Factors affecting school District Performance Scores in Louisiana

Ronnie Harrison
Louisiana Tech University

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FACTORS AFFECTING SCHOOL DISTRICT PERFORMANCE SCORES IN LOUISIANA

by

Ronnie Harrison, B. S., M. Ed.

A Dissertation Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Education

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We hereby recommend that the dissertation prepared under our supervision by Ronnie Harrison entitled FACTORS AFFECTING SCHOOL DISTRICT PERFORMANCE SCORES IN LOUISIANA be accepted in partial fulfillment of the requirements for the Degree of DOCTOR OF EDUCATION.

Supervisor of Dissertation Research

Curriculum, Instruction and Leadership

Department

Recommendation concurred in:

Advisory Committee

Approved:

Dean of the College

Dean of the College

Dean of Graduate Studies

Dean of the Graduate School

Terry McRathty

GS Form 13a
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ABSTRACT

The purpose of this study was to investigate the relationship between District Performance Scores (DPS) in Louisiana and (a) socio-economic status of students, (b) academic achievement using average ACT scores, (c) percentage of certified teachers, (d) district class size, (e) per pupil expenditure, and (f) percentage of minority students in determining why a district is considered low performing or high performing. The study investigated 68 school districts in Louisiana during the 2007-2008 school year.

The study noted significant differences in two of the six variables that may have an influence on the district performance score for the lower performing and the higher performing school districts. Socioeconomic status of students as measured by free/reduced lunch eligibility, ACT scores, have shown in past research, as well as this study to have an influence on student learning. After conducting an analysis of covariance, the study did not identify the percentage of certified teachers as having a significant impact on District Performance Scores. Per pupil expenditure, percentage of minority students, and the average percentage of students in a class throughout the district did not show a significant impact on District Performance Scores between the lower performing and the higher performing school districts. Class size represented the proportion of classes in the district with 20 or fewer students in the classes.
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CHAPTER 1

INTRODUCTION

The education process in Louisiana has experienced drastic changes since the late 1990s. Many of the adjustments to the way students are presently taught are due to federally mandated criteria found in the No Child Left Behind Act (NCLB) passed by Congress in 2001 (U. S. Department of Education, 2002). This educational reform was based on four pillars: (a) accountability results, (b) an emphasis on doing what worked based on scientific research, (c) expanded parental options, and (d) expanded local control and flexibility. Educational philosopher John Dewey emphasized the importance of using education to provide a “means for bringing people and their ideas and beliefs together, in such ways as will lessen friction and instability, and introduce deeper sympathy and wider understanding” (Spring, 1993, p. 190).

From recent reactions to NCLB mandates by many educational leaders, Dewey’s dream of having everyone working together to improve education may be farther from reality than when he spoke to educators about his educational dreams and beliefs (Dewey, 1944). Dewey wrote:

The primary ineluctable facts of the birth and death of each one of the constituent members in a social group determine the necessity of education. On one hand, there is the contrast between the immaturity of the new-born members of the group -- its future sole representatives -- and the maturity of the adult members
who possess the knowledge and customs of the group. On the other hand, there is
the necessity that these immature members be not merely physically preserved in
adequate numbers, but that they be initiated into the interests, purposes,
information, skill, and practices of the mature members: otherwise the group will
cease its characteristic life. Even in a savage tribe, the achievements of adults are
far beyond what the immature members would be capable of if left to themselves.
With the growth of civilization, the gap between the original capacities of the
immature and the standards and customs of the elders increases. Mere physical
growing up, mere mastery of the bare necessities of subsistence will not suffice to
reproduce the life of the group. Deliberate effort and the taking of thoughtful
pains are required. Beings who are born not only unaware of, but quite indifferent
to, the aims and habits of the social group have to be rendered cognizant of them
and actively interested. Education, and education alone, spans the gap. (p. 3)

In 1997, the Louisiana Legislature created the School and District Accountability
Commission where the primary purpose was to develop a statewide accountability system
for public schools. (Louisiana Department of Education, 2008a). In the same year,
legislation was enacted requiring significant adjustments in elementary and secondary
school systems. For example, Louisiana Revised Statute 17:10.1 established expectations
for students, schools, and school districts throughout Louisiana. Students are taught by
and tested on Grade Level Expectations (GLEs) that indicate what they should know by
the end of each grade. Teachers instruct students using GLEs in preparation for spring
testing and school administrators must ensure teachers are following state guidelines
Amrein and Berliner (2002) explained that high stakes testing has generated heated discussions among many Louisiana education stakeholders. Louisiana PK-12 public education has improved significantly, since the implementation of high stakes testing. The above researchers wrote that the recent improvement in education has changed the academic outlook and perception of the state throughout the country. Lunenburg and Ornstein (2004) stated that, in order to improve, changes are necessary to increase the effectiveness of schools.

Division exists about the impact of high stakes testing on the educational system of each state. Both sides have pros and cons points of views regarding high stakes testing. Hoy and Tarter (2004), for example, stated that when a decision on a particular administrative issue must be made, it is vital that both the pros and cons of this issue be examined before settling on an action. Policymakers view high stakes tests as tools to measure student achievement, raise standards, and hold educators and students accountable for the results (Freeland, 2000). In an interview with Education World, Harold Doran stated that high stakes testing allows educators and parents to participate in professional development targeted on test analysis (Delisio, 2002).

Opponents to high stakes testing state that the tests are too hard, expensive, and that they lead teachers to teach to the test (Wang, Beckett, & Brown, 2006). The researchers stated that some students have been found to suffer from extreme psychological pressure from taking these high stakes tests. Educators argue that high stakes testing narrows the curriculum and reduces instruction due to test preparation. Students are dismayed because of being tested on items that the teacher did not have time to cover before the test. Students and parents alike are requesting an end to these high
stakes tests (Freeland, 2000). Doran and Drury (2002) stated that reusing tests year after year may show gain, but not a result of actual gains in student learning. This increase may be a result of teaching to the test, narrowing the curriculum, coaching, and even cheating.

Doran and Drury (2002) also commented that it is the teachers, not the tests, who help to improve the quality of education. Wang, Beckett, and Brown (2006) also stated that high-stakes testing produces negative consequences such as higher dropout rates, higher retention rates, teaching to the test, unethical test preparation practices and lower motivation.

With new 1997 Louisiana legislation, teachers are being held more responsible for student learning than in previous years. Now, teachers are given the comprehensive curriculum, GLEs, and assessment guides to follow when teaching students. In addition to administering the contents of the comprehensive curriculum, educators must work diligently to ensure students are being exposed to GLEs to help increase the chances of student success. Stress level of teachers has increased since the implementation of high stakes testing. Still, state officials such as former Louisiana State Superintendent Cecil Picard, reported that the educational standards the state requires taught are obviously being addressed because test results from the fourth and eighth grades have shown a steady increase in academic achievement on the Louisiana Education Assessment Program test (LEAP) (Louisiana Department of Education, 2007).

State officials believe a positive outcome of high stakes testing has been a developmental component of the Louisiana Comprehensive Curriculum (Louisiana Department of Education, 2007). Teachers are given detailed information to help them
plan exactly what they need to instruct students for successful educational achievement. The curriculum found in the state comprehensive curriculum lists criteria for teachers and helps them design their lessons by suggesting various activities for teaching the lesson.

Another positive reason for using high stakes testing is that students are now held more accountable for learning (Louisiana Department of Education, 2007). Passing the Louisiana Educational Assessment Program (LEAP) in the fourth and eighth grade is a requirement for students to move to the next grade. There are specific expectations per grade level that students must master in order to be successful on these standardized tests and pass to the next grade. In addition, high school students in the tenth and eleventh grade must successfully complete the Graduate Exit Exam (GEE) as a prerequisite for graduation. They must also take classroom learning more seriously, thereby improving the classroom environment for teachers and other students.

Still, some high stakes critics believe high stakes testing is unfair to poor and minority students (Orfield & Kornhaber, 2001). The researchers further state that many of these students start school behind their fellow classmates because of their lack of educational exposure due to the environment in which they are raised. These students are still listed very low on Maslow’s hierarchy of human needs. Maslow’s concept of need hierarchy stresses that people need to develop to their full potentialities (Sirgy, 1986). The hierarchy includes the following needs and are ordered from lower to higher order (a) biological needs, (b) safety needs, (c) social needs, (d) esteem needs, and (e) self-actualization. Maslow suggests 10 ways that educators can help students meet these basic needs.
1. Teach people to be authentic, to be aware of their inner selves and to hear their inner-feeling voices.

2. Teach people to transcend their cultural conditioning and become world citizens.

3. Help people discover their vocation in life, their calling, fate or destiny. This is especially focused on finding the right career and the right mate.

4. Teach people that life is precious, that there is joy to be experienced in life, and if people are open to seeing the good and joyous in all kinds of situations, it makes life worth living.

5. Accept the person as he or she is and help the person learn their inner nature. From real knowledge of aptitudes and limitations we can know what to build upon, what potentials are really there.

6. See that the person's basic needs are satisfied. This includes safety, belongingness, and esteem needs.

7. Refreshen consciousness, teaching the person to appreciate beauty and the other good things in nature and in living.

8. Teach people that controls are good, and complete abandon is bad. It takes control to improve the quality of life in all areas.

9. Teach people to transcend the trifling problems and grapple with the serious problems in life. These include the problems of injustice, of pain, suffering, and death.

10. Teach people to be good choosers. They must be given practice in making good choices. Maslow's work translates into the classroom from the
administrative level to the actual day to day interactions between teachers and students. (Simons, Irwin, & Drinnien, 1987, p. 5)

Once food, shelter, health, and safety needs (numbers 1 and 2 on the Hierarchy) have been met, a student can begin to focus on learning. Because learning is the ultimate goal of education, students must be sufficiently motivated to reach for this goal. In order to maximize this motivational desire, educators need to target and then attend to the various needs of each student in order to maximize learning. By understanding Maslow’s Hierarchy of Needs, teachers can work toward realizing the basic needs that develop the foundation of higher learning, or actualization (Switzer, 2006).

The most effective voice in Maslow's Hierarchy of Needs is applied to classroom management by assuming that an individual’s behavior is determined by the strongest need. To summarize Maslow's ideas, the teacher must truly believe in her/his students. These needs are addressed through love and recognition of the importance of the individual in the classroom. Students are seen daily under all circumstances and work with human stimulus-response patterns. Teachers must also develop a positive, constructive and consistent self-image, thus, making the classroom environment structured and supportive. In this setting, teachers stress the intrinsic value of each student and attempt to motivate every student to do his/her best on their class work and assignments (Orlich, 1991). Educating children of today is considered a spiritual affair that still needs uplifting, fulfillment, and strong support (Delathre, 1995).

Kozol (1991) found from years of qualitative research that a large number of poor and minority students have not been taught effectively, especially poor minority students living in inner cities. Some of the teachers that serve these students are uncertified,
young, inexperienced, and not equipped with the pedagogical expertise to work in such an environment. Kozol also stated that to ask these students to perform successfully on a high stakes test is unjust. Additionally, teachers involved with high stakes testing feel more pressure and responsibility than other non-testing grades. The curriculum for grades involved in high stakes testing was found to be tighter and more comprehensive, thus allowing for less lesson creativity from the teachers (Mancuso, 2004).

Educational opponents of high stakes testing assert that the tests are not really preparing children to be productive citizens. Instead, these opponents conclude that educators should be placing more emphasis on educating children to be successful in the real world. Testing procedures have been criticized because some researchers do not see a correlation that shows students that pass the examination will become productive citizens in society. In charting student achievement trends in Louisiana, Amrein and Berliner (2002) examined National Assessment of Educational Progress (NAEP) data and found Louisiana students (a) gained 6 points on the nation in fourth grade mathematics from 1992 to 2000, (b) gained 0 points on the nation in fourth grade mathematics from 1992 to 1998 thus following the national trend, and (c) gained 13 points in eighth grade mathematics from 1990 to 2000. The researchers indicated that current data should be gathered to track student progress through inclusion of promotional high stakes tests. The question that arose during the study was whether growth occurred with the inclusion of the high stakes tests or were the schools and students already improving without them.
School Success and Failure

The academic success or failure of schools has an impact on school district performance because the individual score plays an integral role in growth labels for the district. District performance encompasses test scores, attendance, and dropout percentages from all schools in the district in addition to the percentage of certified and uncertified teachers. School performance scores are determined by a formula that encompasses student results on the Louisiana Education Assessment Program (LEAP), the integrated Louisiana Education Assessment Program (iLEAP), Graduate Exit Exam (GEE), and the dropout and attendance results of the school. Schools are assigned school performances scores on the results from the previous year and they must show academic improvement each year. The LEAP and GEE are criterion-referenced tests that assist in measuring student knowledge in English language arts, mathematics, science, and social studies. As with the LEAP and GEE, the iLEAP is also aligned with Louisiana content benchmarks and grade-level expectations in English language arts, mathematics, science, and social studies. The tests are administered to students in third, fifth, sixth, and seventh grades. Students in the ninth grade are only given the English language arts and mathematics portions of the iLEAP. This test is comprised of both norm-referenced and criterion-referenced assessment items (Louisiana Department of Education, 2007).

The norm-referenced assessments used by Louisiana educators in the past were the California Achievement Tests (CAT) and the more recent Iowa Tests of Basic Skills (ITBS) and the Iowa Tests of Educational Development (ITED) (Louisiana State Department of Education, 2009b). Norm-referenced tests are designed to compare the performance of a student to the performance of a normed group. Such tests are comprised
of general questions that do not have a specific focus of content. The normed group is a large population of individuals that have taken the test in the past. The tests measure performance in a wide variety of content areas. From these results, a baseline is statistically developed in order to be used for comparison purposes.

Popham (1999) defined validity as the extent to which tests yield scores in which valid inferences can be identified and reliability as the extent to which a test consistently measures what it is intended to measure. Although the validity of the scores is considered very high, norm-referenced tests can only be compared to the normed group and cannot be used for generalization purposes. Norm-referenced tests are reported in many forms, but the one used most often is percentile ranks. These tests show how much above or below the mean a student, class, school, district, or state score is categorized.

Popham also mentioned that norm-referenced tests were used for several years for reliability purposes. This produced a long-range reliability for educators to track their students. The percentile ranks on these tests go only to the 99th percentile, and complete mastery of all the items cannot be achieved due to their design. The scores from norm-referenced tests can provide assistance in guiding the improvement of instruction for general purposes.

Different from norm-referenced tests are criterion-referenced assessments that were developed to assess the fulfillment of specific predetermined criteria. They are designed to measure specific concepts that are developed by educators in a school, school district or state. Criterion-referenced tests cannot be used to compare performances of other individuals or schools. These tests provide specific information regarding the
specific skills that students have mastered when they take the assessment (Louisiana Department of Education, 2009b).

