malone, 1994). When a district or campus is experiences a major change, it is important that a school's climate be given significant attention (Best Practice Briefs, 2004). Sergiovanni and Starratt (1993) stated that because a positive climate leads to

a higher degree of trust, people will accept change more readily because they are able to discuss their concerns.

New schools must be built in order to keep enrollment numbers down. Research (Best Practices Brief, 2004) indicated that students in smaller schools do better academically than students in larger schools due to increased opportunities for teacher/student interaction. The change that comes about when new schools open is inevitable. Currently, there is little data available on the subject of how the opening of new elementary schools affects the existing elementary feeder schools.

In May 2007, the North East Independent School District voters passed a \$498 million bond package. The total bond package of \$157.5 million will build four elementary schools. Additionally, money is allocated towards the purchase of land and subsequent construction of a fifth new elementary as well as a middle school. Information from the data collected and analysis of that data may help contribute to a blueprint for developing policies in the areas of staffing and boundary changes that will affect both the new schools and the existing schools in the North East Independent School District.

Record of Study Contents

This record of study has been divided into five major chapters. Chapter I contains the introduction, a statement of the problem, the purpose of the study, two research questions, operational definitions, assumptions, limitations and the significance of the study. Chapter II contains a review of pertinent literature. The procedures and methodology used for the data collection are described in Chapter III.

Chapter IV provides an analysis of the data collected for this study. The final chapter, Chapter V presents the researcher's conclusions and summary. In addition, the researcher discusses the implications and recommendations for future study.

CHAPTER II

REVIEW OF LITERATURE

Accountability

Beginning primarily in the 1990s, pressure was placed on school districts to prove higher academic achievement for its students by creating a system of accountability (Hoy & Miskel, 2005). Today, almost all 50 states have a standards-based accountability system to demonstrate student growth. Elmore (2002) described one in which schools, school districts and students are responsible for academic achievement as the “dominant form” of educational accountability.

Student achievement is currently being measured across the nation through the use of high stakes testing (Green, 2001). Standards are developed to identify the subject matter to be mastered while evaluations (usually in the form of standardized tests) are created to test students’ knowledge (Hoy & Miskel, 2005). The “No Child Left Behind Act” requires that student testing in reading and mathematics be conducted annually in grades 3 through 8. The testing is often controversial with many educators questioning the validity of the tests given. “No Child Left Behind” is designed to expose the differences in state or national test scores between groups of students. Known as the “achievement gap,” the differences in achievement scores state and national testing exposes is usually between white students and minority students (Anderson, Medrich, & Fowler, 2007).

A policy review prepared for the Texas Education Agency, Achieve, Inc. (2002) stated that Texas has made tremendous gains in raising student standards and

achievements. The report stated that Texas has served as a model for other states in the area of educational reform. It was one of the first states to test annually in virtually every grade. The report contended that Texas's experience with reporting student achievement by ethnic groups and socioeconomic status, along with its annual testing, guided the composition of the No Child Left Behind Act.

Student Achievement

There are many factors outside teacher and school control that affect student learning (Guskey, 2005). Over the years, researchers have linked different factors that may affect student achievement in schools (Schreiber, 2002). Student attitude, gender, parent education, school size, quality of instruction, and student socio economic status (SES) are all variables that can have an impact on student achievement.

Historically, students coming from impoverished families have not performed as well as their white middle-class counterparts on state and/or national tests (Berliner, 2006). It was thought by early researchers (Coleman et al., 1966; Jencks, 1972) that a family's background and socioeconomic level was the most important predictor of student success in the schools. Hoy, Tarter, and Hoy (2006) agreed with this argument up to a point. They have identified three factors that have the ability to negate socioeconomic implications: academic emphasis of the school, faculty's trust in students and parents, and efficacy of the faculty as a whole. Collective efficacy is the belief by the entire faculty that those who work in the school have the ability to have a positive impact on student achievement.

Recent research has explored the role that students' attitudes have on their

academic success in school (Akey, 2006). Akey (2006) suggested that when students perceive supportive relationships in school, they have a more positive attitude and are motivated to do well. She stated that when there is a positive relationship between the student and the teacher, the result is a higher level of student engagement and greater academic success. Pillsbury (2005) suggested that students want to learn from teachers who care about, and respect, them. Cothran and Ennis (1997) proposed that student engagement is more likely to occur when students perceive a personal connection to the school. Ellison (2001) argued that children need to have trusting, positive relationships with their teachers in order to make the emotional connection necessary for learning to occur. Students will even engage in academic activities they are not initially interested in if they perceive their teacher truly cares for them (Cohen, 1999).

Student achievement is thought to improve when students have a sense of belonging and feel the school values them (Atkinson & Feather, 1967). Students tend to be successful in school when they “buy in” to the significance of education and realize the importance of engagement in the educational process (Berends, 1992). Osterman (2000) defined “belongingness” as having a sense of community, class membership, identification and support. Goodenow (1992) defined this sense of belonging as having acceptance and support in the school environment. Goodenow further explained that in order to have a sense of belonging, students must also participate in the shared educational goals of his/her classroom.

A study by Ma (2003) concluded that school climate was more important than school curriculum in shaping students’ sense of belonging, mainly because school

personnel have direct control over the school climate. Voelkl (1995) examined the relationship between student academic achievement and their perception of school warmth. In this study, six student ratings between teachers and students were measured, and achievement tests were administered to the students. Voelkl included the concept of participation (preparation, absent/tardy, attendance, preparation, disengagement and misbehavior) in the study. His findings concluded that there was a relationship between a student's perception of warmth and his/her academic achievement.

Educators in successful school districts have redefined instructional strategies with emphasis on the way personnel interacted with one another (Green, 2001). Student achievement was the primary target in these schools with all personnel involved in solving problems using high levels of collaboration and cooperation. This collective thinking fostered an environment which allowed educators to work together to find the best ways to improve student performance. In these schools, a climate of mutual respect and trust was established that allowed educators to explore best practices for their campus. Principals shared their vision for improved student achievement with school stakeholders and provided information to teachers which allowed them to make informed decisions about the learning.

York-Barr and Duke (2004) suggested teacher leadership is a component for creating a more professional working environment. Teachers are the experts about classroom pedagogy and break down the isolation so common in today's schools by engaging others on their campus in effective teaching practices. Teachers become the decision makers on what constitutes best instructional practices and lead other

colleagues to improve learning and teaching through mentoring, modeling effective practices, and collaborate.

Teachers in these effective schools report that they no longer work in isolation. Classrooms are opened up to allow all stakeholders access to effective practices as well as those practices that were ineffective. Watkins (2005) reported that “action research,” (looking in classrooms for effective practices) can immediately answer those problems relevant to today’s educators. Once an atmosphere of trust has been established, people are willing to try new methods and learn from their mistakes (Green, 2001). Sharing results with the entire learning community can then aid the shared decision making process by allowing educators to decide which professional development activities might be beneficial (Watkins, 2005).

Michael Fullan (2005) stated that when schools and districts focus solely on the accountability piece as required in the federal mandate of No Child Left Behind, there can be some improvement in student achievement scores. He argued that this improvement is not sustainable unless leaders at the state, district and campus level are able to engage in what he calls “capacity building.” Fullan defined *capacity building* as, “developments that increase the collective power in the school in terms of new knowledge and competencies, increased motivation to engage in improvement actions, and additional resources.” One important strategy cited in Fullan’s article suggests that engaging in effective “capacity building” requires the participation of both administrators and teachers to collectively engage in new learning.

Climate, Collaboration, and Trust

A primary dimension of a school's culture is collegiality (The Clearing House, 2004). A school's climate will determine how faculty and students are able to handle external events. A healthy climate is one in which the perceptions of stakeholders associated with the school are positive. Organizational climate will influence teacher behaviors and attitudes and it is therefore critical that leaders understand a school's climate (Hoy & Miskel, 2005). Hoy and Miskel indicated that campus environment effects the organizational functioning in schools. While school administrators attempt to minimize external events, "environmental uncertainty" will have a potentially powerful impact on a school's climate. The level of uncertainty is determined by the information available to educators about the changes in environmental conditions.

Best Practicing Briefs (2004) included faculty relations and school-community relations as key components of a school's climate. Research continues to link faculty collaboration and collegiality, school culture and climate with student achievement (Wheelan & Kesselring, 2005). In their studies, Wheelan and Kesselring found that the manner in which the faculty worked as a group does influence student achievement, especially in high poverty schools. Results of their study indicated that student achievement would improve if the faculty worked to become more cooperative and trusting. These researchers suggest using intervention to develop "high-functioning faculty groups." Rather than focus on individuals, the suggested intervention would focus on the group as a system. Edwards (1995) suggested that teachers will not be able to foster a sense of belonging in schools unless they themselves also feel a strong sense of belonging to the school. Therefore, faculty who

have collaborated with one another more extensively over time, tend to be more committed than newer members of a school to making the improvements in teaching methods and curriculum that are necessary to improve student outcomes. Wheelan and Kesselring (2005) also cited a growing amount of research indicating that improving student achievement is closely related to faculty collegiality, faculty collaboration and school climate.

Brookover et al. (1978) indicated that many of the differences in student achievement at different schools can be attributed to a campus's climate. In describing factors that create a successful school, Marzano, Waters, and McNulty (2005) replaced the concept of climate with "collegiality and professionalism." How well a school's teachers work with students depends on how well teachers work with one another (Hargreaves, 1997).

Gruenert's (2003) study, evaluated the importance collaborative cultures have on student achievement. He cited Fullan and Hargreaves (1996) in defining collaborative school cultures as those in which teacher development was aided through joint support, mutual work, and wide-ranging agreement on educational values. The findings of Gruenert confirmed the available literature on collaborative school environments as these type cultures appear to be conducive to student achievement. Consequently, principals who create collaborative cultures should obtain the benefits of better teacher job satisfaction and classroom performance as well as gains in student performance.

Peterson (1997) found that a staff who works together and expects excellence from one another is a key ingredient to a school that has a strong, positive culture.

Along with collegiality, the campus must believe in student achievement and celebrate not only student accomplishments, but the accomplishments of one another. Focus should be on the traditions and rituals that celebrate the positive aspects of the entire school community, including parents. Finally, Peterson found that these strong campuses are places where “success, joy, and humor abound.”

Brownell, Adams, Sindelar, and Waldron (2006) asserted that the simple act of collaboration is a powerful professional development tool. Teachers will be able to change their instructional practices in meaningful ways when they work together collectively to achieve a common vision. “In collaborative working environments, teachers have the potential to create the collective capacity for initiating and sustaining ongoing improvement in their professional practice so each student they serve can receive the highest quality of education possible” (Pugach & Johnson, 2002).

Sagor (2000) contended that employees working together to achieve their shared vision are key to any successful organization. He further claimed that once everyone understands and accepts the common goal, effective schools have teachers who are given the autonomy to accomplish this goal through various means.