With learning outcomes coinciding with the requirements from the comprehensive curriculum, teachers can now be more specific regarding choice of classroom materials and the manner in which students are instructed throughout the school year. Parents can also track the progress of their child and possibly predict their child’s success based on their test scores at school. This prediction can take place because the comprehensive curriculum and GLEs are linked to the content and skills that students are required to know on the tests. If students perform well on tests at school, it will increase their chances of success on LEAP, provided the curriculum has been implemented and followed correctly by the teachers (Louisiana Department of Education, 2009b). The state standardized tests can help guide instruction and give teachers a specific blueprint on what needs to be taught, how much needs to be taught, and when it needs to be taught to students.

The standardized battery of tests can assess the mastery of a student or set criteria. Scores on the Louisiana examination label student academic performance as advanced, mastery, basic, approaching basic, and unsatisfactory.

The LEAP tests are designed to ensure that grade 4 and grade 8 students have adequate knowledge and skills before moving on to the next grade. Students in grade 4 are required to score Basic or above on either the English Language Arts or the Mathematics test and Approaching Basic or above on the other to progress to grade 5. LEAP is directly aligned with the state content standards. These tests
by law must be as rigorous as those of the National Assessment of Educational Progress (NAEP). Students can no longer receive a simple pass/fail score; The performance standards for English Language Arts and mathematics at grades 4, 8, and 10 and for science and social studies at grades 4, 8, and 11 are in scaled-score form. LEAP and GEE scaled scores range between 100 and 500 for all grades and content areas. Standards were set by determining the average scores of students in each level and selecting cut points that were between the scores for the two adjacent groups. (Louisiana Department of Education, 2008g)

By state statute, each Local Education Agency (LEA) shall participate in LEAP testing. Performance standards for LEAP and the Graduate Exit Examination (GEE) are equal to the rigor of the National Assessment of Educational Progress (NAEP) performance standards. The achievement level label descriptions and definitions are as follows:

- Advanced: A student at this level has demonstrated superior performance beyond the masterly level.

- Mastery (Exceeding the Standard): A student at this level has demonstrated competency over challenging subject matter and is well prepared for the next level of schooling.

- Basic (Meeting the Standard): A student at this level has demonstrated only the fundamental knowledge and skills for the next level of schooling.

- Approaching Basic (Approaching the Standard): A student at this level has only partially demonstrated the fundamental knowledge and skills needed for the next level of schooling.
• Unsatisfactory: A student at this level has not demonstrated the fundamental knowledge and skills needed for the next level of schooling. (Louisiana Department of Education Bulletin, 2008h, 741, p. 4-6)

Students are required to pass the English language arts and mathematics portion of the LEAP at a minimum combination basic/approaching basic level as a prerequisite to moving to the next grade. These tests are considered reliable in that they consistently provide evidence of the objectives students have mastered. They are exceptional indicators of the achievement level of each child tested.

The use of norm-referenced and criterion-referenced assessments can help in improving teacher instruction and curriculum enhancement. Louisiana education officials are moving away from norm-referenced assessments with the implementation of the iLEAP in 2004. Until recently the ITBS accounted for 30% of the School Performance Score (SPS). The test has recently been revised to reflect attributes of the LEAP with criterion-based questions. Criterion-referenced tests can be used by principals and teachers to measure student progress and assess the effectiveness of their programs to determine needed adjustment in the curriculum or teaching strategies (Louisiana Department of Education Bulletin, 2008h).

District Performance Scores (DPS) are computed from each individual school performance in addition to dropout and attendance rates at each school. The DPS is calculated by aggregating all of the students in the district.

DPS system is useful for evaluating relative performance. It does not provide a clear measure of student learning in absolute terms. Nevertheless, the criterion-referenced tests that constitute a major portion of DPS—namely LEAP and
GEE—actually measure the degree to which students are acquiring basic skills.

DPS is a useful tool to compare school districts across Louisiana. It tells how students are faring on standardized tests from year to year and how this relates to other students, schools, and districts across the state. (Baton Rouge Area Chamber, 2006, p. 4 - 5)

School districts must show academic improvement in nine subgroup areas. Louisiana school districts are categorized into six performance labels.

- 5 Stars: 140.0 and above
- 4 Stars: 120.0 to 139.9
- 3 Stars: 100.0 to 119.9
- 2 Stars: 80.0 – 99.9
- 1 Star: 60.0 – 79.9
- 0 or no Stars: 59.9 – 0 Academically Unacceptable. (Louisiana Department of Education, 2009a, p. 6)

Research shows that poverty, particularly at a young age, can play a negative role in student educational achievement (Kozol, 1991). In serving students in low socio-economic schools, educational officials must take a more proactive approach in helping children get closer to learning skills that they have missed through no fault of their own. Dossett and Munoz (2000) summarized that by meeting the needs of students the effects associated with socio-economic status can be conquered. Their research supported the hypothesis that students who were categorized as low socio-economic status scored lower academically than students who were not classified as members of low socio-economic status. In spite of all the unfortunate barriers that exist with these students, a small
percentage of schools throughout the United States have shown academic success with low socio-economic status students.

There is a large percentage of children enrolled in public schools lack the necessary skills to become successful learners. Cage (1984) mentioned that students at-risk for becoming school drop-outs can be predicted as early as third grade. Over 60% of their issues contributing to their at-risk designation, such as single parent homes and drug related issues, are due to environmental factors that are present in their poverty-stricken homes.

Poverty-stricken schools serve students that are classified under federal guidelines as at-risk for eventually dropping out of school. Because of the excessive number of at-risk students, many schools qualify for and participate in the federally funded Title I program that provides additional funding to schools that serve students from economically deprived families. A recent study examined common characteristics that contributed to high performing students located at high poverty schools (Kannapel, Clements, Taylor, & Hibpshman, 2005). The researchers wanted to know what characteristics and practices played a role in the level of academic success in various high poverty schools/ high schools in Kentucky. The list of schools had to meet certain criteria, such as being listed as a high poverty school, to be considered for the project. Eight schools located throughout the state agreed to participate. Interviews, observations, and full reviews of school documents were used to gather data. Schools were rated based on a uniform process and protocol called the Standards and Indicators for School Improvement (SISI) developed by the state of Kentucky.
The SISI encompassed 9 categories: (a) curriculum and assessment, (b) instruction, (c) school culture, (d) student, family, and community support, (e) professional development, (f) professional growth and evaluation, (g) leadership, (h) organizational structure and resources, (i) comprehensive and effective planning. Eighty-eight empirical indicators of success were divided among the 9 categories. The study found significant differences in 22 of the 88 standard indicators. The findings showed that high-performing schools spent an extensive amount of time on curriculum and used instructional strategies that benefited students. Moreover, there was a positive working relationship between administrators and teachers in an attempt to develop an environment conducive to student learning. Other significant differences were noted in school culture as well as organizational structure and resources.

Under the federal No Child Left Behind initiative, school officials are held accountable for the academic growth of their students. The school principal must ensure that teachers are instructing students to reach the goals set forth by the federal government. Teachers who work under the supervision of school principals can offer valuable insight regarding the effectiveness of their administrator. Reed and Roberts (1998) conducted a study to determine whether the nature of leadership in Ohio Title I school-wide project schools that were deemed effective by the United States Department of Education differed from the leadership in the Ohio Title I school-wide project schools that were considered ineffective. Through data interpretation, it was established that the views about leadership and school climate were correlated with the effectiveness or ineffectiveness of the schools. The study found the following about effective schools.
There was evidence of clear achievement goals and high expectations for student achievement in the effective schools. In addition there was evidence of a high level of parental involvement in the schools. The effective schools also showed evidence of a high level of shared decision making between the leadership team and the school faculty. In contrast, ineffective schools had characteristics opposite of the effective schools and showed a high level of concern with respect to how decisions were made and had evidence of numerous union-related problems (Kannapel, Clements, Taylor, & Hibpshman, 2005).

Some educators (Egelson & Harmon, 2000; Bohronstedt, Stecher, & Wiley, 2000) believe that smaller class sizes will benefit students academically. Reducing class size can help improve discipline and will allow teachers to devote more time to instruction and give more individualized attention to students. Egelson and Harman (2000) found that students in first and second grade outscored their counterparts in mathematics and reading when they were placed in smaller classes. Furthermore, when these students were placed in a regular sized fourth grade classroom, they still outperformed in reading the other group of students who were not placed in the smaller classes from first through third grade.

Bohronstedt, Stecher, and Wiley (2000) investigated an effort by the state of California to reduce class size in kindergarten through third grade in public elementary schools. The study found third grade students who attended small classes for one or two years showed positive gains in reading, mathematics, and language as compared to students in larger classes. Also, the results of the study showed similar differences in both
groups when race or ethnicity, family income level, or language status were held constant.

Legislators have shown a sincere desire to improve the public educational system in Louisiana (Louisiana Department of Education, 2009a). Through the analyses of past and present research, it is hoped that educators and other Louisiana officials will make the necessary decisions and adjustment to continue improving education. It is through these initiatives that it has become a necessity to further investigate what factors may play a statistical role in the success and/or failure of students involved in high stakes testing.

Purpose of the Study

The purpose of this study was to investigate the relationship between District Performance Scores (DPS) in Louisiana and (a) socio-economic status of students, (b) academic achievement (average ACT scores), (c) percentage of certified teachers, (d) district class size, (e) per pupil expenditure, and (f) percentage of minority students in determining why a district is considered low performing or high performing.

Significance of the Study

Since the implementation of the Louisiana School and District Accountability Commission, school districts are responsible for ensuring that student learning is not only taking place, but progress continues to be measurable (Louisiana Department of Education, 2009a). This study sought to identify variables that play a role in the success or failure of the school district as compared to its performance label assigned by the Louisiana State Department of Education.
Theoretical Framework

Educational officials and politicians throughout the United States have embraced many of the concepts espoused by Ralph W. Tyler who has been labeled by many people as the father of behavioral objectives (Bloom, Madaus, & Hastings, 1981). His vision for effective curriculum designs to improve student learning is still discussed and practiced today. The new Louisiana curriculum created for all students is designed with measurable objectives on which students can be tested to determine if they have achieved mastery in that subject matter.

Tyler wrote extensively on how educators could build an effective curriculum with worthwhile evaluations for students. Also, he emphasized that in order to be successful, educational programs must have clearly defined purposes or educational objectives. Tyler's book, *Basic Principles of Curriculum and Instruction*, is an exceptional blueprint that educational officials in Louisiana seemed to have followed when they designed the current statewide curriculum. Like Tyler's beliefs, standardized tests in Louisiana are designed to ensure that behaviorally stated objectives within the curriculum align with the performance data of the student examinations (Louisiana Department of Education, 2009a). Tyler insisted that educators should be able to answer the following questions upon designing and completing a curriculum: (a) What educational purposes should the schools seek to attain? (b) How can learning experiences be selected that are likely to be useful in attaining these objectives? (c) How can learning experiences be organized for effective instruction? (d) How can the effectiveness of learning experiences be evaluated? and (e) how can school officials work on building a curriculum? (Tyler, 1949).
Tyler further indicated that each curriculum should have appropriate learning objectives. The learning experiences introduced to students must be useful and they should give students the capacity to achieve a complete understanding of the objectives. The Louisiana comprehensive curriculum is designed with countless activities that teachers can use to help improve students’ chances of mastering instructional objectives.

Even when educators follow the directives by Tyler, there is still one underlying factor that must be considered and is very difficult to control: the actions of humans. Even with the best curriculum design, human motivation must be present in order for academic improvement to take place. Unfortunately, many students are not succeeding academically because they struggle to achieve their basic needs for personal growth. According to Abraham Maslow, a person will be able to grow when his or her basic survival needs are met (Wiles & Bondi, 1996).

As mentioned earlier, Maslow’s basic premise is that when a person reaches the highest level of hierarchy, the ability to develop wisdom and think through daily situations effectively and efficiently will become easier. Unfortunately, the state of Louisiana has a population with one of the highest poverty rate levels in the nation with many unhealthy children living without health insurance. Results from a three-year census released in 2003 showed Louisiana poverty rate at 20.3% compared to the national average of 12.3% (LSU Ag Center, 2007). National statistics have also shown the state has a high crime rate. With so many health risks, the state of Louisiana has been listed as first in the number of risk factors in comparison with the other states (United Health Foundation, 2007). With all of these issues, it becomes more difficult for students to
concentrate on academics rather than daily survival due to their environmental conditions. A proposed theoretical model for this study is presented in Figure 1.

![Figure 1. Theoretical Model. The relationship among (a) socio-economic status of students, (b) academic achievement (average ACT scores), (c) percentage of certified teachers, (d) district class size, (e) per pupil expenditure, and (f) percentage of minority students and district performance scores.]

Limitations

There are 68 school districts in Louisiana. An in-depth analysis was completed on each (N=68) to determine if a factor or factors play a role in the performance level of high and low performing school districts. An evaluation was conducted on the top performing and lowest performing school districts based on district performance scores results. The district performance scores were derived from standards established by the
state of Louisiana. They include standardized tests that are administered to Louisiana students. Therefore, a generalization cannot be used as a comparison with students in other states.

Research Questions

This study will be designed to answer the following research questions:

1. Is there a significant difference in district performance scores between the high performing school districts and the lower performing school districts when controlling for socio-economic status?

2. Is there a significant difference in ACT scores (college entrance examination) between the high performing school districts and the lower performing school districts when controlling for socio-economic status?

3. Is there a significant difference in certified teachers (percentage of certified teachers in the district) between the high performing school districts and the lower performing school districts when controlling for socio-economic status?

4. Is there a significant difference in district class size (average percentage of classes within district with 20 or fewer students) between the high performing school districts and the lower performing school districts when controlling for socio-economic status?

5. Is there a significant difference in per pupil expenditure (amount each district is allocated per student) between the high performing school districts and the lower performing school districts when controlling for socio-economic status?
6. Is there a significant difference in the district minority population (percentage of nonminority students with the district) between the high performing school districts and the lower performing school districts when controlling for socio-economic status?

Research Hypotheses

Statistical analyses will test the following research hypotheses:

1. There is a significant difference in district performance scores between the high performing school districts and the lower performing school districts when controlling for socio-economic status.

2. There is a significant difference in ACT scores (college entrance examination) between the high performing school districts and the lower performing school districts when controlling for socio-economic status.

3. There is a significant difference in certified teachers (percentage of certified teachers in the district) between the high performing school districts and the lower performing school districts when controlling for socio-economic status.

4. There is a significant difference in district class size (average number of classes within district with 20 or fewer students) between the high performing school districts and the lower performing school districts when controlling for socio-economic status.
5. There is a significant difference in per pupil expenditure (amount each district is allocated per student) between the high performing school districts and the lower performing school districts when controlling for socio-economic status.

6. There is a significant difference in the district minority population (percentage of nonminority students with the district) between the high performing school districts and the lower performing school districts when controlling for socio-economic status?

Definitions of Operational Variables

1. Academic Student Achievement: District-and state-level assessment results that include: (a) all available grades-levels of iLEAP, LEAP, and GEE Achievement Level data, which measure students' performance on state-prescribed curricula; and (b) national percentile ranks (NPRs) based on the iLEAP and The Iowa Tests results of students in five grade-levels. NPRs can be used to evaluate how Louisiana students compare with other students nationally (Louisiana Department of Education 2008c).

2. American College Test (ACT): The ACT is a standardized aptitude examination for college admission, developed by the American College Testing Program, consisting of multiple-choice tests in English, mathematics, natural-science reading, and social-studies reading as well as a personal student-profile section, graded on a scale of 0 to 36 and according to percentile rank (Hammonds, 2007).

3. Class Size: Dividing the number of students enrolled by the number of classes. Average class size refers to the division of students who are following a common
course of study, based on the highest number of common courses (usually compulsory studies), and excludes teaching in subgroups outside the regular classroom setting. In order to ensure comparability among school districts, the data will include only regular programs at the primary level of education (K-6). Researchers suggest that smaller class sizes contribute to better learning environment and possible assistance in increasing test scores (Lewit & Baker, 1997).

4. District Performance Score: District performance scores include the average of school performance scores for all schools within a district. It is comprised of the scores from the LEAP tests, the iLEAP and the Graduation Exit Exam (GEE), in addition to student attendance and dropout rates (Louisiana Department of Education, 2008d).

5. Minority Student: For this study, minority students will include African American, Asian or Hispanic students.

   a. African American/Black - a person having origins in any of the black racial groups in Africa;

   b. Hispanic American - a person of Spanish or Portuguese culture with origins in Mexico, South or Central America, or the Caribbean Islands, regardless of race;

   c. Asian American - a person with origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, including Pakistan, and the Pacific Islands (including, among others, Hawaii, Melanesia, Micronesia and Polynesia);
d. Native American - a person who is a member of a federally or state recognized Indian tribe, or whose parents or grandparents have such membership, including the native people of Alaska (Collegezone.com, 2009).

6. National Board Certification: An advanced teaching credential. It complements, but does not replace, a state’s teacher license. It is valid for 10 years, and renewal candidates must begin the renewal process during their eighth or ninth years. National Board Certification is achieved upon successful completion of a voluntary assessment program designed to recognize effective and accomplished teachers who meet high standards based on what teachers should know and be able to do. National Board Certification is available nationwide for most PreK–12 teachers. As part of the certification process, candidates complete 10 assessments that are reviewed by trained teachers in their certificate areas. The assessments include four portfolio entries that feature teaching practice and six constructed response exercises that assess content knowledge (NBPTS, 2009).

7. Per Pupil Expenditure: The total current expenditures for public elementary and secondary education divided by the fall membership (Louisiana Department of Education, 2009d).

8. Socio-economic Status (SES): For the purpose of the study, socio-economic status will be measured by students’ eligibility for free or reduced lunch prices based on criteria established by the federal government. SES is the economic and sociological combined total measure of a person's work experience and of an individual's or family's economic and social position relative to others, based on
income, education, and occupation. When analyzing a family’s SES, the household income earners' education and occupation are examined, as well as combined income, versus with an individual, when their own attributes are assessed. Socio-economic status is typically broken into three categories, high SES, middle SES, and low SES to describe the three areas a family or an individual may be labeled. When placing a family or individual into one of these categories any or all of the three variables (income, education, and occupation) can be assessed (Wikipedia, 2009).

9. Teacher Certification: Certification is a licensing process whereby qualified professionals become legally authorized to teach or to perform designated duties in K-12 schools under the jurisdiction of the Louisiana Board of Elementary and Secondary Education (BESE) (Louisiana Department of Education 2008e).

10. At-Risk Student: Under the Goals 2000: Educate America Act of 1994, an at-risk student is defined as one “who, because of limited English proficiency, poverty, race, geographic location, or economic disadvantage, faces a greater risk of low educational achievement or reduced academic expectations” (U. S. House of Representatives Report 103-446, pp. 99-100).

11. Criterion-Referenced Test (CRT) - A standardized test that is used to measure whether or not a student has mastered a specific skill in a designated subject area for students in third through tenth grade. Criterion-Referenced Tests are to be used with an absolute standard of successful achievement (Grosser & Spafford, 1995).

12. Graduate Exit Examination (GEE): Part of Louisiana’s criterion-referenced testing (CRT) high-stakes program. The (GEE) measures how well students in
tenth and eleventh grade have mastered the state content standards grades 10 and 11 (Louisiana Department of Education, 2008g).

13. Integrated Louisiana Education Assessment Program (iLEAP): Augmented norm-referenced tests at grades 3, 5, 6, 7, and 9 approved in January 2003 by the State Board of Elementary and Secondary Education (SBSE) (Louisiana Department of Education, 2008f).

14. Louisiana Education Assessment Program (LEAP): Part of Louisiana’s criterion-referenced testing (CRT) high-stakes program. The (LEAP) measures how well a student in grades 4 and 8 has mastered the state content standards (Louisiana Department of Education, 2008g).

15. Norm Referenced Test - A standardized test that is used to measure student achievement in subject areas compared to their peers in other parts of the U. S. Instructions for this test must be closely followed. They involve items that represent all levels of difficulty such as the IOWA Test (Grosser & Spafford, 1995).
CHAPTER 2

REVIEW OF LITERATURE

Introduction

This study examined School District Performance Scores and the impact the following factors may have on the scores: (a) socio-economic status of students, (b) academic achievement using average ACT scores, (c) percentage of certified teachers, (d) district class size, (e) per pupil expenditure, and (f) percentage of minority students in determining why a district is considered low performing or high performing that may have an impact on the success or failure of School District Performance Scores in Louisiana. This chapter is organized into seven sections that refer to a review of literature on the factors under investigation in this study in addition to a section regarding school accountability.

Accountability

The Elementary and Secondary Act (ESEA) of 1965 was considered one of the most important legislative initiatives ever designed for education in the United States (Caro, 1982). With the support of U. S. President Lyndon B. Johnson and his desire to fight the “War on Poverty”, ESEA was tabbed to improve elementary and secondary education in the United States. Federal funds were allocated through ESEA to assist in improving academic achievement for students attending schools with a large at-risk population.
In 1983, the National Commission on Excellence in Education, under the guidance of President Ronald Reagan, was created to examine the problems many people saw in public education in the United States. Through the work of the Commission a report, A Nation at Risk, was published and with it came harsh criticism regarding the state of education in the United States.

We report to the American people that while we can take justifiable pride in what our schools and colleges have historically accomplished and contributed to the United States and the well-being of its people, the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people. What was unimaginable a generation ago has begun to occur—others are matching and surpassing our educational attainments. (U. S. Department of Education, 1983, p. 1)

Soon after the report by the Commission, politicians across the nation worked more intently to address the problems associated with public education and President George H. W. Bush Sr., along with assistance from the nation's governors, released GOALS 2000: Educate America Act as a blueprint to turn around the nation's failing public school system. The legislation including improving “learning and teaching by providing a national framework for education reform; to promote research, consensus building, and systematic changes needed to ensure equitable educational opportunities and high levels of educational achievement for all students” (H. R. 1804, GOALS 2000, Sec. 1, p. 1-2). The legislation was also designed to reevaluate all federal education programs and to emphasize a system to create set skill standards and certifications for teachers.
Objectives in the GOALS 2000: Educate America Act also included the following:

1.) All children in America would start school ready to learn;

2.) All high school commencement rates would rise to at least 90%;

3.) All students would complete grades 4, 8, and 12 having demonstrated a competency over challenging subject matter;

4.) Teachers would have access to programs to continue improvement in professional skills and attend professional development sessions to gain knowledge that was necessary to instruct and prepare American students for the next century;

5.) Students would be among the top mathematics and science students in the world;

6.) Every American adult would be able to read and possess knowledge and necessary skills to compete in a global economy and exercise the rights and responsibilities of citizenship;

7.) Every school would be free of drugs, violence and the unauthorized presence of firearms and alcohol and would offer a disciplined environment conducive to learning;

8.) Every school would promote partnerships that would increase parental involvement and participation in promoting the social, emotional, and academic growth of children. (H. R. 1804, GOALS 2000, Sec. 102, p. 5)

With the implementation of GOALS 2000: Educate America Act, law makers of Louisiana have required more educational accountability on professional educators, parents, and students throughout the state (Louisiana Department of Education, 2003).
Louisiana officials implemented an educational comprehensive reform plan in 1998. The purpose of the reform was to insist that all states strive to improve academic achievement among all students and meet all other federal regulations outlined in the No Child Left Behind Act of 2001.

The No Child Left Behind Act of 2001 requires all states to adopt or amend their accountability systems to meet new federal requirements. To this end, all states were required to submit "Accountability Workbooks" to the USDOE on January 31, 2003. The Accountability Workbook submitted by Louisiana maintained most of the original, core elements of Louisiana's School and District Accountability System, but also included additional components as required by NCLB.

Louisiana's Workbook was peer reviewed on March 31, 2003; recommended revisions to Louisiana's Accountability Workbook were completed on May 16; Louisiana's plan received full approval from the USDOE on May 17, 2003.

(State officials insist that all public schools show continuous improvement in academic achievement, attendance, and dropouts. It was required that improvements must be measured in student, school, and district growth on an annual basis.

Each year, schools must show improvement in the School Performance Scores by meeting a growth target. Growth targets represent the amount of progress a school must make every year to reach the state's SPS goal of 120 by the year 2014. As required by No Child Left Behind (NCLB), schools must also show improvement or Adequate Yearly Progress (AYP) in up to nine student subgroups in English Language Arts and Math. (Louisiana Department of Education, 2008b)
Tolbert (2003) referred to Bernauer and Cress (1997) definition of accountability as "the belief that teachers and schools should answer to the public for the academic achievement of students. State educational accountability policies were enacted as a way of forcing administrators and teachers to provide evidence that their students were making sufficient academic progress" (p. 1). Generally, there are two types of accountability (a) system accountability and (b) student accountability. System accountability is a way to keep stakeholders, both inside and outside of the educational system, informed about how well students are progressing in school and meeting intended results. The purpose of student accountability is to find out how well individual students are achieving in the curriculum or on the content standards that have been established in the state. The individual student reaps the rewards or consequences based on his or her performance.

Louisiana’s accountability system is outlined in Bulletin 111 (Louisiana Department of Education, 2008d). This policy states every school in Louisiana will be held accountable for student achievement based on the Board of Elementary and Secondary Education (BESE) guidelines. The No Child Left Behind Act (NCLB) of 2001 states that the Adequate Yearly Progress (AYP) must have the same high standards of academic achievement for every public elementary and secondary school and that schools will be evaluated on AYP through the school performance score and subgroup components of the Louisiana School Accountability System. Bulletin 111 is updated regularly when changes to policies occur.

Louisiana’s accountability system has some of the highest standards toward meeting the NCLB requirements. In a news report from 2003, 85% of Louisiana’s public
schools would be labeled as low-performing based on the state’s accountability plan (Fletcher, 2003). Accountability is defined as “the idea of holding schools, districts, educators, and students responsible for results” (p. 1). In 2001, the No Child Left Behind Act (NCLB) focused on accountability in an effort to ensure that all students were performing at or above grade level. Schools also had to demonstrate growth, report achievement results publicly, and continuously work to improve performance.

High-stakes testing is the method that Louisiana uses to determine if a school or district has shown improvement. For a school not showing AYP and meeting its growth target, consequences were stated. In a state-by-state comparison of high-stakes tests, Louisiana demonstrated the following: (a) uses standards in some of all of the four core subject areas, (b) uses tests aligned to state standards, (c) uses tests to promote students, (d) and uses high school graduation exit exams. Schools can receive the following labels based on test scores: (a) School in Decline, (b) No Growth, (c) Minimal Academic Growth, (d) Recognized Academic Growth, (e) Exemplary Academic Growth, or (f) No Label Assigned (Louisiana Department of Education, 2009a).

Schools who fail to have a school performance score of 75.0 effective for the fall 2010 school year will be classified as an Academically Unacceptable School 1 (AUS). The schools that have a SPS below 75.0 will be at risk for stake takeover. Schools must revise the school improvement plan, offer school choice, and have a Scholastic Audit. If the school does not make AYP, it becomes an AUS 2 school. Title I has to offer Supplemental Education Services (SES), implement an up to date School Improvement Plan (SIP) based on a Scholastic Audit, have Quarterly Implementation Reports, and are eligible for a Turn-Around Specialist. If AYP is not made for the next year, the school is
an AUS 3 school and has to add a Corrective Action List, develop a reconstitution plan, and is eligible for a Distinguished Educator (DE). If a school becomes an AUS 4 school, a reconstitution plan must be submitted. If the school becomes AUS 5 or 6, the reconstitution plan must be implemented. If the school is in AUS for over six years, the school is eligible to become part of the state operated Recovery School District (RSD).

**Socio-economic Status**

With the implementation of the federal No Child Left Behind legislation (NCLB), the improvement of education has become paramount throughout the nation. The legislation requires measureable improvement in student standardized test scores. The NCLB legislation has increased the pressure on educators to close the achievement gap between students of different subgroups. Many educators who believe standardized scores carry too much weight site the government’s lack of consideration for schools that are located in poverty stricken communities and the socio-economic status of the families who live in the areas (Bainbridge & Lasley, 2002).

Many studies of high performing, high poverty schools have been conducted both nationally and in various states, and have addressed the elementary, middle, and high school levels. “Recent research indicates that the effects of school size may depend on the SES of students. Findings show consistently that the relationship between achievement and socio-economic status was substantially weaker in smaller schools than larger schools, that is, students from impoverished communities are much more likely to benefit from smaller schools” (Tajalli & Opheim, 2004, p. 45).