The relationships that define a school’s culture are defined by the relationships the educators have among themselves. Barth (1990) contended that administrators and teachers have the power to either enrich or diminish their schools based on the relationships that have been established on the campus. Lambert (1998) suggested that when an atmosphere of collaboration is established, teachers work to improve the entire school, not merely their individual classrooms. She adds that once

teachers recognize their new roles in the schools, they will begin to see other teachers in a different way based on the skills and contributions they can make to the overall improvement of the school. “As more of who we are becomes exposed, we find more in common with others.”

In his book, *Results Now*, Schmoker (2006) used the term “professional learning communities” to describe collaborative teams of teachers who work together to discuss data and develop plans for improvement. He shared the belief that by working toward a common goal, sharing effective strategies with others on their team and then reflecting and adjusting strategies based on the results, teachers can improve their students’ academic achievement.

Youngs and King (2002) define this organizational capacity as “the collective power of an entire faculty to strengthen student performance throughout their school.” Student achievement is enhanced when there is a strong professional community in a school. A strong professional community exists when the following practices are present: common goals for student achievement, meaningful collaboration among the faculty, in-depth problem solving skills and teacher autonomy. When principals promote social trust between themselves and teachers, school capacity is likely to be strengthened.

Devin Vodicka is a former principal who opened two new schools. He wrote that trust is the single most important element when developing a learning community. Vodicka identified four key factors necessary in establishing a trusting school climate: consistency, communication, compassion and competence (Vodicka, 2006). The level of trust teachers have with the principal will determine the amount

of trust there is between the rest of the stakeholders at a school (Brewster & Railsback, 2003). Trusting relationships between teachers, students and parents improves collegiality and cooperation resulting in improved student achievement (Tschannen-Moran & Hoy, 2000).

Honig and Hatch (2004) described ways schools manage to develop school-wide goals and improvement strategies. Teacher professional learning communities are provided opportunities to establish goals and strategies and then maintain and redirect them accordingly. This is because the educators on campus actively set these goals and “own” them. Honig and Hatch suggested that the maintenance of these goals over time is dependent upon how closely new staff members can relate and contribute to the existing goals of a campus. In citing the work of Lave (1991), Honig and Hatch make the observation that those campuses successful in this type of site-based decision making, carefully manage the exit of faculty and staff in order to “limit depletion of institutional knowledge.”

Leadership and Climate

Peterson and Deal (1998) pointed out that effective school leadership is crucial to creating school culture. When writing on the topic of leadership, Dufour (2004) stated that effective leaders are those who get results not only by focusing on test scores, but who also create caring, collaborative environments. Effective campus administrators take the time to plan ways faculty members can work together interdependently to focus at commonly shared goals.

Lovely (2005) stated that leadership is second only to teaching when

considering factors that contribute to student achievement. Lovely stated it is imperative that the school leader spend time developing and understanding his/her team of teachers in order to offer the best support and guidance. Once the school leader recognizes the talents (or lack of talent) of the people on the campus, they get people in the right roles. Edwards (1995) stressed that school administrators must understand that only when teachers have a sense of belonging to their school, can they foster this membership in their students

Protheroe (2006) found that school leaders can aide in perfecting a collaborative campus by developing processes for teams of teachers to meet and problem solve, provide assistance with decision-making, and understand what professional development activities are needed by the faculty. Peterson and Deal (1998) indicated that effective school leaders are able to understand the school's history and current condition. They stated, "Leaders should know the deeper meanings embedded in school before trying to reshape it," and that by paying attention to the symbolic aspects of their schools, leaders can cultivate a climate for change and success. Ellis (1998) found that by being knowledgeable about the decision making process and the complexities involved with group dynamics, school leaders can have a positive effect on a school's climate. It is important that principals be aware of the shared values and norms among their teachers before trying to instigate new practices in instruction, curriculum or the school's organization (Youngs & King, 2002).

Principal turnover can create serious challenges to mutual commitment and program consistency. Studies have demonstrated the direct relationship between

student learning and principal leadership through “the principal’s influences on internal school process.” When school principals understand the importance of a positive school climate and work toward establishing this type of climate, student learning improves (Smith & Andrews, 1989).

In this collegial atmosphere, administrators are considered team members who will model the expectations. Honaker (2004) found that educators tend to stay in this type of supportive environment where they can continue to improve as well as celebrate successes. Moos (1991) indicated that a sense of community helps teachers feel more satisfied with their work, develops perceptions by students that teachers enjoy their work, and improves staff morale. Fullan (2005) reported one key “driver of reform” is that of establishing a demanding culture in which concern for all stakeholders is joined with high expectations all around to tackle challenging goals. Anderman, Belzer, and Smith (1991) found that when school culture emphasizes recognition, accomplishment, and affiliation teachers tend to be satisfied and committed to the school’s vision. The principal that works to create this kind of working environment help establish high teacher commitment to student learning. Likewise, Firestone, Rosenblum, and Webb (1987) reported that teacher dedication to the educational goals and school climate are close interconnected factors that can be affected by the administrative actions and programs at the school and district levels. “Research on school effectiveness has underscored the importance of teachers’ personal investment and commitment to education in general and to the mission of their own school in particular” (Shann, 1998).

Teacher Quality and Hiring

In an article titled “Why Teachers Matter” (2006), research indicated that teacher quality has more influence on student achievement than does class, race or school. Student responses on the Gallop Youth Survey (Gordon, 2006) have indicated over the past 25 years that quality teaching in the classrooms improves learning. Responses to these surveys also included comments about the relationships between the teachers and students. Students indicated they would work harder for caring teachers who held high expectations for their students. In public surveys such as the Phi Delta Kappa/Gallop Poll (Rose & Gallup, 2003), and another national survey sponsored by *Education Week*, teacher quality was selected as a critical aspect of their children’s education

Kaplan and Owings (2001) stated that quality teachers are the essential component for high student achievement. They further contend that state and federal legislators are recognizing the challenge of attracting highly qualified teachers in order to improve student achievement. Kaplan and Owings (2003) wrote that teacher quality has more influence on student achievement than does ethnicity or family characteristics.

Considerable evidence also demonstrates that capable, well-prepared teachers have the largest influence on student learning and that effective school leaders make it a priority to keep good teachers (Darling-Hammond, 2003). This research also indicates that teacher quality influences student achievement more than student demographics (SES, ethnicity and language background). One study (Wenglinsky,

2000) concluded that of the types of teaching qualities measured, the impact to student achievement was 7 to 10 times as great as that of class size.

Teachers tend to gravitate to schools that make it a priority to find, keep and support good classroom teachers. Teachers purposefully seek out schools in which they can learn from their colleagues in order to create student success. In his study of teacher turnover, Ingersoll (2001) discussed the negative impact teacher turnover has on the sense of community and the continuity that is such an important element in successful schools. Mobley (1982) indicated coherence and continuity are important components of effective schools.

Ingersoll raised serious questions regarding the impact teacher attachment has on school performance and community. While it may be beneficial that teachers who do not share the same goals and mission as the school leave, he suggests that turnover rates larger than 25% will more than likely have a negative impact on the school and on student performance. “Teacher turnover can undermine school reforms which require a sustained and shared commitment by school staff” (Voke, 2003). Wheelan and Kesselring (2005) suggested that mature faculties are more capable of goal achievement.

In his book, *Building Engaged Schools*, Gordon (2006) reported that while the selection and development of teachers on the basis of their skills and knowledge is the most dependable way to support student success, the strong relationships that teachers build with students are part of that talent. Hiring the best people is a trademark of outstanding companies (Collins, 2001). In his book, *Good to Great*, Collins (as cited in Gordon, 2006) stated,

In determining the “right people” the good-to-great companies placed greater weight on character attributes than on specific educational background, practical skills, specialized knowledge, or work experience. Not that specific knowledge or skills are unimportant, but they viewed these traits as more teachable (or at least learnable), whereas they believed dimensions like character, work ethic, basic intelligence, dedication to fulfilling commitments, and values are more ingrained. (p. 120)

When hiring, looking for talent should be the primary objective as capable teachers can then be trained with the appropriate knowledge and skills. Gordon suggested that staff development for teachers with limited talent in the classroom is an almost futile endeavor. What matters most is the teacher’s ability to develop relationships with his/her students and create a creative classroom atmosphere, thereby engaging students in the learning. Gordon stated, “Teaching excellence may move through acquired skills, but it springs more fundamentally from talent. Skills may prevent failure, but they can’t move teachers from average to outstanding performance.” It is a mistake to try to change the teachers. A principal should instead recognize the individual’s talents and build upon those talents.

Madsen and Mabokela (2005) contended that school leaders must remember that because of demographic changes in student population, it is important that leaders reflect on their school populations when hiring new faculty. The researchers suggest that, “Schools must strive to correlate the ethnic composition of their faculties with that of their students in order to maintain a healthy school image.” Chemers and Murphy (1995) realized school leaders contend with the challenge of maintaining organizational diversity.

Kaplan and Owings (2001) insisted that principals must “do everything possible to hire the highest quality teachers and then continually enhance teaching

quality.” In contrast to Gordon’s stance, Kaplan and Owings indicated that professional development is necessary to improve ineffective teachers. If improvement does not occur, it is then necessary to get them out of the profession through counseling or non-renewal efforts.

Darling-Hammond, executive director of the National Commission on Teaching and America’s Future, emphasized that the most important factor that determines student achievement is teacher qualification. Boyer (as cited in Pritchett et al., 2000) found the positive relationships that have formed between teachers and students are characteristic of effective schools. Darling-Hammond (2003) reported one principal lamenting the fact that when there is a large number of new teachers to the staff, it meant there was less of a knowledge base and less cohesion among the staff. This principal reported the necessity to repeat staff development each year to recover ground in order to bring the new people on board with the campus philosophies.

School Size

There is a natural predilection in American education toward enormity, and it does not serve schools well.—William J. Fowler, Jr., 1992

In his address to the Education Research Association, Fowler expressed confidence that achievement is “dramatically more equitable” in small schools regardless of students’ SES. He further stated that many schools in the United States are too large to serve students well and that there is a great need in this country for smaller schools, particularly in areas with a high poverty population. Cotton (1996) wrote that

students who attend small schools have grades and problem solving abilities equal to, and in many cases superior to, students attending large schools and finds that large schools actually have a negative impact on low SES and minority students.

As mentioned earlier, the relationships students have with peers and teachers is a determinant affecting student success. Research has found that students develop these relationships much easier in schools with smaller populations (Cotton, 1996). Sergiovanni (1993) addressed the American Educational Research Association and asked that administrators regard schools as a community rather than an organization and consider learning as “nurtured” or “cultivated” rather than a “product.” He claimed an enrollment of 300 as the maximum number to sustain a “true educational community.” Williams (1990) contended that an effective size for elementary schools is between 300 and 400 students. Cotton reported that teachers in smaller schools tend to form teaching teams and are more likely to form relationships with students and community members.

It is in a district’s (and student’s) best interest if school size is kept small. Capps and Maxwell (1999) demonstrated that students attending smaller schools have a greater sense of belonging than those attending larger schools. Their data indicated that bonding between students and their peers and teachers are more likely to occur in smaller schools and they more willing to identify with their schools. A caring and supportive environment in schools is especially important to student outcomes in schools with high levels of student poverty (Battistich et al., 1995).