In another study, Barton (2003) used specific criteria, such as aggregate test scores for all students at a particular proficiency level of narrowing/closing the
achievement gap and sustaining the improvement over time, to identify schools as high performing. A regression analysis of the correlates of student achievement in schools that have between 65% and 75% of students characterized as low income was conducted. Two hundred fifty-seven schools in 145 districts participated; 5,500 teachers and 257 principals responded to surveys. Kentucky schools that were high performing and high poverty were studied comparing eight elementary schools that closed the achievement gap to matched schools that had not. Practices and policies at these schools were compared with average or low-performing schools, also identified using aggregate test scores. The study used multiple methods of data collection including surveys, observations, document analysis, and interviews. Results of the research generally showed that schools that serve children from high poverty backgrounds are most successful when:

- Curriculum was rigorous and focused on the future and when expectations for student performance were high.
- Support was immediately provided to students on track through an early warning system rather than to remediate them once they had fallen behind by a grade.
- Teachers were well prepared and assigned based on capability and need rather than on seniority or preference.
- Administrators, teachers, and counselors accepted responsibility for student success, pace of curriculum, and collaborated often.
- Environments were safe and orderly.
• Data were used to improve curriculum and instruction and to understand need for differential instruction and not just for tracking student performance over time.

• Adults formed professional communities, had a strong work ethic, deliberately shared practices that worked, spent time in collaboration, and connected development to analysis of student needs.

• Morale and climate were positive in the school, and adults felt that they had influence on decisions.

• Class sizes were geared toward need rather than uniform

• Curriculum was aligned to standards and assessments

• New teachers were socialized into the high academic focus environment and assisted with instruction

• Goals were consistent and consistently understood.

• Barriers to taking higher-level coursework were removed.

• The focus was on academic achievement and not rule-following. (Barton, 2003, p. 36-37)

Barton concluded that successful schools scored highest on indicators such as safe and orderly environment, expectation for student performance, and to teachers accepting their professional role in student performance teachers. Also, Barton commented that educators within productive schools accept their professional role in the success and or failure of students on standardized tests. Successful educators also assign staff according to their strengths, as well as communicating regularly with families, caring about students, in addition to valuing and celebrating student achievement. In addition, being
committed to equity and showing an appreciation for diversity was depicted as strong indicators of successful schools.

Tajalli and Opheim (2004) designed research that focused on student performance in economically disadvantaged schools. The researchers noted that previous studies concluded that school-based decision-making had less effect on student learning than the socio-economic status. Tajalli and Opheim stated that the central question of their study was to discover what factors contributed to the success of some and the failure of some other schools containing a high number of low socio-economic students. This qualitative study collected data from the Texas Education Agency on more than 7600 Texas public schools. The data collected focused on finances, students, and school characteristics. According to the researchers “three separate forward logistic regressions were tested to determine which independent variables were predictors of school performance” (p. 49).

The researchers examined the data grade by grade to determine which independent variables seemed to have an effect on school performance. The results of the logistic regressions were used to form models of each dependent variable, which identified the independent variables that seemed to have a greater relationship to school performance. The study utilized three dependent variables and fourteen independent variables to determine the relationships between the two. The population used in this study originated from Texas schools that had more than 50 students and had greater than 50% population that was economically disadvantaged. Also, schools used in this study were determined to be low or high performing according to test data. Data included the assessment passing rates of fourth, eighth, and tenth graders for high and low performing schools.
The researchers defined low performing schools as those with lower than 50% passing rates, and high performing schools as those with 90% or more. Data were evaluated by grade level to determine which independent variables seemed to have an effect on school performance. The results of the logistic regressions were used to form models of each process variable, which tend to be variables that school systems more or less control. The process variables in the study were the following: (a) school characteristics (school size, student/teacher ratio, and campus expenditures by function and program); (b) teacher characteristics (salary and experience levels); and (c) the global resource measure of per pupil expenditure (PPE). The researchers determined that socio-economic status had an effect on school performance. The higher the percentage of low socio-economic students that were enrolled in a school, the lower the students in the school performed academically.

Also, factors that educators had control over showed a significant impact on school performance. "The academic performance of 4th and 8th grade schools is adversely affected by the proportion of economically disadvantage students in these schools. Our results show that, for each percent increase in the number of economically disadvantaged students in a campus, the odds of the campus being a high-performing case drops by 6.3% and 8.4% respectively for fourth and eighth grade campuses" (Tajalli & Opheim, 2004, p. 51). Spending decisions, instructional methods, and teacher salaries showed a correlation to school performance. "Although SES remained a significant factor even within the context of economically disadvantaged schools, we discovered that some important process, i.e., those policy areas controlled by educators and administrators,
were also significant. As expected these variables had different effects at different levels of instruction” (Tajalli & Opheim, 2004, p. 51).

Borman and Rachuba (2001) investigated characteristics that distinguished academically successful, or resilient, elementary students from minority and low (SES) backgrounds from less successful counterparts. The study focused on African American, Hispanic, and Caucasian students. It was mentioned that previous studies only focused on one racial/ethnic group. The researcher formulated and tested four distinct models of resilience and risk factors. The four distinct models were (a) the effective school models, (b) peer-group composition, (c) school resource model, and (d) supportive school community model. It was also noted that individual characteristics, school characteristics, and interactions between individual and school characteristics all may contribute to students’ risk of academic failure.

Questionnaires were used to help determine individual characteristics, peer-group characteristics, school resources, effective school variables, and supportive school environment. Forty thousand students from three grade cohorts (i.e., first, third, and seventh grade) were studied over a four-year period. Students, parents, teachers, school principals, and school district personnel completed questionnaires. A series of multivariate analyses of variance (MANOVAs) with resilience and race/ethnicity as factors of classification were used to answer primary questions of this study. Results were gathered and put in the form of tables. Prospects data collection was used to determine additional information in one section as well.

With individual characteristics it was indicated that low SES Caucasian students tend to have a greater sense of control over their lives than African Americans and have
stronger feelings of efficacy in mathematics than Hispanics. According to researchers, despite the potential risk of attending school with under-achieving, disadvantaged minority students, the results suggested that it had little bearing on the resilience status in the peer-group characteristic category. In school resources, it was determined that low SES Hispanic students were more likely to attend larger classes than low SES Caucasian and African American students. Little evidence supported low SES minority students attended schools with poorer levels of resources than low SES Caucasian students. It was determined that low SES Caucasian students held an advantage over low SES African American students in which teachers more closely monitored progress in the effective schools variable group. Within the supportive school community, Caucasian students attended schools with safer and orderly environments than minority students. Parental involvement was supported in Caucasian and African American students over Hispanic students. Therefore, a more supportive school environment was associated with students' academic resilience.

The researchers concluded that the double jeopardy concept of being poor and a minority exposes greater risks and fewer resilience-promoting conditions. It was found that minority students from the sample have poorer levels of academic self-efficacy and are exposed to school environments that are less conducive to academic resilience. Also, it was determined that more research is needed to assess the findings of effective school characteristics in shaping African American students resilience. The researchers expressed that the risk associated with attending under-funded and under-resourced schools do not appear to be associated with student outcomes. Shielding disadvantaged
children from risk within the homes, schools, and communities is more likely to foster academic success.

ACT Test

The American College Test ACT is designed to measure academic skills that are taught in typical college prep curriculum in high school and are necessary for the first year of college (Hammonds, 2007). The ACT assessment provides an objective measure of student academic achievement and readiness for college in English, mathematics, reading (including social science and literature), and science. Allen and Sconing (2005) conducted a study to create benchmarks of readiness for first-year college courses as a function of ACT scores. For each college course included in the sample a cutoff score was found that represents the ACT test score that gives a 50% probability of success in the college course.

The benchmarks were set for a 50% probability of earning a grade of “B” or higher in each course. The courses considered for college success and the benchmark score on the ACT Assessment tests are as follows: (a) English Composition, 18 on the ACT English; (b) College Algebra, 22 on the ACT Mathematics, (c) social science, 21 on the ACT Reading; (d) Biology, 24 on the ACT Science test. It is reported that students who score at these ranges on the ACT will have a “reasonable chance of success in those college courses” (Allen & Sconing, 2005, p. 16). Typical colleges were determined by analyzing ACT composite scores and the academic performance of their students over the previous two years.

For English Composition, 73% of the students in the sample had an ACT English score greater than, or equal to, their college’s cutoff score. Of these students, 69%
earned a grade of “B” or higher, while 86% earned a grade of “C” or higher. In comparison, 39% of students below their college’s cutoff earned a grade of B or higher, while 72% earned a grade of “C” or higher. We see that a student with a benchmark ACT English score of 18 has an 80% chance of earning a “C” or higher in English Composition at the typical college.

For College Algebra, 36% of the students in the sample had an ACT Mathematics score greater than, or equal to, their college’s cutoff score. Of these students, 64% earned a grade of “B” or higher, while 81% earned a grade of “C” or higher. In comparison, 34% of the students below their college’s cutoff earned a grade of “B” or higher, while 61% earned a grade of “C” or higher. We see that a student with a benchmark ACT Mathematics score of 22 has a 75% chance of earning a “C” or higher in College Algebra at the typical college.

For Social Science, 62% of the students in sample had an ACT Reading score greater than, or equal to, their college’s cutoff score. Of these students, 64% earned a grade of “B” or higher, while 86% earned a grade of “C” or higher. In comparison, 37% of the students below their college’s cutoff earned a grade of “B” or higher, while 68% earned a grade of “C” or higher. We see that a student with a benchmark ACT Reading score of 21 has a 78% chance of earning a “C” or higher in Social Science at the typical college.

For Biology, 36% of the students in the sample had an ACT Science score greater than, or equal to, their college’s cutoff score. Of these students, 62% earned a grade of “B” or higher, while 86% earned a grade of “C” or higher. In comparison, 36% of the below their college’s cutoff earned a grade of “B” or
higher, while 68% earned a grade of "C" or higher. We can see that a student with a benchmark ACT Science of 24 has an 80% chance of earning a "C" or higher in biology at the typical college. (Allen & Sconing, 2005, p. 16 - 19)

Certified Teachers

States are challenged to find educators who are qualified, willing and capable of teaching in public schools. The Louisiana Department of Education (LDOE) determines the necessary criteria by which public school teachers become certified to teach in Louisiana (R.S. 17:7.1). Alexander and Fuller (2004) examined the importance of teacher training and the significance of teacher certification in Texas. Teacher characteristics, years of education, content knowledge and years of teaching experience were investigated to determine the effect on student outcomes. In addition to being certified, a teacher in Louisiana must be highly qualified teacher. That is, they must meet certain guidelines mandated by NCLB legislation. In 2003, the Louisiana Department of Education (LDOE), the Board of Secondary Education (BESE), and the Board of Regents developed the necessary criteria to classify teachers in Louisiana as highly qualified.

Alexander’s study relied on four different sets of data. The first data linked individual students with individual teachers from 1997-98 and 1998-99 academic years. The second data came from the Texas State Board of Educator Certification, which included demographics of teachers (race/ethnicity/age/gender), years of experience, and areas of certification. The third set of data came from the Texas Education Agency (TEA), which made adjustments for student demographics, program assignments such as gifted, special education and limited English proficiency and test scores on Texas Assessment of Academic Skills (TAAS) that were measured by the Texas Learning Index
(TLI). The last set of data was obtained from TEA, included school and district level information on student demographics and total enrollment. Characteristics of teachers and students were taken into account in the analysis including the teacher’s years of experience. It allowed for the value-added model to form a baseline from one year to the following year.

In this study, three different variables were used that consisted of the following: (a) Student: student race, free/reduced lunch, special education, gifted/talented, Limited English Proficient (LEP) and at-risk of dropping out students; (b) Teacher: information was divided into different years for teachers who were Texas certificated, 0 - 5 years, 6 - 10 years, 11 - 20 years and greater than 20 years; and (c) Campus: divided into economically disadvantaged, LEP and exemplary (EXEMPL).

Major findings indicated that compared to students with non-certified teachers, students with certified teachers on average performed better on the 1999 TAAS math assessment. Controlled factors in the study included student demographics, school demographics, prior student achievements, and teacher’s years of teaching experience. Alexander and Fuller (2004) reported the 1999 TLI students’ scores were significantly different when students from certified non-certified teachers were analyzed. On average, students’ had significantly larger mathematics gains on the TAAS with certified teachers than those who had non-certified teachers.

National Board Certification

There has been a push over the years not only to place certified teachers in the classroom, but also to increase the number of National Board certified teachers within the school. A Nation Prepared: Teachers for the 21st Century was a publication designed to
help the importance and vision to place highly qualified teachers in the classroom (Carnegie Forum on Education and the Economy, 1986). The authors of the publication “recommended the creation of the National Board for Professional Teaching Standards to establish high and rigorous standards for what teachers should know and be able to do and to certify teachers who meet those standards” (NBPTS, 1991, p. 5).

National Board for Professional Teaching Standards (NBPTS) identifies quality teaching through an extensive review of teacher portfolios and assessment centers. Teachers’ assessments are judged against five core propositions NBPTS believes represent what a teacher should know and be able to do. Teachers often spend over a year developing video portfolios and evidence of teaching improvement in preparation for certification. The process is rigorous, as indicated by the 48 percent passage rate for those attempting certification. Teachers who pass the board’s standards are referred to as National Board certified Teachers (NBCTs). (Goldhabler & Anthony, 2004, p. 1)

Bundy (2006) also found through other researchers (i.e., Goldhabler, 2002; Ferguson, 1998; Haycock, 1998) that “the commission’s emphasis on teacher quality was justified, as the quality of the teacher is consistently found to be an important predictor of student achievement” (p. 2).

Whitson (2006) conducted a study that examined the extent to which National Board certified teachers differ from other teachers in terms of student achievement results and teaching practices. The researchers identified the two groups of teachers through student achievement scores on state tests using the value-added methodology in the first phase. While previous studies have examined the student achievement gains of National
Board teachers, this was the first time researchers supplemented those results with actual classroom instruction evaluations. Teams headed by the University of North Carolina at Greensboro conducted the observations, which focused on what teachers and students were doing in the classrooms as compared to other teachers and other classrooms.

The study was conducted in two phases. In the first phase, mathematics and reading student achievement results of fifth grade National Board certified teachers were compared to results of non-certified teachers. The study found that teachers with the highest achievement gains also had the highest mean ratings during classroom observation. Still, when observed in the classroom, it was more difficult to identify measured variables on which National Board certified teachers excelled when compared to other teachers. In the second phase, 21 National Board certified teachers reported taking more post-master's coursework, were rated higher on instructional planning practices based on an interview, and submitted typical reading comprehension assignments that received higher ratings for cognitive challenge than did their non-certified colleagues. The researchers concluded that National Board certified teachers may differ from other teachers on dimensions similar to those valued in the certification process such as planning and use of high quality curricular materials.

A comparison group of 16 National Board certified teachers who were identified solely on high student achievement had higher mean ratings than both the certified teacher group and the other group of non-certified teachers identified by low student achievement in areas such as observed dimensions of classroom management, classroom organization, positive relationships with students, and encouragement of student responsibility for learning.
Bundy (2006) conducted a study seeking to determine if National Board certified teacher presence in schools had a direct effect on student performance or an indirect effect on student performance mediated by working conditions of teacher empowerment, leadership and professional development. Also, the study investigated the effectiveness of the state's National Board certified teachers' incentive program by measuring its impact on raising student achievement.

First, state accountability composite test scores for the 2003-2004 school year were obtained from the North Carolina public schools to be used as a measure of student achievement and dependent variable. A linear regression was computed to estimate the percentage of variance in student achievement explained by student racial composition, socio-economic status, teacher experience and National Board certified teachers' status. Secondly, North Carolina schools were divided into quartiles based on the percentage of National Board certified teachers in the school's faculty. Last, the study tested the effectiveness of National Board certified teachers' working conditions.

The North Carolina study included using three of the five indices of teacher working conditions created by Southeast Center for Teaching Quality (a) teacher empowerment, (b) leadership, and (c) professional development (Hirsh, 2004). Also, three linear regressions were used to determine if the end product of ratio of National Board certified teachers were significant in explaining the variance in the indices of teacher empowerment, leadership, and professional development. The researcher reported in the study that the linear regression in step one showed a ratio in North Carolina's classroom significantly (p<.05) predictive of student performance. An increase in the ratio of National Board certified teachers of 10% in a school would result in the state's
accountability program score increase of nearly 1% on a one hundred point scale. The results indicate that National Board certified teachers have a positive school-wide effect over and above student racial composition and socio-economic status. As in the research conducted by Sutton and Soderstrom (2001), the findings in this study were consistent with other comparable literature results in clarifying that race and socio-economic status are the strongest predictors of student achievement.

Bundy (2006) stated that National Board certified teachers have a larger effect on student accomplishment than other measures of teacher quality. Bundy also stated that National Board certified teachers are less likely to teach in districts with high poverty and minority rates for the reason that the economic incentives are unequally distributed to affluent districts. The result from part two of the analysis suggested school wide performance continues to rise as more National Board certified teachers are added to the school workforce. There was a considerable difference between student accomplishments in the medium and high groups, confirming that student performance gains continue to increase as additional National Board certified teachers are added to the staff. In conclusion, the results of the study suggest that North Carolina was receiving a positive return on its investment in subsidizing National Board certification. This study has demonstrated increasing concentration of National Board certified teachers is likely to positively affect student performance.

The results of this study are consistent with the literature, which suggests students of NBCTs outperform students of non-certified teachers. This study found a small school-wide difference in student test scores in North Carolina schools with larger
proportions of NBCTs. This suggests that the state is receiving a positive benefit from its investment in the current NBCT incentive program. (p. 5)

Is it possible to judge teacher effectiveness and student achievement using measures other than direct teacher observation? Goldhaben and Anthony (2007) conducted a longitudinal study to investigate whether teachers that held National Board Certification actually contributed to improved student achievement. The researchers insisted on using a large sample of students and teachers, which would allow for the use of more sophisticated statistical models that account for potential bias. The sources of the data are teacher and student level administrative records from the North Carolina Department of Public Instruction for the school years 1996-1997 through 1998-1999.

North Carolina was chosen as an ideal state because of the large number of National Board certified teachers and because the state accountability system requires yearly testing to track progress over several years. The study was restricted to students in third through fifth grades because those students are more likely to have only one teacher per grade, allowing the researchers to link students’ records to their teachers. The researchers were able to match 80% of student scores to their teachers. The data showed that there were increases in reading and math scores with students that were taught by teachers that were National Board certified.

Researchers in another study investigated how student achievement would affect educators who had been certified by the National Board of certified teachers (National Center for Analysis of Longitudinal Data in Education Research, 2007). In this study, the researchers wanted to determine the impact(s), if any, that National Board certified teachers contributed towards the increase of student achievement on low and high stakes
tests. They believed that teachers who have passed the intensive requirements to become National Board certified would show greater effectiveness in the classroom than those that were only state qualified. This would affect both low and high stakes testing scores for all students, regardless of race, ethnicity, socio-economic levels, or prior academic achievement.

The researchers used employee records to identify teachers that were National Board certified and the time when they were certified. To determine the effectiveness of National Board certified teachers, they examined the scores of reading and mathematics from Florida’s Comprehensive Achievement Test (FCAT-SSS) and the Standord-9 achievement test (FCAT-NRT). The FCAT-SSS is a criterion-based test to measure the skills that students are expected to master at each grade level and the FCAT-NRT is a norm-referenced test. These tests were administered to students in grades 3-10. The FCAT-SSS is aligned with Florida’s state curriculum guide and gives credit for constructive response questions in mathematics even if the answer is incorrect. In examining the reading scores, teachers with National Board certification were more productive than those who had not; however, there was no significant difference in mathematics scores.

Sanders, Ashton, and Wright (2005) performed a study that compared National Board certified teachers to other teachers and the impact it may have on student achievement. Mathematics and reading test scores from two districts in North Carolina were used in the study. Three research questions were analyzed through four models. “the models form a two-by-two array based on (a) which response variable was used and (b)
whether or not a random effect for teacher-within-certification-status was included” (p. 4).

The researchers reported contradictory results as compared to other studies. “Overall, based on the hierarchical models, students of National Board certified teachers did not have significantly better rates of academic progress than students of other teachers and estimated effect sizes were relatively small... As a result, a student randomly assigned to a NBCT is no more likely to get an “effective” (or an “ineffective”) teacher than a student assigned to a non-NBCT” (Sanders, Ashton, & Wright, 2005, p. 2). The researchers did agree that teachers that possessed similar national board teacher certification showed significantly larger differences in student achievement than the teachers with other certification.

Even though the researchers concluded that academic progress did not improve due to the type of teachers, there were still reported instances in which students that were taught by National Board certified performed better on certain tests. The students taught by the National Board certified teachers did show “statistically significant effects in mathematics” (p. 6). The researchers later dismissed these findings as “hierarchical or clustered structure” and believed the certification process had too many flaws to effectively categorize a teacher as effective or ineffective (p. 7-8). The mandates set forth by NCLB for all schools to have highly qualified teachers have increased the number of teachers applying to become a National Board certified teacher. The additional pressure placed on teachers to increase high stakes testing scores made it critical that educators become more effective.
Class Size

Countless numbers of research studies have been performed to measure the impact of class size on student achievement. A study completed by Princeton University claimed smaller classes in early grades narrowed the achievement gap between African American and Caucasian students (Henry, 2001). The report stated that students placed in smaller classes showed a greater impact on African American students as they were more likely to take the American College Test (ACT) and Scholastic Aptitude Test (SAT). A study by Bell (1998) concluded that urban students, particularly minority students, showed more benefits than their peers. Burns (2003) made an important assessment when he wrote “class size reduction works best when coupled with professional development opportunities for teachers. Educators should be trained in new teaching techniques that take advantage of smaller class sizes” (p. 10). Professional development is vital in that it has been documented that many teachers throughout the United States are not equipped to teach students well. Many times, the more challenging the subject, the greater the percentage of unqualified teachers (Lartigue, 1999).

In the mid-1990s, a Tennessee Student Achievement Ratio (STAR) student determined that students from small classes had significantly higher scores on standardized tests in every subject tested (Finn & Achilles, 1990). Later, Renslick (2003) conducted a study in Tennessee with kindergarten to third grade to determine if class size of 13-17 students would have a positive impact on student achievement compared to 22-26. The study used approximately 11,600 kindergarten to third grade students, 1300 teachers and 48 school districts. The cost of class-size reduction was based on reducing a class size to 17 students in a 1,000 student school. There is strong evidence of academic
improvement when children in kindergarten, first grade and second grade are in classes of 13-17 students. These following scores are based on reading assessments:

- Kindergarten whites and minorities went up .15.
- First grade whites score went up .15 while the minority students went up .35.
- Second grade whites scores were at .10 while the minority students went up .25. (Renslick, 2003, p. 25)

There was a strong confirmation of academic improvement in reading and mathematics during the first two years (i.e., kindergarten and first grade) students spent in small classes. Resnick (2003) stated that teachers in smaller classes paid greater attention to each pupil and were able to provide for more interaction in the learning activities with students.

Reducing class size from 20-35 to 17 students would increase the number of reduced-size class rooms from 29-50 to 58 in each grade with 8-29 additional teachers needed. It would cost an additional $248,000 to $899,000 dollars in direct teacher salary cost. The researcher concluded that smaller classes have the greatest impact when experienced in the early grades with a kindergarten or first grade class size (13-17 students per teacher). With smaller classes minority students can have greater success in class that can lead to reduced grade retentions, fewer disciplinary actions, and fewer drop outs.

Finn and Achilles (1990) examined and compared students' academic and personal success when they experienced smaller class sizes in lower grades (13-17 students per teacher), regular classes (22-25 students per class), and regular with aid class
(22-25 students). Many researchers (e.g., Mosteller, 1995; Orlich, 1991) refer to project STAR as one of the most significant studies in education during the past 25 years. This research data has had an effect on several states' education policy and even on a national level.

The study included 7,000 students in 79 schools. They were randomly assigned to small classes, regular classes, and regular classes with a full time aid. The classes were also assigned teachers at random. The students were monitored from kindergarten through third grade and the STAR students were again tracked in their sophomore year of high school. The students in the three different interventions (i.e., small class, regular class, and regular with a full time aid) were studied in the light of academics and social interaction from kindergarten through the third grade and again in the fourth grade. The results of the study were that students placed in small class sizes in grades K-3 had better high school graduation rates, earned higher grade point averages, and were more inclined to pursue higher education as evidenced by their taking the ACT or SAT college entrance exams. Results of the study indicated that at least three years in a small class is necessary in order to reap the benefits. Also, students who participated in the study exhibited more assertiveness in classroom participation.

It has been an assumption for a while that class size affects student achievement (Tajalli & Opheim, 2004). Pedder (2006) attempted to show if a relationship exists between class size, instructional strategies that teachers choose when class sizes are larger, and student learning. His study examined the processes that occur within the classroom that determine the effect that class size has on student learning. Teacher interviews, controlled experiments, and natural experiments were the basis for the
formation of models of relationships between class size, pedagogical practices, and student achievement. Pedder concluded that the strength of teachers and students in certain areas, as well as the choices that were made by them in classes of different sizes, had an effect on the learning process when other variables were included.

The most important and consistent finding of this study, from different kinds of data, was that class size variation does not give rise to opportunities for teachers to promote the quantity and quality of learning opportunities as an independent, isolated variable. Space, resources, teachers' resourcefulness and expertise, pupils' ability and personality characteristics, marking loads and workloads more generally were important salient factors that interacted with class size to mediate class size effects on classroom processes and pupils' learning. A second and related key finding was that there were no simple one-way relationships between class size and classroom processes hypothesized to affect the quantity, quality and distribution of pupils' learning opportunities. Thus evidence from the study suggests that there are benefits to pupils' learning in both large and small class contexts and that conditions in small as well as in large classes can have adverse effects on pupils' learning. (p. 223)

Bruns (2003) wanted to determine if classroom size in an industrial technology laboratory would have any effect on the grades and success of the class. Bruns hypothesized that a student's academic success would increase if the number of students per teacher were to be decreased. Also, this research gave insight on how the behaviors of students in larger classes influence the effectiveness of a teacher. All participants were eighth grade students. The study was conducted over the last two academic quarters of
the school year. Evaluations were based on discipline, absenteeism, and grade collection. The researcher discussed the pros and cons of being a student enrolled in a small school versus a large school. Being part of a small school gives a student a sense of security and being part of a culture. Unfortunately, smaller schools do not always offer the number of extracurricular activities that larger schools have. On the other hand, while large schools do offer more clubs, more sports, or even more electives in the curriculum, students often fail to benefit from a close bonding with fellow students that tend to develop in smaller schools. Students with learning disabilities often get overlooked in a large school environment. Teaching a class of 30 eliminates the ability to recognize social or emotional needs required of those students coming from dysfunctional homes.

Bruns (2003) felt another reason to study the effect of classroom size is the cultural makeup of a school. Reducing classroom sizes improves academic performance and narrows the achievement gap between minority and Caucasian students. African American students enrolled in smaller classrooms were more likely to take ACT and SAT tests. It was also noted that teen birth rates for those students in smaller classes was one-third less. Bruns concluded that the overall data showed that the smaller class of 9 performed better than those in the class of 18. Although it was apparent that all students could benefit by smaller class enrollment, there are still concerns that would need to be addressed. For example, will school systems handle the financial burden of additional classroom teachers, classroom materials, and classroom space?

Per Pupil Expenditure

Econometric issues in educational finance have long been on the forefront of educational debate (Ajilore, 2006). "Econometrics considers what determines district
support for public education, whether the size of the elderly population may play a role, and the extent to which a district's demographics may explain the differences in school outcomes” (p. 193). With the increase in accountability requirements in Louisiana, LoVette (2005) reported the funding for public education needed to be increased in order for school districts to adjust to the expectations from state law makers. Ajilore introduced a framework for analyzing the impact of demographics on local public demand and tested a hypothesis that a district's diversity affects support for public education. The author derived per-pupil spending and the other financial variables from the 2000 U. S. Census County Government Finances. Demographic variables were taken from the Census Bureau and then merged with the financial data. Counties without children or with a public school enrollment of less than 100 students were excluded.

Ajilore (2006) tested the hypothesis that a district’s diversity affects support for public education using spatial analysis. The standard measure of per-pupil spending “local public demand for education” was used as the dependent variable (p. 197). The study investigated if higher per pupil spending meant an increase of support public funding to schools by the local districts. Econometric issues were addressed, specifically regressor endogeneity and the existence of spatial dependence, by estimating a variety of models using county-level data from the 2000 census. Results of the study show that diversity has a negative and significant impact on per-pupil spending.

According to the data, it would be expected that ethnically heterogeneous counties would have lower per-pupil spending than other counties. The findings did not coincide with other research in that higher per pupil spending meant an increase in student learning and achievement. “While PPS may represent a proxy for the quality of
education, the link does not seem strong enough for interpretative purposes. However, PPS does seem to measure public support because there is a general belief that higher spending will improve educational outcomes" (p. 197).

Ram (2004) conducted a study to determine the relationship between school expenditures and student achievement. Scholastic Aptitude Test (SAT) scores were used to measure student academic performance in the quantitative study. The primary expenditure focused on was per-pupil expenditure. Ram noted that past research turned up contradictory results. Hanushek (1986, 1996, & 1998) reported in three different studies that there was not real evidence of a link between resources and student achievement whereas; Hedges and Greenwald (1996) concluded in their research “that the relations between inputs and outcomes are consistently positive and large enough to be educationally important” (p. 169-170). Some research found that no apparent correlation exists between school expenditures and student achievement while other research studies suggested there was a definite relationship between them. The test scores were compared to the expenditures for the student test takers from the previous school year. State level panel data were used to estimate the extent of the relationship between per pupil expenditure and student achievement.