A student’s sense of membership at a campus will determine the level of engagement he/she has with the instruction taking place (Cothran & Ennis, 1997).

Once a student believes there is a personal connection with the educators on campus, he/she will then try to satisfy the expectations of the school. This sense of community is developed when students not only realize the group will support them and satisfy their needs, but that they themselves are an important component of the group (Osterman, 2000). A study conducted by Goodenow (1991) found a relationship between a strong sense of membership and strong intrinsic value and self-efficacy.

Various studies (Pritchett et al., 2000) have found that successful schools tend to have stable student and staff populations. Wheelock (2003) suggested that population shifts occurring when enrollment boundaries change can adversely affect student achievement. By planning strategically for the future, school leaders can help ensure theirs is an effective school (Pritchett et al., 2000).

North East Independent School District has specific guidelines as to how feeder schools will be downsized with regard to their teacher population. In its policy, NEISD stated, “The focus shall continue to be one of flexibility, whether we deal with the challenge of opening one campus or multiple campuses in one school year. Ultimately, all decisions will be made with the needs of the total district and its students in mind.”

The district’s Executive Staff will provide the principals information regarding the reduction of teachers at each downsized campus. When more than one school opens, the Human Resources Department will study how personnel transfers will affect the existing schools and make a recommendation to the Executive Staff regarding any necessary changes to district policy.

The district places limits on how many teachers a new campus can hire from

any single campus. The campuses impacted by downsizing will first ask for teacher volunteers to transfer to the new school. If not enough volunteer, those teachers with the least years of district experience are to be transferred first.

Summary of Literature Review

Schools today are held accountable for student achievement more than ever before. Specific attention is being given to the differences, or gaps, that exist between the different student ethnic groups including students of poverty. Known as the “achievement gap,” the differences in student scores on state and national tests is usually occurring between white students and minority students. Research also indicates students coming from low income families score lower than those from middle or upper income families.

Recent research suggests that one way to negate the external factors that affect student academic success is having schools where students feel a sense of belonging. Students who exhibit positive attitudes and have positive relationships with school personnel are more likely to have higher levels of engagement resulting in greater academic achievement. A school with positive climate is more likely to build the sense of belonging these students need.

Schools with positive climates have high levels of collaboration between teachers that tend to breakdown the isolation so often occurring in today’s schools. These schools have high degrees of trust between all stakeholders. Teachers are able to cooperate and problem solve issues in order to improve student achievement. Mature faculties who have worked together over a period of time tend to have a

stronger sense of belonging to schools and are more committed to finding ways to improve student success. When focusing on a common goal, teachers are able to work effectively as a team by adjusting instruction and sharing results with their colleagues in order to improve the entire group. School leaders should purposely create these collaborative cultures in order to improve student performance.

Literature indicates that school leaders are essential when creating positive school climate. Effective school leaders encourage collaboration, understand their school culture, and bring out the best in their teachers. Teachers tend to stay at schools where these elements exist. Research shows that good teachers have the largest positive influence on school learning and that effective school leaders make it a priority to keep good teachers.

School size has been found to have an impact on student achievement. The literature reviewed suggests that smaller schools particularly benefit students from low income families and minority students. Williams (1990) contended that an effective size for elementary schools is between 300 and 400 students. Students and teachers at these smaller schools have a greater sense of belonging than those at larger schools resulting in higher levels of engagement.

School stability is another factor affecting student success. High rates of teacher turnover can negatively impact student achievement. When populations shift due to boundary changes, the impact can adversely affect student achievement. North East Independent School District in San Antonio, Texas, has established guidelines as to how feeder schools will be downsized in order to minimize the impact on student achievement.

CHAPTER III

METHODOLOGY

The purpose of this study was to determine the impact of downsizing on student achievement as reported in the Academic Excellence Indicator System (AEIS) North East Independent School District in San Antonio, Texas. Testing analysis, a description of the student populations, and the statistical procedures used was described in this chapter. Conclusions will be made about the impact downsizing campus populations has on student achievement. Student performance as a whole will be studied as will subgroup populations as identified on AEIS reports.

The study examined the following questions:

1. Do changes in selected student demographics impact test scores as reported by AEIS in existing elementary schools which have been reduced in size by new campuses openings in North East Independent School District in San Antonio, Texas?
2. Do changes in selected teacher demographics impact test scores as reported by AEIS in existing elementary schools which have been reduced in size by new campuses openings in North East Independent School District in San Antonio, Texas?

Operational Definitions

Academic Excellence Indicator System: The Academic Excellence Indicator System (AEIS) reports information gathered from student performance in each school

and district in Texas. Test results, attendance information, school staff and district finances are included in this annual report made available every fall by the Texas Education Agency (TEA).

Commended Performance: Acknowledgement given by TEA to students who achieve mastery level in mathematics, reading, social studies, science and/or writing on the Texas Assessment of Knowledge and Skills (TAKS).

Downsizing: The reduction in numbers of teachers and students at older elementary schools caused by the opening of new elementary schools.

Economically Disadvantaged: Students eligible for free or reduced-lunch or other public assistance.

Existing Feeder Schools: Ten elementary campuses housing grades kindergarten through fifth grade in North East Independent School District that lost students and faculty to the new elementary schools.

Met Standards: Passing standard for Texas Assessment of Knowledge and Skills set by the Texas Education Agency.

Newly Opened Elementary Schools: The four elementary schools housing grades kindergarten through fifth grade in the North East Independent School District that opened in the August, 2005.

North East Independent School District (NEISD): A school district of approximately 140 square miles located in the north central and northeast areas of Bexar County, TX. NEISD is comprised of approximately 60,000 students and 7973 employees.

Public Education Information Management System (PEIMS): A common data base developed by TEA used to collect school district information for accountability purposes (TEA, 2007a).

Student Achievement: The number of third, fourth and fifth grade students passing TAKS (Texas Assessment of Knowledge and Skills) during the 2005-2006 school year. Student passing rates are provided in the areas of reading, mathematics, writing and science. For purposes of this study, the student achievement at the ten downsized campuses will be combined.

Student Subpopulations: Student ethnic distribution reported on AEIS report. Students are broken down into the following ethnic subpopulations: African American, White, Hispanic, Asian/Pacific Islander and Native American.

Texas Assessment of Knowledge and Skills (TAKS): A criterion referenced test given to third through tenth grade students in the areas of reading, mathematics, writing, science and social studies.

Texas Education Agency (TEA): A state agency consisting of the commissioner of education and agency staff. TEA and the State Board of Education monitor programs and activities in public education in Texas.

Population

Four new elementary schools opened in North East Independent School District in fall 2005. These four schools are located in north San Antonio which has experienced high growth in population. When the new schools opened, 10 existing elementary schools were affected by the boundary changes. It is student achievement

at these ten campuses that have been analyzed for purposes of this record of study. Table 1 is a display of the difference in total student population once downsizing at the campuses occurred. Schools are ranked in order of greatest difference in student population to least difference.

TABLE 1. Total Student Population from 2004-2005 to 2005-2006 School Year

| Campus | A | B | C | D | E | F | G | H | I | J |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 2004 - 2005 Total Student Population | 1,237 | 991 | 883 | 941 | 1,123 | 1,020 | 1,018 | 1,008 | 1,002 | 877 |
| 2005-2006 Total Student Population | 836 | 649 | 662 | 722 | 916 | 830 | 828 | 875 | 893 | 857 |
| Difference in Population | -401 | -342 | -221 | -219 | -207 | -190 | -190 | -133 | -109 | -20 |

NOTE. The 10 campuses are ranked in order of greatest to least difference in student population.

While there are differences between the socioeconomic levels of students at the ten downsized schools, there are no “Title I” schools included in the sample. The percentage of economically disadvantaged students on the 10 campuses has a range of scores from 3% to 53.5%. The Texas Education Agency calculates the percent of economically disadvantaged students using the number of students eligible for free or reduced lunch. Table 2 is an illustration of the tested population for grades three through five and ethnic/socioeconomic breakdown by campus.

TABLE 2. Total Number of Tested Students and Number of Students by Subpopulations from 2004-2005 to 2005-2006 School Year

| Campus | A | B | C | D | E | F | G | H | I | J |
|----------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 2004-2005 | | | | | | | | | | |
| Tested Student Population | 626 | 526 | 384 | 476 | 588 | 522 | 462 | 484 | 489 | 445 |
| African American | 20 | 46 | 28 | 24 | 19 | 30 | 83 | 38 | 8 | 18 |
| Hispanic | 103 | 194 | 104 | 121 | 115 | 286 | 191 | 177 | 130 | 140 |
| White | 470 | 276 | 241 | 303 | 394 | 191 | 182 | 257 | 331 | 260 |
| Economically Disadvantaged | 9 | 101 | 28 | 14 | 15 | 135 | 178 | 51 | 14 | 32 |
| 2005-2006 | | | | | | | | | | |
| Tested Student Population | 407 | 347 | 281 | 371 | 496 | 416 | 403 | 425 | 404 | 443 |
| African American | 20 | 30 | 21 | 14 | 13 | 55 | 43 | 38 | 5 | 30 |
| Hispanic | 82 | 137 | 82 | 87 | 112 | 178 | 202 | 158 | 100 | 148 |
| White | 275 | 172 | 170 | 245 | 327 | 174 | 153 | 212 | 290 | 373 |
| Economically Disadvantaged | 14 | 68 | 33 | 5 | 12 | 96 | 124 | 63 | 5 | 53 |

Note: The sum of subpopulations will not equal the “Total Number of Tested Students” because students may count in more than one subpopulation (e.g., A “White” student may also be identified as “Economically Disadvantaged”).

Table 3 is a list of the total number of test takers by overall student population and also by subpopulations. For purposes of this study, student achievement was examined for the 10 campuses collectively.

TABLE 3. Total Number of Tested Students and Number of Tested Students by Subpopulations at the 10 Downsized Elementary Schools in North East Independent School District in San Antonio, Texas

| | 2004-2005 | 2005-2006 |
|--|-----------|-----------|
| Total Number of Tested Students | 5002 | 3993 |
| African American | 314 | 269 |
| White | 2905 | 2391 |
| Hispanic | 1561 | 1286 |
| Economically Disadvantaged | 577 | 473 |

Note: The sum of subpopulations will not equal the “Total Number of Tested Students” because students may count in more than one subpopulation (e.g., A “White” student may also be identified as “Economically Disadvantaged”)

The years of experience of teachers on the identified campuses varies. Data provided by the annual AEIS reports indicated the ethnic breakdown of teachers for each campus and identifies years of experience as either new, 1-5 years experience, 6-10 years experience, 11-20 years experience and over 20 years. Total teacher population included in this study is 617.1 for the 2004-2005 school year and 502.8 for the 2005-2006 school year. In Table 4, the 10 campuses were randomly assigned letters with teacher and teacher ethnicity and years of experience have been identified.