Ram (2004) used data from across an eight-year time period. SAT scores were associated with per pupil expenditures from the previous year. “Since pooling observations for various years requires that expenditure be measured in prices of a common year, eight years for which information is reported in the 1997 issue of the Digest of Education Statistics and for which SAT scores could be found have included, the expenditure is measured in 1994/95 dollars” (p. 170). The data were then organized
into a quadratic equation with SAT scores, percentage of graduates that took the SAT, and per pupil expenditures represented as variables in the equation. The equations were solved to determine the proposed effect that per pupil expenditures had on student achievement. Some of the results of the study are as follows:

- Expenditure shows a positive relation with mathematics score, and the estimated parameter carries high statistical significance.
- The effect of expenditure on verbal score, although positive, is quantitatively negligible and statistically insignificant at any meaningful level.
- The estimates for the SAT reflect a picture that is similar to that for MATH, and the expenditure parameter is positive and carries high statistical significance.
- Thus, despite the weak expenditure parameter in the VERB equation, if one were estimating the SAT model, it would be appropriate to conclude that expenditure has a highly significant positive effect.
- Besides the statistical significance of the expenditure parameters in MATH (and SAT) equations, it is important to consider the magnitude of the effect. Since expenditure is measured in thousand dollars (at 1994/95 prices), the estimates indicate that increasing per-pupil expenditure by $1000 in a ‘typical’ state may be expected to raise the MATH (and SAT) score by a little over four points.
• The effect of expenditure is positive and carries high statistical significance, but the magnitude of the effect appears modest. (p. 173 - 174)

Minority Students

Many theorists attempt to explain the correlation of minority students and low school performance. Ferguson (2002) emphasized one of the important features in the mandated federal law No Child Left Behind Act of 2001 “… that states should publish achievement results separately for racial and ethnic groups and work to alleviate inter-group disparities. Thus, for the first time in the nation’s history, raising achievement levels among racial and ethnic minorities and closing achievement gaps are explicit goals of federal policy” (p. 4). Jensen’s 1969 theory of “biological determinism” proposed that there is a genetic inferiority among minority students. Trueba’s 1989 theory recognized that there is a significant impact on student academic achievement of skills and abilities based on cultural settings. Ogbu argued that earlier theories had not taken into account the social aspects of minority children (Foster 2004). Ogbu’s theory should be examined thoroughly in order to understand the educational foundation of minority students and their school performance.

Ogbu developed a compelling narrative of minority academic school performance which is generally referred to as the cultural-ecological (CE) theory of minority student performance. Building upon the work of others before him, Ogbu described cultural ecology as ‘the study of institutionalized patterns of behavior interdependent with features of the environment’ At its most basic, Ogbu’s CE theory of minority student performance: posits that there are two sets of factors
influencing minority school performance: how society at large and the school treats minorities (the system) and how minority groups respond to those treatments and to schooling (community forces). The theory further posits that differences in school performance between immigrant and nonimmigrant minorities are partly due to differences in their community forces. (Foster, 2004, p. 369)

Foster (2004) referred to a study in 1999 involving fifteen districts in Ohio, Michigan, Wisconsin, Illinois, Massachusetts, New York, New Jersey, North Carolina, California and Virginia. The districts formed an organization called Minority Student Achievement Network (MSAN) to investigate the racial and ethnic achievement disparities in their elementary and secondary schools. In addition, they sought remedies to narrow the achievement gaps among European Americans, Asian Americans, Hispanic, and African Americans. The sample included 7120 African American, 17,562 European Americans, 2491 Hispanics, 2448 Asian Americans and 4507 mixed race students. A number of pertinent findings from the study discussed regarding student self-reported achievement and individual skill variations.

African American, Hispanic, and mixed-race students reported lower grade point averages than Caucasian and Asian students. Official student records validated their response. In addition, African American and Hispanic students reported difficulty in understanding and comprehending the lessons and readings in class. Foster reported that this is verification that implementing instructional strategies that assist struggling students in understanding the lesson and improving reading comprehension should be
explored and used to assist the African American and Hispanic students with their deficiencies.

Additionally, families of Caucasian and Asian students were listed in a higher socio-economic class than the African American and Hispanic students. There were more learning resources (i.e., books, computers) located in the home of the Caucasian and Asian students. One of the questions that students were asked involved their thoughts about what was most important to them when he/she worked hard in class. African American and other noncaucasian students overwhelmingly listed teacher encouragement as their choice. The study also noted differences in behaviors and homework assignments among the groups. Foster and possibly teachers of these students were given the impression that Caucasian and Asian student were more interested in their academics because of their beliefs about working hard in school and a more serious desire to complete homework assignments (Foster, 2004).

Racial inconsistencies in special education identification have been the target of litigation and test bias exploration. There has been documentation of consistent disproportional among African American and Native American students being assigned to special education. Data from the U. S. Census Bureau strongly support a race-poverty connection. For example, in 2001 14.4% of Caucasian children lived at or below the poverty level, whereas 30.4 % and 29.2% of African American and Hispanic children respectively lived in a household below the poverty level. Furthermore, African American students account for 33% of students identified as mentally retarded but make up only 17% of the student population.
Skiba, Poloni-Staudinger, Simmons, Feggins-Azziz, and Choong-Geun (2005) conducted a quantitative study to test the influence of race, poverty, and other demographic variables on special education disproportionality. The study focused on four assumptions:

- Minority students are disproportionately poor and hence are more likely to be exposed to a variety of socio-demographic stressors associated with poverty.

- Factors associated with living in poverty leave children less developmentally ready for schooling and ultimately yield negative academic and behavioral outcomes.

- Students who are low achieving or at risk for negative behavioral outcomes are more likely to be referred to, and ultimately found eligible for, special education service.

- Therefore, poverty is an important contributing factor that increases the risk, presumably in a linear fashion, of special education placement for minority students. (Skiba, Poloni-Staudinger, Simmons, Feggins-Azziz, & Choong-Geun, 2005, p. 131)

The researchers collected district-level data from three separate state-wide data sets in a Midwestern state for the 2001-02 school year pertaining to the general and special education enrollment in a disability category by race, socio-economic status, local resources, and academic and social outcomes. “Data on disability categories for each of the state’s 295 school districts were drawn from the Uniform Ethnic and Racial Questionnaire and the Uniform Placement Questionnaire” (p. 133). Two research
questions guided the researchers’ data analyses: (a) To what extent do poverty (measured by free-lunch status), district resources, and academic-behavioral measures account for ethnic disproportionality in special education? (b) What are the relative contributions of race, poverty, school resources, and academic-behavioral outcomes to the probability of diagnosis in special education? “To ensure a normal distribution for the OLS regression analysis, the extent of disproportional in each school corporation for each disability category and placement category was expressed as a two-sample z score for proportions” (p. 133).

In regard to the research design, the researchers used an OLS regression to anticipate disproportional in the disability categories. Also “a logistic regression was utilized to assess the independent causes of race, poverty, and district-level resources and outcomes on the odds of special education identification. The dependent variables were the estimates of district-level disproportional, and the odds of disability identification in one of four disability categories (a) mild mental retardation, (b) moderate mental retardation, (c) emotional disturbance, and (d) speech and learning” (Skiba, Poloni-Staudinger, Simmons, Feggins-Azziz, & Choong-Geun, 2005, p. 133). The independent variables were poverty level, district resources, and academic and behavioral outcomes.

The results of the study suggest that relationships among poverty, race, achievement, and special education eligibility are complex. Poverty in the data shows a moderately strong correlation with measures of academic achievement and special education placement rates; however, the correlation between the percentage of African American enrollment and academic achievement was much lower, and the correlation
between race and special education rates was almost zero. It is imperative that two findings are mentioned because it has an impact on minority learning.

- District suspension-expulsion rates were consistently associated with rates of ethnic disproportionality in special education. In fact of all the variables included in these analyses, only the suspension-expulsion rate at the district level proved a consistent predictor of ethnic disproportionality across disability categories.

- Finally, districts with higher student-teacher ratios tended to have higher rates of African American disproportionality in mild mental retardation. (Skiba, Poloni-Staudinger, Simmons, Feggins-Azziz, & Choong-Geun 2005, p. 135)

As academic success and achievement is shown by many students throughout the United States, Hispanic immigrant students are falling behind academically. Although many Hispanic students enter high school with dreams and goals similar to their Caucasian peers, there is a growing problem of academic failure within this group. Some studies note that in school achievement, Hispanics ranked lower than their Caucasian, Asian American, and African American peers (i.e., Ferguson, 2002; Foster, 2004).

To investigate possible contributing factors that relate to this mounting problem. Ibanez, Kuperminc, Jurkovic, & Perilla (2004) examined the motivators then propelled Hispanic students to academic success. The researchers focused on two factors: (a) perceived school experiences, and (b) achievement motivation. The researchers used an exploratory comparative study method to conduct their research using two main processes to explain how immigrant Hispanic students adapt to their new environment
and cultural surroundings. First, the researchers focused on the cultural attributes of the immigrant students. Cultural attributes are the distinct ways of understanding, perceiving, and making sense of their new environment using their background knowledge. Secondly, the researchers focused on the Hispanic students' self-created cultural adaptations, or the new ways of perceiving and coping with their host environment.

Data were collected from a large public high school in a metropolitan area of Atlanta, Georgia. In the 1997-1998 school year, there were approximately 1,300 students attending grades 9-12. Twenty eight percent of the student population was Hispanic. Researchers recruited willing participants, and signed up students who were interested in participating in the study. Each student had to bring back a form giving personal and parental consent. There were 129 participants of which 64% were girls from 14-19 years of age. All the students were either immigrants or born in the U.S. to immigrant parents. Most of the Hispanics identified were from Mexico; however, some were born in Central America, the Caribbean, or South America.

The participants were given questionnaires in small groups of 5-15 students. Test questions were written in Spanish and English, but students preferred the test to be administered in Spanish. An interviewer orally introduced each questionnaire and read each item aloud to allow for student comprehension. The average time for completing the questionnaire was 1 hour and 30 minutes. Each student was paid $10 for their completed questionnaire. The format for each measure was a 4-point Likert scale.

The researchers found that educational ambition of the Hispanic students was very high. Twenty percent desired to graduate from a university, Fourteen percent
wanted to obtain a master’s degree, and roughly 31% wanted to obtain a doctoral degree. However, the personal perceptions and realities these students encountered were much lower. “Sixteen percent expected to graduate from high school, 21% expected some college, 24% expected a 2-year college degree, and 23% expected to graduate from a university. Only 5% expected to obtain a master’s or a doctoral degree” (Ibanez, Kuperminc, Jurkovic, & Perilla, 2004, p. 133). The researchers found a positive correlation between educational aspirations and socio-economic status, educational expectations, personal importance of school, academic abilities, and acceptance of their peers and environment. “Educational expectations were positively correlated with generation status, acculturation, school importance, academic competence, school belonging, and parental involvement” (Ibanez, Kuperminc, Jurkovic, & Perilla, 2004, p. 133). Overall, the researchers found that relationships such as parental involvement, the school-home connection, and the aspirations to expectations play an essential role in the motivation and achievement of the Latino culture.

Summary of Results

**Socio-economic Status**

Socio-economic status (SES) refers to the placement of persons, families, households and census tracts or other aggregates with respect to the capacity to create or consume goods that are valued in our society (Miech & Hauser, 2001). Beer, Le Blanc, Mark, and Miller (2008) conducted a quantitative and qualitative study to test whether summer learning camps increase academic achievement and engagement in students of low socio-economic status. The Academic Competence Evaluation Scales (ACES) and a modified EXPLORE test were used as evaluative instruments. The ACES is a measure of
academic competence in students in grades K-12 and college. The ACES is an effective tool to see how a student performs in the classroom. The student self-report form for grades 6-12 was used for this study.

The complete data on the ACES were available for 126 participants. The results indicated that the summer camp students reported significantly more academic enablers after summer camp than prior to attending summer camp. They reported a gain in interpersonal skills, engagement, motivation, study skills, and academic skills such as critical thinking and math skills. The results of the modified EXPLORE scores for 196 participants showed a significant increase in math achievement. The students were also asked to explain in writing the following summer, after attending camp the previous summer, the actions they were taking to prepare for college. The qualitative results gave a sampling of the responses that demonstrated these students were actively taking steps in their coursework to prepare for college. Early data indicate that Summer Learning Camps may be beneficial as an intervention strategy to increase academic achievement and engagement is students of low socio-economic status. In a report by the Louisiana Legislative Black Caucus, poverty of African Americans was noted as a major problem in the lack of improvement in their health, education, and economics. State representative Regina Barrow spoke openly about why many African Americans are struggling in Louisiana.

‘The root cause (of the disparities) is poverty,’ Barrow said. ‘It’s probably something dating back before slavery.’ Poverty is often indicative of poor education, she said. Lack of education leads to low-paying jobs, often without
access to health care, thus the cycle of poverty begins and continues. Barrow said one way to break that cycle is through education. (Bailey, 2009, p. 1)

*ACT Scores*

In a recent national study, less than 25% of ACT test takers met the college readiness benchmark scores established by ACT for the four core subjects. Those benchmark scores are: English (18), mathematics (22), reading (21), and science (24). ACT says that students having those scores have a 75% passage rate (C or better) in beginning level college courses in the core subjects. Percentages of students meeting the college readiness benchmarks in all four subjects varied from state to state, ranging from 36% in Massachusetts to 9% in Mississippi. This research suggests that students ACT scores definitely have an impact on learning.

Noda (2007) summarized in a recent national study that less than 25% of ACT test takers met the college readiness benchmark scores established by ACT for the four core subjects. Those benchmark scores are: English (18), mathematics (22), reading (21), and science (24). ACT says that students having those scores have a 75% passage rate (C or better) in beginning level college courses in the core subjects. Percentages of students meeting the college readiness benchmarks in all four subjects varied from state to state, ranging from 36% in Massachusetts to 9% in Mississippi. This research suggests that students ACT scores definitely have an impact on learning. If school boards desire higher ACT scores in their districts, the Center for Public Education recommends that board members “should evaluate whether more advanced courses - such as trigonometry and physics - are available for all students and should determine if rigorous courses are offered” (Center for Public Education, 2007, p. 1).
Students who are not on track for college and career readiness by eighth grade are unlikely to attain that level of readiness by high school graduation, according to a new research report by ACT, Inc (ACT, 2009). The findings suggest the level of academic achievement that students attain by eighth grade has a bigger impact on whether they are ready for college and careers by the time they graduate than any single factor examined, including courses taken, grades earned in high school and demographic characteristics such as gender, race, and household income.