TABLE 4. Total Number of Teachers, Number of Teachers by Ethnicity, and Teacher Years of Experience at Each of the 10 Downsized Campuses from 2004-2005 to 2005-2006 School Year

| CAMPUS | A | B | C | D | E | F | G | H | I | J |
|------------------------|------|------|------|------|------|------|------|------|------|------|
| 2004-2005 | | | | | | | | | | |
| Total | | | | | | | | | | |
| Teachers | 69.2 | 63.1 | 57.4 | 56.3 | 62.7 | 68.5 | 61.5 | 62.2 | 61.1 | 55.1 |
| African American | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| Hispanic | 6 | 10 | 5 | 14.4 | 3 | 28 | 7 | 10 | 6.1 | 3 |
| White | 62.2 | 50.1 | 50.4 | 40.9 | 57.7 | 39.5 | 54.5 | 51.2 | 52 | 51.1 |
| Asian Pacific Islander | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 |

TABLE 4. Continued

| CAMPUS | A | B | C | D | E | F | G | H | I | J |
|---------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 2004-2005 | | | | | | | | | | |
| Beginning | | | | | | | | | | |
| T. | 3 | 6 | 5 | 4 | 2 | 2 | 2 | 8 | 3 | 2 |
| 1-5 years | 19 | 18 | 10 | 18 | 16 | 23 | 15 | 21 | 18 | 10 |
| 6-10 years | 20 | 8 | 11.3 | 18 | 15 | 11 | 12 | 10 | 6 | 9 |
| 11-20 years | 22.2 | 18.6 | 16 | 10.4 | 20.7 | 16.4 | 14 | 18 | 16.1 | 17.1 |
| 20+ years | 5 | 12.5 | 15.1 | 5.9 | 9 | 16.1 | 18.5 | 5.2 | 18 | 17 |
| 2005-2006 | | | | | | | | | | |
| Total | | | | | | | | | | |
| Teachers | 52.1 | 43.5 | 42.4 | 46.1 | 54.1 | 50.3 | 54.7 | 53.6 | 53.6 | 52.4 |
| African Am. | 0 | 1 | 2 | 2 | 1 | 0 | 0 | 1 | 0 | 0 |
| Hispanic | 3 | 6 | 5 | 11.3 | 1 | 6 | 6 | 10 | 6.5 | 3 |
| White | 49.1 | 35.5 | 35.4 | 32.8 | 51.1 | 43.3 | 48.7 | 41.6 | 44.1 | 48.4 |
| Asian | | | | | | | | | | |
| Pacific | | | | | | | | | | |
| Islander | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 |
| Beginning | | | | | | | | | | |
| T. | 0 | 2.3 | 1 | 2 | 2 | 4 | 0 | 1 | 0 | 1 |
| 1-5 years | 14 | 9 | 6 | 12 | 10 | 12 | 8 | 24 | 10.5 | 5 |
| 6-10 years | 12 | 7 | 7 | 17 | 16 | 13 | 10 | 14 | 13 | 11 |
| 11-20 years | 23.1 | 11.9 | 14 | 10.3 | 19.1 | 12.2 | 15 | 10 | 13 | 19 |
| 20+ years | 3 | 13.3 | 14.4 | 4.8 | 7 | 9.1 | 21.7 | 4.6 | 17.1 | 16.4 |

Instrumentation

Data reported in the Academic Excellence Indicator System (AEIS) was used for purposes of this study. Data pertinent to student performance for all public schools and districts in Texas is collected annually for the AEIS report. In order to accurately account for demographic data, the Texas Education Agency uses information from the Public Education Information Management System (PEIMS). PEIMS data were collected from the school districts electronically and used to create the AEIS annual report. Other data collected includes school and district finances, staff and student demographics, student attendance, program participation, course completion, school

leaver and discipline. Finally, student performance on the TAKS annual test is included in the AEIS report.

AEIS reports are available to the public each fall. Of the 15 performance indicators used in the AEIS reports, the two indicators used for this study were: TAKS campus and disaggregated scores and teacher years of experience.

Internal consistency reliability for TAKS range from 0.81 to 0.93 based on the Kuder-Richardson formula 20 (KR20). Test validity for TAKS was established by using educators, test development specialists, and TEA members on various committees during development of the TAKS test. TEA states that these committees are representative of the state of Texas by gender, ethnicity, geographically and by size and type of the school district. Test items are developed, reviewed and revised on an annual basis. Tests are administered annually with field test items analyzed for validity, reliability and possible bias after each administration.

Procedures

The North East Independent School District in San Antonio, Texas had to change its attendance boundary lines in order to occupy the four new campuses. The 10 schools whose populations were being affected by the new campuses were identified by the district and new attendance boundaries were developed. This information was made available to the public. Student performance scores and teacher demographic information as reported in the AEIS reports were used for analysis by the researcher. This information was organized and transferred to a Microsoft Excel spreadsheet.

Data Analysis

Student performance at the 10 elementary schools was reported using accepted quantitative techniques as identified by Gall, Borg, and Gall (1996). TAKS scores as reported by the Academic Excellence Indicator System were examined. Scores as reported on the AEIS used results only for those students who were in attendance at a particular campus since the fall. Any data for students who may have moved from out of state are removed from the campus results. For purposes of this study, student “commended performance” on TAKS for school years 2004-2005, and 2005-2006 were also analyzed using the electronic statistical analysis system, SPSS version 11.5.

Research questions were analyzed using various statistical procedures including Paired Sample T Test and the Pearson Product Moment Correlations to examine whether there was a significant difference between the variables and student achievement and correlations between student achievement and teacher years of experience. The descriptive analysis includes mean scores, standard deviations, frequencies, and correlation measures. The level of significance was set at .05 or a 95% confidence level.

For Question 1, “Do changes in selected student demographics impact test scores as reported by AEIS in existing elementary schools which have been reduced in size by new campuses openings in North East Independent School District in San Antonio, Texas?,” student scores for the 2004-2005 and 2005-2006 school years at each of the 10 downsized campuses in the areas of mathematics and reading were

analyzed using a within group design. Scores for students passing and scores for students receiving commended performance, or mastery, were analyzed using an paired samples t-test. The student population for research question one decreased from 5002 in 2005 to 4003 in 2006. Scores were also analyzed by student ethnicity and the economically disadvantaged. The Analysis of Variance consisted of a within group mean sum of squares, mean square, degrees of freedom, p-value significance and F-statistics. Chapter IV of this study presents the findings in detail with a summary of conclusions discussed in Chapter V.

For Question 2, “Do changes in selected teacher demographics impact test scores as reported by AEIS in existing elementary schools which have been reduced in size by new campuses openings in North East Independent School District in San Antonio, Texas?,” teacher years of experience for the 2004-2005 and 2005-2006 school years were analyzed to determine the degree of covariance between student achievement and teacher years of experience. This was done for each of the 10 campuses. The population of teachers for research question two varied from 617.1 teachers in 2005 to 502.8 teachers in 2006. Chapter IV of this study presents the findings in detail with a summary of conclusions discussed in Chapter V.

CHAPTER IV

ANALYSIS OF DATA

Introduction

The purpose of this study was to study the impact of downsizing on student achievement as reported in the Academic Excellence Indicator System (AEIS) at 10 elementary campuses in North East Independent School District (NEISD) in San Antonio, Texas. Four new elementary schools in NEISD opened in the fall of 2005 resulting in the downsizing of 10 elementary schools. These 10 elementary schools lost students and teachers due to the resulting boundary changes. The data analysis in Chapter IV data is a presentation of a quantitative study of student performance on the Texas Assessment of Knowledge and Skills (TAKS) for students in third, fourth, and fifth grade in the areas of reading and mathematics at the 10 identified campuses the year prior to downsizing, 2005, and the year immediately following downsizing, 2006. The percentage of students at the 10 downsized campuses who “met standards” (MS) and achieved “commended performance” (CP) in reading and mathematics over the course of the 2004 – 2005 and 2005 – 2006 school years have been evaluated for significant differences as a result of the downsizing.

The performance for the entire tested student population at the 10 elementary campuses was reviewed. Student population was divided in “subpopulations” to include African American, Hispanic, White and Economically Disadvantaged. Performance by each of these subpopulations was analyzed. A correlational analysis

was also done to determine whether teacher years of experience impacted student performance at the 10 identified elementary campuses.

The next section of this chapter is the quantitative analysis of data collected to answer the following research questions:

1. Do changes in selected student demographics impact test scores as reported by AEIS in existing elementary schools which have been reduced in size by new campuses opening in North East Independent School District in San Antonio, Texas?
2. Do changes in selected teacher demographics impact test scores as reported by AEIS in existing elementary schools which have been reduced in size by new campuses opening in North East Independent School District in San Antonio, Texas?

Analysis of Research Questions

Research Question One

Do changes in selected student demographics impact test scores as reported by AEIS in existing elementary schools which have been reduced in size by new campuses opening in North East Independent School District in San Antonio, Texas?

The purpose of this question was to determine the impact downsizing a campus has on student achievement when considering changes in student demographics. Student achievement in this study is measured by the Texas Assessment of Knowledge and Skills (TAKS) as reported on the AEIS report provided by the Texas Education Agency. Ten campuses lost students and teachers

when four new elementary schools were built and school boundaries were changed. A within groups design analyzed student performance at these 10 identified elementary campuses.

The means for student achievement scores generally improved from the 2005 scores to the 2006 scores. While not all populations demonstrated statistically significant differences, the exception to this was the African American subpopulation in “met standards” for reading and “commended performance” for mathematics. The mean score in “met standards” for reading decreased by .20. The mean score in “commended performance” for mathematics decreased by 5.80 points.

Question 1 is divided into four parts: Students passing or “met standards” in reading; students who demonstrated mastery and received commended performance in reading; students “meeting standards” in mathematics; and students receiving “commended performance” in mathematics. Student populations are broken down in each part as follows: All students, African American, Hispanic, White and Economically Disadvantaged. Table 5 contains data for students meeting standards in reading.

TABLE 5. Paired Samples T-Test with Mean, Standard Deviation, Standard Error of Mean, T-Value, Degrees of Freedom, and Significance for Students Meeting Standards in Reading in 2005 Compared to 2006 at the 10 Downsized Campuses in North East Independent School District in San Antonio, Texas

| | Mean | Standard Deviation | Standard Error Mean | t | df | Sig. (2-tailed) |
|-----------------------------|------|--------------------|---------------------|--------|----|-----------------|
| Overall Student Achievement | 2.5 | 2.593 | 0.82 | 3.049 | 9 | 0.014 |
| African American | -0.2 | 8.741 | 2.764 | -0.072 | 9 | 0.944 |

TABLE 5. Continued

| | Mean | Standard Deviation | Standard Error Mean | t | df | Sig. (2-tailed) |
|-------------------------------|-------------|-------------------------------|--------------------------------|----------|-----------|------------------------|
| Hispanic | 1.8 | 3.12 | 0.987 | 1.824 | 9 | 0.101 |
| White | 2.7 | 2.946 | 0.932 | 2.898 | 9 | 0.018 |
| Economically Disadvantaged | 2.9 | 6.244 | 1.975 | 1.469 | 9 | 0.176 |

African American, Hispanic and Economically Disadvantaged populations showed no statistically significant differences. The total student population and White subpopulation returned a statistically significant difference.

Question 1 investigating the impact of downsizing on total student achievement for students passing or “met standards” in reading as reported in the AEIS, was analyzed using a paired samples t-test. Table 6 is a report of the descriptive statistics for all students prior to downsizing (2004-2005) and after downsizing (2005-2006).

TABLE 6. Campus Number (n), Mean Score and Standard Deviation for All Students Meeting Standards in Reading Prior to Downsizing (2004-2005) and After Downsizing (2005-2006) at the Elementary Campuses in North East Independent School District in San Antonio, Texas

| Group | n | M | SD |
|--------------|----------|----------|-----------|
| 2005 - 2006 | 10 | 96.8 | 2.74 |
| 2004 - 2005 | 10 | 94.3 | 4.47 |

Table 7 contains the data for the paired samples t-test. The level of significance for the procedure was 0.014. This was less than the alpha level of 0.05.

As a result, the decision was made to reject the null hypotheses of no difference. Therefore, it was inferred that the means in the “total” population in reading, from which these sample means were drawn, were different. Student performance was better on the TAKS test after the reduction in population.

TABLE 7. Paired Samples T-Test, Degrees of Freedom, and Significance for All Students Meeting Standards in Reading at the Elementary Campuses in North East Independent School District in San Antonio, Texas

| t | df | Significance |
|----------|-----------|---------------------|
| 3.049 | 9 | 0.014* |

*Significant ≤ 0.05

Question 1, investigating the impact of downsizing on white student achievement as reported in the AEIS, was analyzed using a paired samples t-test. Table 8 is a report of the descriptive statistics for the white student population prior to downsizing (2004-2005) and after downsizing (2005-2006).

TABLE 8. Campus Number (n), Mean Score, and Standard Deviation for White Students Meeting Standards in Reading Prior to Downsizing (2004-2005) and After Downsizing (2005-2006) at the Elementary Campuses in North East Independent School District in San Antonio, Texas

| Group | n | M | SD |
|--------------|----------|----------|-----------|
| 2005 - 2006 | 10 | 97.5 | 2.01 |
| 2004 - 2005 | 10 | 94.3 | 4.44 |

Table 9 is a representation of the data for the paired samples t-test. The level of significance for the procedure was 0.018 which was less than the alpha level of 0.05. As a result, the decision was made to reject the null hypotheses of no difference. It was therefore inferred that the means in the white population for reading, from which these sample means were drawn demonstrated statistical difference between the population means. In other words, white subpopulation performance was better on the TAKS test after the reduction in population.

TABLE 9. Paired Samples T-Test, Degrees of Freedom, and Significance for White Students Meeting Standards in Reading at the Elementary Campuses in North East Independent School District in San Antonio, Texas

| t | df | Significance |
|----------|-----------|---------------------|
| 3.898 | 9 | 0.018* |

*Significant ≤ 0.05

Question 1 also analyzed student commended performance in reading. As mentioned in Chapter I, the Texas Education Agency acknowledges students who go above the minimum standards set by the state of Texas and achieve mastery of those subject areas tested on TAKS. Table 10 is a display of the data for students receiving “commended performance” in reading. Only the Hispanic subpopulation showed statistically significant differences in the area of commended performance in reading. Table 11 is a report of the descriptive statistics for the Hispanic student population prior to downsizing (2004-2005) and after downsizing (2005-2006).

Question 1, investigating the impact of downsizing on Hispanic student achievement as reported in the AEIS, was analyzed using an independent samples t-test. Table 11 is a report of the descriptive statistics for the Hispanic student population prior to downsizing (2004-2005) and after downsizing (2005-2006).

TABLE 10. Paired Samples T-Test with Mean, Standard Deviation, Standard Error of Mean, T-Value, Degrees of Freedom, and Significance for Students Receiving Commended Performance in Reading in 2005 Compared to 2006 at the 10 Downsized Campuses in North East Independent School District in San Antonio, Texas

| | Mean | Standard Deviation | Standard Error Mean | t | df | Sig. (2-tailed) |
|-----------------------------|------|--------------------|---------------------|-------|----|-----------------|
| Overall Student Achievement | 1.9 | 2.961 | 0.936 | 2.029 | 9 | 0.073 |
| African American | 3.2 | 22.607 | 7.149 | 0.448 | 9 | 0.665 |
| Hispanic | 5.2 | 3.553 | 1.123 | 4.628 | 9 | 0.001 |
| White | 0.4 | 3.134 | 0.991 | 0.404 | 9 | 0.696 |
| Economically Disadvantaged | 5.2 | 12.813 | 4.052 | 1.283 | 9 | 0.231 |

TABLE 11. Campus Number (n), Mean Score, and Standard Deviation for Hispanic Students Receiving Commended Performance in Reading Prior to Downsizing (2004-2005) and After Downsizing (2005-2006) at the Elementary Campuses in North East Independent School District in San Antonio, Texas

| Group | n | M | SD |
|-------------|----|------|-------|
| 2005 - 2006 | 10 | 43.6 | 10.05 |
| 2004 - 2005 | 10 | 38.4 | 11.82 |

Table 12 is a provision of the data for the paired samples t-test. The level of significance for the procedure was 0.001. This was less than the alpha level of 0.05. As a result, the decision was made to reject the null hypotheses of no difference. Therefore, it was inferred that the means in the Hispanic population for “commended

performance” in reading, from which these sample means were drawn, were different. There is statistical difference between the population means showing Hispanic student performance improving on the TAKS test after the reduction in population.

Question 1 also examines students who “met standards” in mathematics. Total student performance and all student subpopulations experienced improvement in the mean score of TAKS performance. Only the total student performance and the Hispanic subpopulation showed statistically significant differences. Analysis of the data for question 1 is presented in Table 13.

TABLE 12. Paired Samples T-Test, Degrees of Freedom, and Significance for Hispanic Students Receiving Commended Performance in Reading at the 10 Elementary Campuses in North East Independent School District in San Antonio, Texas

| t | df | Significance |
|-------|----|--------------|
| 4.623 | 9 | 0.001* |

*Significant ≤ 0.05

Question 1 also examines students who “met standards” in mathematics. Total student performance and all student subpopulations experienced improvement in the mean score of TAKS performance. Only the total student performance and the Hispanic subpopulation showed statistically significant differences. Analysis of the data for question 1 is presented in Table 13.

Table 13. Paired Samples T-Test with Mean, Standard Deviation, Standard Error of Mean, T-Value, Degrees of Freedom, and Significance for Students Who Met Standards in Mathematics in 2005 Compared to 2006 at the 10 Downsized Campuses in North East Independent School District in San Antonio, Texas

| | Mean | Standard Deviation | Standard Error Mean | t | df | Sig. (2-tailed) |
|-----------------------------|------|--------------------|---------------------|-------|----|-----------------|
| Overall Student Achievement | 1.5 | 2.068 | 0.654 | 2.293 | 9 | 0.048 |
| African American | 0.1 | 13.085 | 4.138 | 0.024 | 9 | 0.981 |
| Hispanic | 2.6 | 3.502 | 1.108 | 2.348 | 9 | 0.043 |
| White | 0.8 | 1.619 | 0.512 | 1.562 | 9 | 0.153 |
| Economically Disadvantaged | 2.4 | 5.06 | 1.6 | 1.5 | 9 | 0.168 |

Question 1, investigating the impact of downsizing on student achievement in mathematics as reported in the AEIS, was analyzed using a paired samples t-test. Table 14 is a report of the descriptive statistics for the total student population prior to downsizing (2004-2005) and after downsizing (2005-2006).

TABLE 14. Campus Number (n), Mean Score, and Standard Deviation for All Students Meeting Standards in Mathematics Prior to Downsizing (2004-2005) and After Downsizing (2005-2006) at the Elementary Campuses in North East Independent School District in San Antonio, Texas

| Group | n | M | SD |
|-------------|----|------|------|
| 2005 - 2006 | 10 | 94.6 | 4.03 |
| 2004 - 2005 | 10 | 93.1 | 5.57 |

The data for the independent samples t-test are found in Table 15. The level of significance for the procedure was 0.048. This was less than the alpha level of 0.05. As a result, the decision was made to reject the null hypotheses of no difference. It

was therefore inferred that the means in the total student population, from which these sample means were drawn, were statistically different.

TABLE 15. Paired Samples T-Test, Degrees of Freedom, and Significance for All Students Meeting Standards in Mathematics at the Elementary Campuses in North East Independent School District in San Antonio, Texas

| t | df | Significance |
|----------|-----------|---------------------|
| 2.293 | 9 | 0.048* |

*Significant ≤ 0.05

Question 1, investigating the impact of downsizing on Hispanic student achievement in mathematics as reported in the AEIS, was analyzed using a paired samples t-test. Table 16 is a report of the descriptive statistics for the Hispanic student population prior to downsizing (2004-2005) and after downsizing (2005-2006).

TABLE 16. Campus Number (n), Mean Score, and Standard Deviation for Hispanic Students Meeting Standards in Mathematics Prior to Downsizing (2004-2005) and After Downsizing (2005-2006) at the Elementary Campuses in North East Independent School District in San Antonio, Texas

| Group | n | M | SD |
|--------------|----------|----------|-----------|
| 2005 - 2006 | 10 | 93.3 | 5.01 |
| 2004 - 2005 | 10 | 90.70 | 6.73 |

The data for the paired samples t-test are contained in Table 17. The level of significance for the procedure was 0.043. This was less than the alpha level of 0.05. As a result, the decision was made to reject the null hypotheses of no difference.

There is statistical difference between Hispanic performance in mathematics in 2005 and 2006.

TABLE 17. Paired Samples T-Test, Degrees of Freedom, and Significance for Hispanic Students Meeting Standards in Mathematics at the Elementary Campuses in North East Independent School District in San Antonio, Texas

| t | df | Significance |
|-------|----|--------------|
| 2.348 | 9 | 0.043* |

*Significant ≤ 0.05

Question 1 is also an examination of students who received “commended performance” in mathematics. Total student performance and all subpopulations except African American experienced improvement in the mean score of TAKS commended performance. Total student performance and the Hispanic and White subpopulations showed statistically significant differences. Analysis of the data for student achievement in commended performance in mathematics is presented in table 18.