The study also found that improving certain behaviors of middle school students can help increase their readiness for college and career by the time they graduate. Two academic behaviors were found to have the greatest impact on both eighth grade course failure and ninth grade GPA: academic discipline (e.g., good work and study habits) and orderly conduct (e.g., behaving appropriately in class). The report for ACT lays out the specific knowledge and skills in English, math, reading, and science that students must attain by the end of eighth grade to be on target for college and career success. The report also offers several recommendations to educators and policymakers on how to improve college and career readiness among high school graduates, including the following:

- Focus K - 8 (kindergarten through eighth grade) standards on the knowledge and skills that are essential for college and career readiness, and make these non-negotiable for all students.
- Monitor student progress toward college and career readiness beginning in upper elementary school and continuing through middle school, and intervene with students who are not on target to becoming ready.
• Improve students' academic behaviors (homework compliance, attendance, and other aspects of academic discipline).

• Increase federal and state support for schools to implement intervention programs that help all students become ready for college and career.

(ACT, 2009, p. 1)

Certified Teacher

Past studies have shown that after researchers account for socio economic status of students, the next major impact on student learning occurs by the characteristics exhibited by the classroom teacher (Sanders, 2000; Sanders & Rivers, 1996). Major findings by Alexander & Fuller (2004) indicated that compared to students with non-certified teachers the students with certified teachers on average, performed better on the 1999 Texas Assessment of Academic Skills math assessment. Student characteristics, teacher characteristics and the campus characteristics were incorporated for controlling important variables. On average a student with a certified teacher gained a grade level plus about one more than Texas Learning Index unit point. Although the other ranges experienced a negative coefficient when measured against teacher with six to ten years experience none were significant.

In general the students score lower Texas Assessment of Academic skills to their counterparts who were not part of free/reduced lunch, participated in special education, being at-risk of dropping out or their minority status. Higher students who were in the gifted/talent program had significantly higher scores. The researcher stated the findings from this study indicated certified teachers are connected with increased student achievement on the states mandated mathematics test.
Darling-Hammond, Holtzman, Gatlin & Heilig (2005) found no difference between teaching fellows and certified teachers or between uncertified and certified teachers in their impact on math achievement. Classrooms of students assigned to internationally recruited teachers scored .02 standard deviations lower in math than similar classrooms assigned to certified teachers. Classrooms of students assigned to Teach for America corps members scored .02 standard deviations higher compared to certified teachers. In reading, students assigned to teaching fellows underperformed students assigned to certified teachers by .01 standard deviations. Consistent with other studies they found that teachers’ effectiveness improves with the first few years of experience. The achievement levels of students assigned to teachers in their first year of teaching is .06 and .03 standard deviations lower in math and reading, as students assigned to those same teachers after they have gained two years of experience.

**National Board Certification**

One of the variables under investigation included the impact National Board certified teachers may have on student achievement or the District Performance Score. After many attempts, the National Board Teacher Certification organization would not release the information requested to include in the study. Therefore, the variable was excluded. The research remained in the study to show that it may be a need to eventually investigate the impact it has on study learning and district success. National Board Certification is a voluntary credentialing process, offered by the National Board for Professional Teaching Standards (NBPTS) and evaluates a teacher’s content knowledge and skills in the classroom. National Board certification does not replace a state license. Instead, it serves as a symbol of teaching excellence awarded to those teachers whose
performance meets the national board standards. The National Research Council of the National Academies has released a report, which affirms that NBPTS has had a positive impact on student achievement, teacher retention, and professional development. Over 150 independent studies have been conducted around the country and the majority of these studies have also shown that National Board certified teachers have a positive impact on student learning in the classroom (NBPTS, 2008). The certification process requires teachers to prepare a portfolio that includes student work, lesson plans, videotapes of class activities, recommendations from colleagues, and an in-depth analysis of the teacher’s instructional strategies. Preparation takes anywhere from 200 to 600 hours. Candidates also complete a written test on content specific to their fields (Loschert, 2003).

When assessments match standards that teachers are supposed to teach, the students of National Board certified teachers excel (Cody et al., 2008). There is agreement that National Board certified teachers are more effective in high needs schools. National Board certified teachers who became certified with a score above 300 have produced significantly higher student achievement as measured by standardized tests. National Board certified teachers who gained certification on the first attempt also produce higher student achievement. First generation (i.e., before the process reduced portfolio requirements from 6 to 4) National Board certified teachers produce higher student achievement gains. Student achievement test scores take a slight dip during the year of pursuing certification according to some studies. The researchers attribute this to the anxiety, stress and uncertainty attached to the process. Researchers found that a lot of the existing research designed to measure the impact of National Board certified teachers
focuses entirely on student test scores. This is easily accessed data, but does not
demonstrate the full range of student learning gained as a result of being taught by a National Board certified teacher.

In a report published in Tennessee, the issue of the degree to which National Board certified teachers are effective in producing achievement gains in students is discussed. At the time of the study, there were 40 plus National Board certified teachers in the state. Sixteen of these teachers were studied. The data showed that these teachers were not exceptionally effective in causing student gains in achievement. “...the achievement gains made by their students are no greater than those made by students who had other teachers” (Goldsmith, 2004, p. 4). A major study of teachers in North Carolina stated teachers who qualify for national certification do a measurably better job in the classroom. The study was funded by the United States Department of Education and focused on the performance of 600,000 North Carolina elementary students. The results indicated that National Board certified teacher’s students scored significantly better than students of non-National Board certified teachers. The results are consistent with other research showing that teacher quality has the strongest impact on students in economically disadvantaged students.

Class Size

Lewit and Baker (1997) explained class size determination as an administrative measure typically defined as the number of students for whom a teacher is primarily responsible during a school year. The teacher may be responsible for most of the instruction of the students (i.e., in a self-contained classroom) or just for instruction in one subject (i.e., a departmentalized program in which teachers are assigned to several
classes of different students). Finn (2002) studied the effects of small classes in the academic impact it had on minority students. They found that when minority students were placed in average size classes in the first grade, 14.3% more Caucasian students passed a reading mastery test in comparison to them.

Finn (2002) also witnessed that 4.1% more Caucasian students scored at a higher percentage on the reading test than minority students. Thus, the researcher concluded that smaller class sizes can assist in narrowing the achievement gap between Caucasian and minority students. Finn commented that minority students attending the smaller classes for four consecutive years continued to show academic gains in comparison to Caucasian students. Finally, it was noted that students that participated in the smaller classes in grades kindergarten through three show significantly higher scores during the fourth – eighth grade in comparison to students that were instructed in the average size classes.

Per Pupil Expenditure

Elliot (1998) performed a study to investigate the allocation of public school funds affects students’ achievement through access to opportunities to learn (OTL). It also looked at how financial resources indirectly affect students’ achievement by creating differential access to OTL. The author was trying to link two data sets to create a national sample of school finance, OTL, and student achievement data. The author came up with two key areas for her hypotheses:

1. In a given school, per-pupil expenditures increase students’ achievement when funds are used to hire the most qualified teachers and to train them further in the most effective methods of teaching math and science.
2. In a given school, per-pupil expenditures increase students’ achievement when funds are used to make the use of equipment, such as computers and microscopes, regularly available. (p. 45)

According to Elliot, the findings provided support that money does affect student achievement. The results also give us an idea of how money matters. Both math and science showed that money mattered as well as teaching practices and classroom resources. The author concluded that the effect was larger for science than math. She surmised that this may have been because science is a more difficult subject that requires more thinking skills. She also found that the relation between finance and class size was unclear, but suggested that allocating resources to have smaller class sizes in high poverty schools may not by itself improve student achievement.

The implications according to the author include that the results make the case for using school resources to hire more educated teachers for math and science, but that just doing that would not be enough to assure all students would learn. Math and science teachers must also use effective teaching strategies and emphasize higher-order thinking and inquiry skills over memorization of facts. She stated that money should be spent on high quality professional development for teachers as well.

- Lips, Watkins, and Fleming (2008) drew the following conclusions from a study they conducted in regards to educational spending.
- American spending on public K-12 education is at an all-time high and is still rising.
- Continuous spending increases have not corresponded with equal improvement in American educational performance.
• Increasing federal funding on education has not been followed by similar in student achievement.
• Education reform efforts should focus on improving resource allocation. Analysis of expenditure data demonstrates that only around 48% of government expenditure on public education is directed to instruction in the classroom. (p. 6)

Over the past 20 years, real government per-pupil expenditure has increased by nearly 50%. It is not that increased spending cannot produce improved student achievement; they imply that it is the way in which funds are allocated that addresses the lack of a correlated increase in student achievement. The authors recommend that policymakers reform the process of funding so that resources are allocated where there has been a greater (though not huge) link between district expenditure, student achievement and classroom instruction.

The study performed by Archibald (2006) concentrated primarily on spending at the school level rather than the district level and thus validated the correlation between per pupil expenditure and student achievement. The researched showed that per pupil expenditure was clearly affected in math and reading achievement.

Also, addressing the second research question, per-pupil spending was positively related to achievement in math and reading, and the result was statistically significant for reading. This finding may be used as evidence that resources do in fact matter when the goal is to improve student achievement on standardized tests. The fact that this model used a school-level per-pupil spending number in this nested structure means that it is a better estimate of the effect of resources on
achievement than many previous studies that used data aggregated to the district level. (p. 34)

**Minority Students**

School systems are looking for ways to increase the academic performance of minority students. All students come from varying backgrounds that contribute to their social outlook and behavioral patterns. Finding ways to improve the academic performance of minority children is of great concern. Still, many minority students are not making adequate progress. Since educators have little control over the children’s home life, it is of the utmost importance to prepare them for future success. More time needs to be spent to find out how to ensure minority students achieve academic success, instead of pinpointing why they are failing.

A quantitative research study by Borman and Rachuba (2001) focused on investigating characteristics that distinguished academically successful, or resilient, elementary students from minority and low socio-economic status backgrounds. The objective of the study was to improve understanding of the individual and school-level factors that distinguish resilient students from non-resilient students. The researchers contrasted the outcomes of African American, Hispanic, and Caucasian students. The research was based on Prospects, the Congressionally Mandated Study on Educational Growth and Opportunity. Prospects data contained information from 40,000 students in grades one, three, and seven over a four year period. The researchers in this project chose to use a specific data set consisting of 3,981 third grade students. Of these students, 15% were African American, 19% were Hispanic, and 66% were Caucasian. After performing an ordinary least squares regression analysis, the sample was reduced to
only students from low socio-economic status backgrounds. This sample consisted of 925 students. Of these 26% were African American, 32% were Hispanic, and 43% were Caucasian.

Results regarding individual characteristics showed that low socio-economic status Caucasian students had greater self-efficacy in math than Hispanic students. Those students who achieved resilient outcomes in math were shown to have a more positive outlook toward school, higher self-esteem, and greater engagement in academic activities and efficaciousness in mathematics. This finding was consistent across racial/ethnic groups. The results on peer group characteristics found that students attending schools with a high percentage of underachieving students had little effect on the resilient students. These results were for race only. The findings did show that African American and Hispanic student from low socio-economic status backgrounds are more likely to attend a school with a high percentage of low performing students than low socio-economic status Caucasian students.

The researchers found that school resources had little effect on the outcomes of resilient students and a small significance for race. They also found some evidence showing that low minority socio-economic status students attended schools with lower levels of resources than did low socio-economic status Caucasian students. The results on effective school variables found a main effect for race but not resiliency. Low socio-economic status Caucasian students were reported to attend schools where teachers tracked progress more closely. Low socio-economic status African American students were found to attend schools that were less characteristic of the effective schools model. Researchers also found evidence showing that low socio-economic status minority
resiliency is more dependent on attending an effective school than resiliency of low socio-economic status Caucasian students.

Results of the effects of supportive school community showed that both safe and orderly environments and positive teacher-student relations favored resilient students. Low socio-economic status Caucasian students were found to attend schools with a safe and orderly environment more often than their minority counterparts. Parental involvement was found to be more prevalent in low socio-economic status Caucasian and African American students. Researchers concluded that students of minority and low socio-economic status backgrounds are at greater risk of academic failure in math than low socio-economic status Caucasian students. They also found that effective school characteristics may be more important to the resilience of African American students than Caucasian or Hispanic students.

Students who actively participated in the classroom and showed interest in the classroom displayed more resiliencies to academic failure in mathematics across all racial groups. Researchers also found that student’s peer groups and a school’s resources have little chances of a student’s chance of achieving resilient academic outcomes. The researchers believe there results may have underestimated the effect of peer interaction groups on resiliency and success. This is due to the finding that low socio-economic status minority students who attended schools with a high percentage of low socio-economic status students typically had lower performance on test scores.

Researchers also found that resilient students tend to develop stronger and more supportive relationships with their teachers than non-resilient students. Therefore, a supportive school community model is important for all students, especially the non-
resilient minority students. Due to the fact that resilience is an elusive construct, there were some limitations to this study. The definitions for resilience and definitions of the school effects models are related to the limitations.

The Louisiana Legislative Black Caucus released a report that characterized the state of African Americans in Louisiana in regards to economics, health, and education. According to the report, African Americans are three times more likely to experience poverty than their Caucasian counterparts. It also found that African Americans bring home only half the median income and per capita income of Caucasians. “Disparities in income … play huge roles in accounting for large gaps in wealth building (between the two races)” (Bailey, 2009, p. 1) an abridged version of the report states. In the area of education, African American children are much more likely to be classified as having a learning disability than Caucasian children. Among older students, more African Americans than Caucasians are obtaining degrees from two-year colleges, the report states. African Americans, however, receive four-year degrees at half the rate of Caucasians (Bailey, 2009).
Chapter 3

Methodology/Procedures

Introduction

The methodological facet of the study is discussed in Chapter three. The research design is discussed in section one. In section two, the sample used in the study is identified. Section three notes the sources of the data for all variables used in the study. The procedures that were used in this study are listed in section three. These procedures determined whether (a) socio-economic status of students, (b) academic achievement using average ACT scores, (c) percentage of certified teachers, (d) district class size, (e) per pupil expenditure, and (f) percentage of minority students have an impact on the success or failure of School District Performance Scores in Louisiana. Each procedure was tested against a null hypothesis.