TABLE 18. Paired Samples T-Test with Mean, Standard Deviation, Standard Error of Mean, T-Value, Degrees of Freedom, and Significance for Students Who Received Commended Performance in Mathematics in 2005 Compared to 2006 at the 10 Downsized Campuses in North East Independent School District in San Antonio, Texas

| | Mean | Standard Deviation | Standard Error Mean | t | df | Sig. (2-tailed) |
|-----------------------------|------|--------------------|---------------------|-------|----|-----------------|
| Overall Student Achievement | 6.6 | 3.502 | 1.108 | 5.959 | 9 | 0 |

TABLE 18. Continued

| | Mean | Standard Deviation | Standard Error Mean | t | df | Sig. (2-tailed) |
|----------------------------|------|--------------------|---------------------|--------|----|-----------------|
| African American | -5.8 | 11.478 | 3.63 | -1.598 | 9 | 0.145 |
| Hispanic | 7.9 | 4.977 | 1.574 | 5.02 | 9 | 0.001 |
| White | 6.1 | 4.095 | 1.295 | 4.711 | 9 | 0.001 |
| Economically Disadvantaged | 8 | 12.526 | 3.961 | 2.02 | 9 | 0.074 |

Question 1, investigating the impact of downsizing on total student achievement as reported in the AEIS, was analyzed using a paired samples t-test. Table 19 is a report of the descriptive statistics for all students prior to downsizing (2004-2005) and after downsizing (2005-2006).

TABLE 19. Campus Number (n), Mean Score, and Standard Deviation for All Students Receiving Commended Performance in Mathematics Prior to Downsizing (2004-2005) and After Downsizing (2005-2006) at the Elementary Campuses in North East Independent School District in San Antonio, Texas

| Group | n | M | SD |
|-------------|----|------|-------|
| 2005 - 2006 | 10 | 48.6 | 13.79 |
| 2004 - 2005 | 10 | 42 | 11.65 |

The data for the paired samples t-test are found in Table 20. The level of significance for the procedure was 0.000, less than the alpha level of 0.05. The decision was made to reject the null hypotheses of no difference and infer that the

means in the “overall” population were different. There is statistical difference between the population means.

TABLE 20. Paired Samples T-Test, Degrees of Freedom, and Significance for All Students Receiving Commended Performance in Mathematics at the Elementary Campuses in North East Independent School District in San Antonio, Texas

| t | df | Significance |
|-------|----|--------------|
| 5.959 | 9 | 0.000* |

*Significant ≤ 0.05

Question 1 investigating the impact of downsizing on Hispanic student achievement as reported in the AEIS, was analyzed using a paired samples t-test. Table 21 is a report of the descriptive statistics for the Hispanic student population prior to downsizing (2004-2005) and after downsizing (2005-2006).

TABLE 21. Campus Number (n), Mean Score, and Standard Deviation for Hispanic Students Receiving Commended Performance in Mathematics Prior to Downsizing (2004-2005) and After Downsizing (2005-2006) at the Elementary Campuses in North East Independent School District in San Antonio, Texas

| Group | n | M | SD |
|-------------|----|------|-------|
| 2005 - 2006 | 10 | 41.3 | 12.16 |
| 2004 - 2005 | 10 | 33.4 | 9.65 |

The data for the paired samples t-test are found in Table 22. The level of significance for the procedure was 0.001. This was less than the alpha level of 0.05.

As a result, the decision was made to reject the null hypotheses of no difference. Therefore, it was inferred that the means in the population, from which these sample means were drawn, were different. Hispanic student commended performance in mathematics was better on the TAKS test after the reduction in population.

TABLE 22. Paired Samples T-Test, Degrees of Freedom, and Significance for Hispanic Students Receiving Commended Performance in Mathematics at the Elementary Campuses in North East Independent School District in San Antonio, Texas

| t | df | Significance |
|-------|----|--------------|
| 5.020 | 9 | 0.001* |

*Significant ≤ 0.05

Question 1, investigating the impact of downsizing on White student achievement as reported in the AEIS, was analyzed using a paired samples t-test. Table 23 is a report of the descriptive statistics for the White student population prior to down-sizing (2004-2005) and after downsizing (2005-2006).

TABLE 23. Campus Number (n), Mean Score, and Standard Deviation for White Students Receiving Commended Performance in Mathematics Prior to Downsizing (2004-2005) and After Downsizing (2005-2006) at the Elementary Campuses in North East Independent School District in San Antonio, Texas

| Group | n | M | SD |
|-------------|----|------|-------|
| 2005 - 2006 | 10 | 53.1 | 12.85 |
| 2004 - 2005 | 10 | 47 | 10.13 |

The data for the paired samples t-test are shown in Table 24. The level of significance for the procedure was 0.001. This was less than the alpha level of 0.05. As a result, the decision was made to reject the null hypotheses of no difference. Therefore, it was inferred that the means in the population, from which these sample means were drawn, were different. White student commended performance was better on the TAKS test after the reduction in population.

TABLE 24. Paired Samples T-Test, Degrees of Freedom, and Significance for White Students Receiving Commended Performance in Mathematics at the Elementary Campuses in North East Independent School District in San Antonio, Texas

| t | df | Significance |
|----------|-----------|---------------------|
| 4.711 | 9 | 0.001* |

*Significant ≤ 0.05

Research Question 2

Do changes in selected teacher demographics impact test scores as reported by AEIS in existing elementary schools which have been reduced in size by new campuses opening in North East Independent School District in San Antonio, Texas?

The purpose of this question was to determine the impact downsizing a campus has on student achievement when considering changes in teacher demographics. The research in Chapter II indicates that teacher quality has more influence on student success than any other factor. Furthermore, studies show that high teacher turnover rates can negatively impact student achievement. Table 25 is a

reflection of the data from AEIS showing teacher years of experience at the 10 identified elementary campuses.

TABLE 25. Teacher Years of Experience at Each of the 10 Downsized Elementary Campuses Before Downsizing (2004-2005) and After Downsizing (2005-2006) in North East Independent School District in San Antonio, Texas

| Experience Level 2004-2005 | Campus | | | | | | | | | |
|-------------------------------|--------|------|------|------|------|------|------|-----|------|------|
| | A | B | C | D | E | F | G | H | I | J |
| Beginning Teacher | 3 | 6 | 5 | 4 | 2 | 2 | 2 | 8 | 3 | 2 |
| 1-5 Years | 19 | 18 | 10 | 18 | 16 | 23 | 15 | 21 | 18 | 10 |
| 10 Years | 20 | 8 | 11.3 | 18 | 15 | 11 | 12 | 10 | 6 | 9 |
| 11-20 Years | 22.2 | 18.6 | 16 | 10.4 | 20.7 | 16.4 | 14 | 18 | 16.1 | 17.1 |
| 20+ Years | 5 | 12.5 | 15.1 | 5.9 | 9 | 16.1 | 18.5 | 5.2 | 18 | 17 |
| Experience Level 2005-2006 | | | | | | | | | | |
| Beginning Teacher | 0 | 2.3 | 1 | 2 | 2 | 4 | 0 | 1 | 0 | 1 |
| 1-5 Years | 14 | 9 | 6 | 12 | 10 | 12 | 8 | 24 | 10.5 | 5 |
| 6-10 Years | 12 | 7 | 7 | 17 | 16 | 13 | 10 | 14 | 13 | 11 |
| 11-20 Years | 23.1 | 11.9 | 14 | 10.3 | 19.1 | 12.2 | 15 | 10 | 13 | 19 |
| 20+ Years | 3 | 13.3 | 14.4 | 4.8 | 7 | 9.1 | 21.7 | 4.6 | 17.1 | 16.4 |

To determine means for teacher years of experience, each category was assigned a number value. The number value assigned was the median of each category (i.e., a value of 1 for beginning teachers, 3 for 1-5 years, 8 for 6-10 years, 15 for 11-20 years and 25 for +20 years). Table 26 is a reflection of the mean of teacher years of experience at each of the 10 identified campuses before downsizing (2004-2005) and after downsizing (2005-2006).

After downsizing occurred, total years of teacher experience at 8 of the 10 campuses increased. This was due to the North East Independent School District policy which states that campuses impacted by downsizing will first ask for teacher

volunteers to transfer to the new school. If not enough volunteer, those teachers with the least years of district experience are to be transferred first.

TABLE 26. Mean of Teacher Years of Experience at Each of the 10 Downsized Campuses Before Downsizing (2004-2005) and After Downsizing (2005-2006) in North East Independent School District in San Antonio, Texas

| Experience Level 2004-2005 | Campus | | | | | | | | | |
|-------------------------------|-------------|--------------|--------------|-------------|--------------|--------------|--------------|-------------|--------------|--------------|
| | A | B | C | D | E | F | G | H | I | J |
| Beginning T. | 3 | 6 | 5 | 4 | 2 | 2 | 2 | 8 | 3 | 2 |
| 1-5 Years | 57 | 54 | 30 | 54 | 48 | 69 | 45 | 63 | 54 | 30 |
| 6-10 Years | 160 | 64 | 90.4 | 144 | 120 | 88 | 96 | 80 | 48 | 72 |
| 11-20 Years | 333 | 279 | 240 | 156 | 310.5 | 246 | 210 | 270 | 241.5 | 256.5 |
| 20+ Years | 125 | 312.5 | 377.5 | 147.5 | 225 | 402.5 | 462.5 | 130 | 450 | 425 |
| Total Years | 678 | 715.5 | 742.9 | 505.5 | 705.5 | 807.5 | 815.5 | 551 | 796.5 | 785.5 |
| Average | 9.80 | 11.34 | 12.94 | 8.98 | 11.25 | 11.79 | 13.26 | 8.86 | 13.04 | 14.26 |
| Experience Level 2005-2006 | A | B | C | D | E | F | G | H | I | J |
| Beginning T. | 0 | 2.3 | 1 | 2 | 2 | 4 | 0 | 1 | 0 | 1 |
| 1-5 Years | 42 | 27 | 18 | 36 | 30 | 36 | 24 | 72 | 31.5 | 15 |
| 6-10 Years | 96 | 56 | 56 | 136 | 128 | 104 | 80 | 112 | 104 | 88 |

TABLE 26. Continued

| Experience Level 2005-2006 | Campus | | | | | | | | | |
|--|--------------|--------------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | A | B | C | D | E | F | G | H | I | J |
| 11-20 Years | 346.5 | 178.5 | 210 | 154.5 | 286.5 | 183 | 225 | 150 | 195 | 285 |
| 20+ Years | 75 | 332.5 | 360 | 120 | 175 | 227.5 | 542.5 | 115 | 427.5 | 410 |
| Total Years | 559.5 | 596.3 | 645 | 448.5 | 621.5 | 554.5 | 871.5 | 450 | 758 | 799 |
| Average | 10.74 | 13.71 | 15.21 | 9.73 | 11.49 | 11.02 | 15.93 | 8.40 | 14.14 | 15.25 |
| Difference of teacher years of experience from 2005 to 2006 | 0.94 | 2.37 | 2.27 | 0.75 | 0.24 | -0.76 | 2.67 | -0.46 | 1.11 | 0.99 |

Note. The number value assigned was the median of each category (i.e. a value of 1 for beginning teachers, 3 for 1-5 years, 8 for 6-10 years, 15 for 11-20 years and 25 for +20 years).

A Pearson Correlation Coefficient was used to determine the degree of covariance between student achievement and teacher years of experience. Table 27 contains the data of that analysis. There are no consistent trends when comparing the relationship from 2004 – 2005 to 2005 – 2006 although the Hispanic population and the Economically Disadvantaged students consistently show that students do better with more experienced teachers. In the area of reading, 75% of the correlations are negative while in mathematics, 19 of the 20 cases are negative.

TABLE 27. Pearson Product Moment Correlations, Significance, and N (10) Measuring Degree of Covariance between Student Achievement and Teacher Years of Experience in “Met Standards” and “Commended Performance” in Reading and Mathematics Before Downsizing (2004-2005) and After Downsizing (2005-2006) at the 10 Elementary Schools in North East Independent School District in San Antonio, Texas

| Reading | | Met Standard/ ALL | Met Standard/ African American | Met Standard/ Hispanic | Met Standard/ White | Met Standard/Economically Disadvantaged |
|---|-----------------|---|---|---|--|---|
| Teacher Experience 2004-2005 | Pearson | -0.16 | -0.08 | -0.02 | -0.18 | -0.14 |
| | Sig. (2-tailed) | 0.65 | 0.82 | 0.95 | 0.61 | 0.70 |
| | N | 10 | 10 | 10 | 10 | 10 |
| Teacher Experience 2005-2006 | Pearson | -0.16 | -0.59 | -0.23 | 0.06 | -0.16 |
| | Sig. (2-tailed) | 0.67 | 0.07 | 0.52 | 0.87 | 0.66 |
| | N | 10 | 10 | 10 | 10 | 10 |
| Teacher Experience 2004-2005 | Pearson | Commended Performance/ ALL | Commended Performance African American | Commended Performance Hispanic | Commended Performance White | Commended Performance Economically Disadvantaged |
| | Sig. (2-tailed) | -0.03 | -0.66 | 0.06 | -0.02 | 0.21 |
| | N | 0.92 | 0.04 | 0.86 | 0.95 | 0.57 |
| Teacher Experience 2005-2006 | Pearson | Commended Performance/ ALL | Commended Performance African American | Commended Performance Hispanic | Commended Performance White | Commended Performance Economically Disadvantaged |
| | Sig. (2-tailed) | -0.01 | 0.16 | 0.15 | -0.05 | -0.31 |
| | N | 0.98 | 0.66 | 0.69 | 0.89 | 0.38 |
| | | 10 | 10 | 10 | 10 | 10 |

TABLE 27. Continued

| Mathematics | | Met Standard/ ALL | Met Standard/ African American | Met Standard/ Hispanic | Met Standard/White | Met Standard/ Economically Disadvantaged |
|----------------------------------|-----------------|---------------------------------------|---|---|------------------------------------|---|
| Teacher Experience SY0405 | Pearson | -0.27 | -0.35 | -0.18 | -0.22 | -0.29 |
| | Sig. (2-tailed) | 0.46 | 0.32 | 0.61 | 0.55 | 0.42 |
| | N | 10 | 10 | 10 | 10 | 10 |
| | | Met Standard/ ALL | Met Standard/ African American | Met Standard/ Hispanic | Met Standard/White | Met Standard/ Economically Disadvantaged |
| Teacher Experience SY0506 | Pearson | -0.23 | -0.19 | -0.20 | -0.26 | -0.29 |
| | Sig. (2-tailed) | 0.51 | 0.60 | 0.59 | 0.47 | 0.42 |
| | N | 10 | 10 | 10 | 10 | 10 |
| | | Commended Performance/ ALL | Commended Performance African American | Commended Performance Hispanic | Commended Performance White | Commended Performance Economically Disadvantaged |
| Teacher Experience SY0405 | Pearson | -0.20 | -0.67 | -0.04 | -0.22 | 0.32 |
| | Sig. (2-tailed) | 0.57 | 0.03 | 0.92 | 0.55 | 0.37 |
| | N | 10 | 10 | 10 | 10 | 10 |
| | | Commended Performance/ ALL | Commended Performance African American | Commended Performance Hispanic | Commended Performance White | Commended Performance Economically Disadvantaged |
| Teacher Experience SY0506 | Pearson | -0.17 | -0.32 | -0.21 | -0.13 | -0.44 |
| | Sig. (2-tailed) | 0.64 | 0.37 | 0.56 | 0.71 | 0.20 |
| | N | 10 | 10 | 10 | 10 | 10 |

In 38 of the 40 instances in Table 25, one variable does not systematically vary with the other. With a level of significance at >0.05 , the decision to reject the null is made.

The African American subpopulation returned a statistically significant difference in the areas of commended performance in both reading and mathematics. Table 28 contains the data for the Pearson Correlation (r) in commended performance for reading.

TABLE 28. Pearson Correlation (r), N (10), and Significance for African America Students Receiving Commended Performance in Reading at the 10 Downsized Elementary Schools in North East Independent School District in San Antonio, Texas

| Pearson | N | Significance (2-tailed) |
|---------|----|-------------------------|
| -0.66 | 10 | 0.04* |

*Significance ≥ 0.05

The level of significance for the procedure was 0.04. This was less than the alpha level of 0.05. As a result, the decision was made to reject the null hypotheses of no difference. In the population the two variables systematically vary with each other. In other words, in 2004 – 2005 the student performance on the TAKS evaluation was significantly lower when the faculty was more experienced for African American subpopulation in the area of commended reading.

Table 29 contains the data for the Pearson Correlation (r) for the African American subpopulation in commended performance for mathematics.

TABLE 29. Pearson Correlation (r), N (10), and Significance for African America Students Receiving Commended Performance in Mathematics at the 10 Downsized Elementary Schools in North East Independent School District in San Antonio, Texas

| Pearson | N | Significance (2-tailed) |
|----------------|----------|--------------------------------|
| -0.67 | 10 | 0.03* |

*Significance ≥ 0.05

The level of significance for the procedure was 0.03. This was less than the alpha level of 0.05. As a result, the decision was made to reject the null hypotheses of no difference. In the population the two variables systematically vary with each other. In other words, in 2004 – 2005 the student performance on the TAKS evaluation was significantly lower when the faculty was more experienced for African American subpopulation in the area of commended mathematics.

Summary of Findings

Using a paired samples t test to compare student achievement collectively at the 10 downsized campuses before downsizing and after downsizing, this record of study indicates there are both positive and negative impacts on student achievement once downsizing occurs. While total student achievement, White student achievement and Hispanic student achievement were positively impacted by smaller schools, it is important to note that the Economically Disadvantaged population had no significant increase in student achievement and student achievement for the African American students actually declined in the areas of met standards in reading and commended performance in mathematics.

To determine whether teacher demographics impacted student achievement, a correlational study was conducted to determine the degree of covariance between student achievement and teacher years of experience. The Pearson r shows that in 75% of the reading scores and 95% of math scores, there is a negative correlation between student achievement and teacher years of experience.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The review of related literature presented in Chapter II of this study emphasized the impact teacher efficacy (American School Board Journal, 2006; Darling-Hammond, 2003; Kaplan & Owens, 2001; Wenglinsky, 2000), school size (Capps & Maxwell, 1999; Cotton, 1996; Fowler, 1992; Sergiovanni, 1993; Williams, 1990), and leadership (Dufour, 2004; Edwards, 1995; Ellis, 1998; Firestone et al., 1987; Peterson & Deal, 1998; Lovely, 2005; Smith & Andrews, 1989; Youngs & King, 2002) has on student achievement. Downsizing can impact efficacy and leave school officials in a quandary about the best way to reduce populations in order to maximize benefits and minimize negative impacts. Because NEISD is growing by approximately 2000 students annually and will need five new elementary schools before the year 2012, district officials will find themselves addressing the dilemma of downsizing and maintaining or improving student achievement.

Among the points evident in the literature presented in Chapter II was the importance of teacher quality as a determinant of student success (American School Board Journal, 2006; Darling-Hammond, 2003; Kaplan & Owings, 2001; Wenglinsky, 2000), the manner in which teachers collaborated with one another (Fullan, 2005; Green, 2001; Marzano et al., 2005; Peterson, 1998; Schmoker, 2006; Watkins, 2005; Wheelan & Kesselring, 2005), the trust that was needed for effective collaboration (Barth, 1990; Brewster & Railsback, 2003; Lambert, 1998; Wheelan & Kesselring, 2005; Youngs & King, 2002) and the relationships established between

teachers and students once trust is established (Akey, 2006; Atkinson & Feather, 1967; Cothran & Ennis, 1997; Goodenow, 1992; Hoy et al., 2006; Pillsbury, 2005; Voelkl, 1995). These factors have all been shown to play a major role in effective schools and high student achievement. School size has been shown to be a determinant that aids the relationship piece so vital in successful schools (Capps & Maxwell, 1999; Cotton, 1996; Fowler, 1992; Sergiovanni, 1993; Williams, 1990). The smaller the school, the researchers contended, the better able the population is to establish higher levels of trust, ultimately leading to increased student achievement, especially among lower income students.

Making the link between teacher quality and smaller schools and the difficult process of downsizing in school districts has not been studied. This final chapter, Summary, Conclusions and Recommendations, offers a summary of the findings of this study regarding downsizing and student achievement. Implications for practice and recommendations for further study are also included.

Research Question 1

Do changes in selected student demographics impact test scores as reported by AEIS in existing elementary schools which have been reduced in size by new campus openings in North East Independent School District in San Antonio, Texas?

The analysis of student performance on TAKS at the 10 downsized elementary feeder schools reveals mixed returns for statistical significance. Data were analyzed in the areas of mathematics and reading among both students who passed the test, or “met standards” and students achieving mastery and earning “commended

performance” for the overall student population as well as the student subpopulations of African American, Hispanic, White and Economically Disadvantaged. The information was analyzed after downsizing occurred and compared student test scores prior to downsizing (2004 – 2005 school year) to student test scores after downsizing (2005 – 2006 school year). Table 30 is a display of the differences in students by overall tested student population and tested subpopulations.

TABLE 30. Total Number of Tested Students and Number of Tested Students by Subpopulations at the 10 Downsized Elementary Schools in North East Independent School District in San Antonio, Texas

| | 2004-2005 | 2005-2006 |
|--|------------------|------------------|
| Total Number of Tested Students | 5002 | 3993 |
| African American | 314 | 269 |
| White | 2905 | 2391 |
| Hispanic | 1561 | 1286 |
| Economically Disadvantaged | 577 | 473 |

Note: The sum of subpopulations will not equal the “Total Number of Tested Students” because students may count in more than one subpopulation (e.g., A “White” student may also be identified as “Economically Disadvantaged”).

All students scored better in 2006 with the exception of the African American subpopulation. Their scores declined in the areas of “met standards” in reading and “commended performance” in mathematics. There were statistical significances in eight of the twenty cells as shown in Table 31.

TABLE 31. Paired Samples T-Tests Were Used to Compare Student Achievement on the Texas Assessment Knowledge and Skills (TAKS) Assessment Prior to Downsizing (2005) and After Downsizing (2006) at the 10 Downsized Campuses in North East Independent School District in San Antonio, Texas

| | Reading | | Mathematics | |
|--------------------|---------------|-----------------------|---------------|-----------------------|
| | Met Standards | Commended Performance | Met Standards | Commended Performance |
| All Students | * | | * | * |
| African-American | | | | |
| Hispanic | | * | * | * |
| White | * | | | * |
| Econ Disadvantaged | | | | |

*Significant improvement shown in 2006

It can be inferred from the results reported in Chapter IV that student achievement scores increased after the elementary schools were downsized. The results from this study indicate that the “Overall” student population, the Hispanic subpopulation, and the White subpopulation displayed more statistically significant changes than did the African American and Economically Disadvantaged subpopulations. It is interesting to note, however, that while the Economically Disadvantaged scores did improve in every area, there was no statistically significant improvement shown. The literature reviewed in Chapter II clearly indicated that it is the economically disadvantaged students who benefit most from smaller school size. Fowler (1992) found that larger schools actually have a negative impact on low SES and minority students, and achievement is more equitable in smaller schools regardless of SES.

Conclusions/Implications for Practice

Downsizing schools will not guarantee that student achievement on the annual TAKS assessment will improve significantly the following school year. It is reasonable, however, to expect that student scores will increase with reduced school size. Student gains may show significant improvement after two years since literature suggests coherence and continuity are important components of effective schools (Barth, 1990; Brownell et al., 2006; Fullan, 2005; Fullan & Hargreaves, 1996; Green, 2001; Gruenert, 2003; Hoy et al., 2006; Marzano et al., 2005; Peterson, 1997; Pugach & Johnson, 2002; Sagor, 2000; Schmoker, 2006; Watkins, 2005; Wheelan & Kesselring, 2005; York-Barr & Duke, 2004). It may be that the schools have not quite “settled” after downsizing occurred. Hoy and Miskel’s (2005) “environmental uncertainty” and its effects on climate as explained in Chapter II’s Review of Literature would likely lessen over time.

Kathleen Cotton (1996) agreed with other researchers that an effective population size for an elementary campus is between 300 and 400 students. No school in this study was downsized to that population. The smallest student population of the ten campuses used for this record of study was 649 with the largest at 916. It is quite possible that the 10 elementary schools were not downsized enough to achieve the benefits of small school characteristics.

Faculty collaboration is an important component of effective schools (Fullan, 2005; Green, 2001; Marzano et al., 2005; Peterson, 1997; Schmoker, 2006; Watkins, 2005; Wheelan & Kesselring, 2005). Edwards (1995) maintained that teachers who have a strong sense of belonging to a school are more likely to engage in effective

collaboration. Often, teams of teachers have to be restructured after a reduction in population, meaning that some teachers might not have worked together in the past. It stands to reason that they would need time to establish the level of trust necessary for meaningful collaboration and improved student achievement. While student achievement did not always improve significantly at the 10 downsized campuses, the results of this study indicate that the turnover of teachers did not negatively impact student achievement. Principals of downsized schools may want to focus on building and maintaining high levels of trust among all stakeholders in order to significantly increase student achievement (Akey, 2006; Atkinson & Feather, 1967; Cothran & Ennis, 1997; Goodenow, 1992; Hoy & Tarter, 2006; Pillsbury, 2005; Voelkl, 1995).

Research Question 2

Do changes in selected teacher demographics impact test scores as reported by AEIS in existing elementary schools which have been reduced in size by new campuses openings in North East Independent School District in San Antonio, Texas?

The findings of the correlational study done for question two found there was no statistically significant correlation of covariance except for the African American subpopulation. The increase in teacher years of experience from 2005 to 2006 did not statistically affect student scores. The exception to this was the African American subpopulation, who demonstrated a stronger correlation to the downward trend of student achievement and teacher years of experience. Table 32 is a display of the changes in teacher ethnicity before and after downsizing at the 10 elementary

campuses. Changes in African American teachers are minimal at each of the 10 elementary campuses.

TABLE 32. Changes in Teacher Ethnicity Before and After Downsizing at the 10 Elementary Campuses in North East Independent School District in San Antonio, Texas

| CAMPUS | A | B | C | D | E | F | G | H | I | J |
|--------------------------------|------|------|------|------|------|------|------|------|------|------|
| 2004-2005 | | | | | | | | | | |
| Total Teachers/2005 | 69.2 | 63.1 | 57.4 | 56.3 | 62.7 | 68.5 | 61.5 | 62.2 | 61.1 | 55.1 |
| 2004-2006 | | | | | | | | | | |
| African American/2005 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| African American/2006 | 0 | 1 | 2 | 2 | 1 | 0 | 0 | 1 | 0 | 0 |
| Hispanic/2005 | 6 | 10 | 5 | 14.4 | 3 | 28 | 7 | 10 | 6.1 | 3 |
| Hispanic/2006 | 3 | 6 | 5 | 11.3 | 1 | 6 | 6 | 10 | 6.5 | 3 |
| White/2005 | 62.2 | 50.1 | 50.4 | 40.9 | 57.7 | 39.5 | 54.5 | 51.2 | 52 | 51.1 |
| White/2006 | 49.1 | 35.5 | 35.4 | 32.8 | 51.1 | 43.3 | 48.7 | 41.6 | 44.1 | 48.4 |
| Asian Pacific Islander/2005 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 |
| Asian Pacific Islander/2006 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 |
| Total Teachers/2006 | 52.1 | 43.5 | 42.4 | 46.1 | 54.1 | 50.3 | 54.7 | 53.6 | 53.6 | 52.4 |

The Pearson r shows that in 75% of the reading scores and 95% of math scores, there is a negative correlation between student achievement and teacher years of experience. In other words, the trend indicated by this correlational study showed that student scores decreased in proportion to years of faculty experience. NEISD's policy regulates reduction in staff and states that those teachers with the fewest years of district experience are to be considered first when reducing teacher population. By implementing this policy at the end of the 2004 – 2005 school year, downsized campuses saw an increase in the average of teacher years of experience the following

school year. These results differed from Wheelan and Kesselring's (2005) claim that mature faculties are more capable of goal achievement.

Studies by Hargreaves (2005) and Bruno (2000) offered a possible explanation for the negative correlation. Hargreaves (2005) claimed that more mature teachers are likely to find ways to resist improvement efforts since these veteran teachers have seen numerous reform efforts come and go throughout their career. Also, mature teachers sometimes feel they are not given the respect due to them by new administrators who are tenacious about change and improving student achievement. Bruno's (2000) research indicated that many veteran classroom teachers spend time improving their own personal lives and less time engaged in school improvement. Bruno stated, "A teacher's age in the school organization, therefore, might dramatically impact participation rates in school reform and change activities."

Ingersoll (2001) stated that turnover rates larger than 25% will more likely have a negative impact on student performance. The data from Table 2 show there were only two campuses in the study that had a reduction in teachers greater than 25%. This is not a "turnover," as the downsizing resulted in a reduction in force and the teachers who left were not replaced.

Conclusions/Implications for Practice

Findings of this study for Research Question 2 should be a cause for concern for districts that downsize campuses. The results of this study would indicate that if the younger staff had been allowed to remain at the downsized campuses, the increase of student achievement scores from 2005 – 2006 would have been greater given the

negative correlation between student achievement and teacher years of experience and the positive effects of smaller campuses. Another consideration is the fact that the newer staff members were most likely teachers the current principal hired. Darling-Hammond (2003) indicated that effective leaders make it a priority to keep good teachers. Kaplan and Owings (2001) insisted that principals must “do everything possible to hire the highest quality teachers and then continually enhance teaching quality.” Hiring the best people is a trademark of outstanding companies (Collins, 2001). It stands to reason that the principals hired teachers who had goals similar to their own. For districts whose policy dictates that the last teachers hired are the first to be displaced, building high levels of trust and respect among teachers should be a priority for campus principals at downsized campuses.

Ethnic composition of faculty is another factor to consider. Research by Madsen and Mabokela (2005) and Chemers and Murphy (1995) suggested that faculties who represent the demographic differences in student population help maintain a “healthy school image.” According to the research, school leaders need to be mindful of maintaining the organizational diversity of the campus.

Recommendations

For Practice

This study was designed to study the impact of downsizing campuses on student achievement as reported by the Texas Academic Excellence Indicator System in the ten identified elementary schools in North East Independent School District in San Antonio, Texas. Conclusions have been drawn regarding the degree of influence

downsizing the student and teacher populations at the ten campuses had on student performance on the TAKS evaluation. The population studied included students in grades three, four and five in the areas of mathematics and reading. The two core areas were further broken down into students who passed, or “met standards” on TAKS, and those who mastered the objectives and received “commended performance.” The overall student population was studied as were the following student subpopulations of African American, Hispanic, White and Economically Disadvantaged. Based upon information provided in the review of literature, the findings in this study and the conclusions based on the research, the following recommendations are provided.

Based on the Research Study

1. The implication of this study is that both overall tested student population and White subpopulation TAKS scores returned statistically significant improvement at the 10 elementary campuses in the area of reading met standards at a .05 level after downsizing.
2. The implication of this study is that the Hispanic subpopulation returned statistically significant improvement at the 10 elementary campuses in the area of reading commended performance at a .05 level after downsizing.
3. The implication of this study is that the overall tested student population and the Hispanic subpopulation returned statistically significant at the 10 elementary campuses in the area of mathematics met standards at a .05 level after downsizing.

4. The implication of this study is that the overall tested student population and the Hispanic and White subpopulations returned statistically significant improvement at the 10 elementary campuses in the area of mathematics commended performance at a .05 level after downsizing.
5. The implication of this study is that the African American subpopulation was the only population in this study whose student achievement mean declined from 2005 to 2006 in the areas of reading met standards and mathematics commended performance.
6. The implication of this study is that African American subpopulation was the only population in this study to show a significant negative correlation between teacher years of experience and student achievement in commended performance for reading and mathematics prior to downsizing.
7. The implication of this study is that the overall tested student population, as well as the subpopulations of Hispanic, White and Economically Disadvantaged students showed no statistical significance in the correlational study at a level of .05 for the 2004 -2005 or 2005 - 2006 school years.

For Further Study

The scope of this study is limited to the 10 downsized campuses in the North East Independent School District. The information acquired in the review of literature demonstrates the gap existing in the research pertaining to how a district's growth impacts schools that are downsized. NEISD realizes that high turnover rates can negatively impact a campus and attempts to minimize such a circumstance through

staffing regulations. The district's Executive Staff will review any and all exceptions to the staffing guidelines when submitted in writing by the current building principal. These exceptions will be reviewed on a "case-by-case basis." Based upon information provided in the review of literature, the findings in this study and the conclusions based on the research, the following are recommendations for future research.

1. Further research of downsizing and its impact on the academic achievement of the African American subpopulation is needed.
2. Further research of downsizing and its impact on the academic achievement of the Economically Disadvantaged subpopulation is needed.
3. Further research on the ethnic composition of the faculty and its impact on the achievement of the different subpopulations is needed.
4. A qualitative study on climate and the impact downsizing has on the stakeholders at the impacted elementary school(s) is needed.
5. A longitudinal study in which future data is added to the data from this study to monitor the progress of the downsized campuses over time is needed.

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