Research Design

A non-experimental, correlational, and ex post facto research design was utilized. Creswell (2005) defines correlation as “a statistical test to determine the tendency or pattern for two or (or more) variables or two sets of data to vary consistently” (p. 325). Creswell explained in more detail the following information on correlational designs:

In some studies, you may be unable to provide an intervention or to assign individuals to groups. Moreover, you focus more on examining the association or
relationship of one or more variables rather than in testing the impact of activities
or materials. *Correlational designs* are procedures in quantitative research in
which investigators measure the degree of association (or relationship) between
two or more variables using the statistical procedure of correlational analysis.
This degree of association, expressed as a number, indicates whether the two
variables are related or whether one can predict another. To accomplish this, you
study a single group of individuals, rather than two or more groups as in an
experiment. (p. 52)
The univariate analysis of covariance statistical test measured the degree of association
among (a) socio-economic status of students, (b) academic achievement using average
ACT scores, (c) percentage of certified teachers, (d) district class size, (e) per pupil
expenditure, and (f) percentage of minority students and the district performance scores
to determine some possible predictors of success or failure between the lower performing
and the higher performing districts. Data about the above list of district variables and
student achievement within districts will be obtained from reports obtained by the
Louisiana State Department of Education for the 68 school districts in Louisiana.
A Pearson Correlation analyses was used to compare the relationship between
each variable and district performance scores. Bryk and Raudenbush (1998) studied the
correlation between teacher quality, per pupil expenditure, and class size against the
dependent variable student achievement. The software program and information from the
district student information system allowed researchers to determine the variance that
occurred among the factors in the study. Controlling for socio-economic status is
imperative in validating the results of the study using it as a measure of the strength of
the factor as predictor of student achievement.

Wyss, Tai, and Sadler (2007) emphasized the need to control for education and
demographic background in the regression model used in their study that investigated
impact that class size may have on student achievement and the instructional strategies
used by teachers in the various classes. Through the analyses, it was determined that
students in classes with ten or fewer students showed a significantly different academic
performance than students in classes with 21-25 students. “The difference in performance
was 1.42 points, or 1/6th of a letter grade, at a < 0.01 level of significance” (p. 50).

Bundy (2006) used a multi-variate regression model and a three-step process in a
study analyzing the impact that National Board certified teachers had on student learning.
Composite test scores, the dependent variable in the study, were used to measure student
achievement. Independent variables included student racial composition, socio-economic
status, and teacher experience. The next step involved dividing the schools into quartiles
(i.e., none, low, medium, high) to classify them by percentage of National Board certified
teachers on the faculty. A univariate analysis of co-variance test was conducted to
determine if a statistically significant difference existed in the mean student performance
scores between the quartiles. Bundy then used a three-step linear regression to investigate
“if the effect of the ratio of NBCTs was statistically significant in explaining the variance
in the indices of teacher empowerment, leadership, and professional development” (p. 3).
This study used a univariate analysis of covariance as the primary hypothesis test and the
correlation coefficient to determine the strength of the association between the variables.
Sample

The study investigated 68 school districts in Louisiana during the 2007–2008 school year. Four of the school districts, Monroe City School System, Baker City School System, Zachary City School System, and Bogalusa City School System, are school systems that are operated separately from their parish public school system, Ouachita Parish, East Baton Rouge Parish, and Washington Parish. School districts are required to participate in the Louisiana School and District Accountability System. The system is designed to improve student academic performance on standardized tests. In 2000, state officials enacted Louisiana Revised Statute 17:10.1 which requires that: “Every school shall participate in a school accountability system based on student achievement as approved by the Louisiana State Board of Elementary and Secondary Education” (Louisiana Department of Education, 2009a, p. 1).

Each school in Louisiana is classified as an elementary, middle, high, or combination school. Grade configurations for elementary schools range from PK-5 through grade 6. Middle schools tend to fall between grades 6-8 while most high schools are configured by encompassing grades 9-12. Combination schools include grade levels in elementary and high schools as some areas in Louisiana may have schools that educate students from PK through grade 12. Each year, every school is assigned a School Performance Score, which is determined by student assessments given in the spring in addition to student attendance, and student drop-out rate. District Performance Scores are then calculated based on School Performance Scores from each school in the district. School Performance Scores are calculated for each school. In addition, District Performance Scores are calculated each year. The District Performance Score is the
average School Performance Score for each school located within that particular district. For this study, the school district will be the unit of analysis.

Louisiana District Performance Scores are a vital measure for student achievement throughout the state. It has also become an integral part in determining such factors as job readiness within communities and possible business location decisions. Because of its significance, each school district will be examined in the study to investigate possible reasons and solutions for other districts that may be struggling to improve student achievement.

Data Gathering Procedures

The study examined the following district information: (a) socio-economic status of students, (b) academic achievement using average ACT scores, (c) percentage of certified teachers, (d) district class size, (e) per pupil expenditure, and (f) percentage of minority students.

Data for each public school district are reported by the Louisiana Department of Education. District Performance Scores for the 2007-2008 school year, the most recent data available to the public, was used as the student achievement measurement. Since student achievement is often used as the dependent variable in educational research, the District Performance Scores were used as the dependent variable in null Hypotheses 1-6 (See Table 1). The scores were obtained from the Louisiana Department of Education website. The District Performance Scores are found on the website for the Louisiana Department of Education. All other data were obtained from the Annual Louisiana State Education Progress Report (Louisiana Department of Education, 2009c).
Table 1

*Statistical Techniques for Analyzing Null Hypotheses*

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Variable Scales (CAT/INT/RAT)</th>
<th>Variable Dep. or Ind.</th>
<th>Statistical Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SES</td>
<td>Independent</td>
<td>ANCOVA Pearson's Coefficient</td>
</tr>
<tr>
<td>2</td>
<td>ACT</td>
<td>Dependent</td>
<td>ANCOVA Pearson's Coefficient</td>
</tr>
<tr>
<td>3</td>
<td>CERT</td>
<td>Dependent</td>
<td>ANCOVA Pearson's Coefficient</td>
</tr>
<tr>
<td>4</td>
<td>CLASS</td>
<td>Dependent</td>
<td>Pearson's Coefficient</td>
</tr>
<tr>
<td>5</td>
<td>PPE</td>
<td>Dependent</td>
<td>Pearson's Coefficient</td>
</tr>
<tr>
<td>6</td>
<td>MIN</td>
<td>Dependent</td>
<td>Pearson's Coefficient</td>
</tr>
</tbody>
</table>

Note: CAT = Categorical or Nominal; INT = Interval; RAT = Ratio

Research Questions and Null Hypotheses

The following research questions were addressed in this study:

1. Is there a significant difference in district performance scores between the high performing school districts and the lower performing school districts when controlling for socio-economic status? DPS = \( \beta_0 + \beta_1 \) (socio-economic status) + random error term.

2. Is there a significant difference in ACT scores (college entrance examination) between the high performing school districts and the lower performing school districts when controlling for socio-economic status? DPS = \( \beta_0 + \beta_1 \) (ACT average) + random error term.
3. Is there a significant difference in certified teachers (percentage of certified teachers in the district) between the high performing school districts and the lower performing school districts when controlling for socio-economic status? 

\[ \text{DPS} = \beta_0 + \beta_1 \text{ (percentage of certified teachers) } + \text{ random error term.} \]

4. Is there a significant difference in district class size (average number of classes within district with 20 or fewer students) between the high performing school districts and the lower performing school districts when controlling for socio-economic status? 

\[ \text{DPS} = \beta_0 + \beta_1 \text{ (district class size average) } + \text{ random error term.} \]

5. Is there a significant difference in per pupil expenditure (amount each district is allocated per student) between the high performing school districts and the lower performing school districts when controlling for socio-economic status? 

\[ \text{DPS} = \beta_0 + \beta_1 \text{ (per pupil expenditure) } + \text{ random error term.} \]

6. Is there a significant difference in the district minority population (percentage of nonminority students with the district) between the high performing school districts and the lower performing school districts when controlling for socio-economic status? 

\[ \text{DPS} = \beta_0 + \beta_1 \text{ (percentage of nonminority students) } + \text{ random error term.} \]

Statistical analyses tested the following null Hypotheses against similar alternate hypotheses:
$H_0$ 1: There is no significant difference in district performance scores between the high performing school districts and the lower performing school districts when controlling for socio-economic status. ($H_0: \beta_1 = 0; H_a: \beta_1 \neq 0$).

$H_0$ 2: There is no significant difference in ACT scores (college entrance examination) between the high performing school districts and the lower performing school districts when controlling for socio-economic status. ($H_0: \beta_1 = 0; H_a: \beta_1 \neq 0$).

$H_0$ 3: There is no significant difference in certified teachers (percentage of certified teachers in the district) between the high performing school districts and the lower performing school districts when controlling for socio-economic status. ($H_0: \beta_1 = 0; H_a: \beta_1 \neq 0$).

$H_0$ 4: There is no significant difference in district class size (average number of classes within district with 20 or fewer students) between the high performing school districts and the lower performing school districts when controlling for socio-economic status. ($H_0: \beta_1 = 0; H_a: \beta_1 \neq 0$).

$H_0$ 5: There is no significant difference in per pupil expenditure (amount each district is allocated per student) between the high performing school districts and the lower performing school districts when controlling for socio-economic status. ($H_0: \beta_1 = 0; H_a: \beta_1 \neq 0$).

$H_0$ 6: There is no significant difference in the district minority population (percentage of nonminority students with the district) between the high
performing school districts and the lower performing school districts when controlling for socio-economic status. \((H_0: \beta_1 = 0; H_a: \beta_1 \neq 0)\).

A statistic or value will be determined if the null hypothesis is valid. Creswell (2005) explained, “statistical significance is when the observed values (e.g., before and after a treatment in an experiment, the difference between mean scores for two or more groups or the relationship between two variables) provide a statistical value (p-value) that exceeds the predetermined alpha level set by the researcher” (p. 599). Creswell also mentioned that the following rules must be used to determine if the p-value is statistically significant in order to reject or fail to reject the null Hypotheses.

Rule 1: If the probability value is less than or equal to the significance level, then reject the null hypothesis, and conclude that the research finding is statistically significant.

Rule 2: If the probability value is greater than the significance level, then fail to reject the null hypothesis, and conclude that the research finding is not statistically significant. (p. 191)

Data Analysis

The data collected from the Louisiana Department of Education were entered into the Statistical Package for the Social Sciences (SPSS) and then analyzed. Pearson Coefficient and a univariate analysis of covariance were used to determine if there is a significant difference District Performance Scores throughout the state of Louisiana and each of the variables to be investigated in null Hypotheses 1-6, after controlling for all of the other variables individually and collectively. It was imperative that socio-economic
status was accounted for because research has shown that it plays a significant role on student learning outcomes (King & MacPhail-Wilcox, 1994).

Jaccard & Becker (1997) wrote that the conventional alpha level used in behavioral science research to test statistical significance is .05. Creswell (2005) mentioned that the alpha level is necessary to specify low probability areas on a curve. Furthermore he explained:

A probability level that reflects the maximum risk you are willing to take that any observed differences are due to chance. It is typically set at .01 (1 out of 100 times the sample score will be due to chance) or .05 (5 out of 100 times it will be due to chance). This means that 1 out of 100 times (or 5 out of 100 times) an extremely low probability value will actually be observed if the null hypothesis is true. The area on the normal curve for low probability values if the null hypothesis is true is called the critical regression. If sample data fall into the critical region, the null hypothesis is rejected. This means that instead of there is no difference as stated in the null hypothesis, we find the alternative to probably be true: there is a difference. (p. 188)

The conventional alpha value level of $p < .05$ was assigned for this study. The data and statistical interpretations are discussed in detail in Chapter four.
CHAPTER 4

RESULTS

Introduction

This study examined School District Performance Scores and the impact the following factors may have had on the scores: (a) socio-economic status of students, (b) academic achievement using average ACT scores, (c) percentage of certified teachers, (d) district class size, (e) per pupil expenditure, and (f) percentage of minority students. These data were used to determine why a district is considered low performing or high performing and if it has an impact on the success or failure of School District Performance Scores in Louisiana. The Statistical Package for the Social Sciences, 18.0 for Windows, was used to analyze the data collected from 68 school districts in Louisiana. The results of the study are presented in this chapter. The first section details the information as descriptive statistics. The results of the statistical tests for the six null hypotheses are reported in the next section.

Descriptive Statistics

Descriptive statistics for the variables investigated in the study are collectively reported in Table 2. Means and standard deviations are reported for all 68 school districts along with the two subgroups of school districts listed as high performing and low performing. The high performing districts (n=18) were created by identifying all district
with a District Performance Score in the 92nd percentile or higher on the distribution of District Performance Scores list from the 2007-2008 school year. The low performing school districts (n=18) were identified by selecting districts with District Performance Scores equal to or less than the 80th percentile of the distribution of District Performance Scores.

The data in Table 2 show that the mean for socio-economic status (student free and reduced lunch percentage) in the low performing school districts (M = 80.83, SD = 8.08) was higher than the mean for the high performing school districts (M = 52.22, SD = 9.77). The low performing school districts also had a higher mean for district class size (M = 65.77, SD = 11.19) than the high performing school districts (M = 63.34, SD = 11.29). District class size was used to show the percentage of classes that averaged 20 or less students throughout the district during the school year. In addition, the low performing school districts showed a higher mean for the minority variable as determined by the percentage of minorities in the school district (M = 75.25, SD = 15.69) as compared to the high performing school districts ((M = 34.07, SD = 16.43). On the other hand, the mean ACT score for the high performing school districts were higher (M = 20.26, SD = .58) than the low performing school districts (M = 17.71, SD = .96). The certified teacher status mean with the high performing school districts was higher (M = 95.89, SD = 4.52) than the low performing school districts (M = 91.72, SD = 8.99). The mean for the per pupil expenditure variable for the high performing school districts was higher (M = 11871.50, SD = 3223.44) as compared to the low performing school districts (M = 11728.11, SD = 2186.30). The mean District Performance Score for the high
performing school districts ($M = 100.71$, $SD = 4.36$) was above the low performing school districts ($M = 71.74$, $SD = 5.93$).

Table 2

*Means and Standard Deviation of Variables for School Districts in Louisiana*

<table>
<thead>
<tr>
<th>Variable</th>
<th>All School Districts (N = 68)</th>
<th>High Performing Districts (n = 18)</th>
<th>Low Performing Districts (n = 18)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>DPS</td>
<td>86.37</td>
<td>11.59</td>
<td>100.71</td>
</tr>
<tr>
<td>SES</td>
<td>67.05</td>
<td>13.65</td>
<td>52.22</td>
</tr>
<tr>
<td>POSES</td>
<td>32.95</td>
<td>8.74</td>
<td>47.28</td>
</tr>
<tr>
<td>ACT</td>
<td>19.14</td>
<td>1.22</td>
<td>20.26</td>
</tr>
<tr>
<td>CERT</td>
<td>94.35</td>
<td>5.94</td>
<td>95.89</td>
</tr>
<tr>
<td>DCS</td>
<td>64.87</td>
<td>11.21</td>
<td>63.34</td>
</tr>
<tr>
<td>PPE</td>
<td>11647.94</td>
<td>3447.12</td>
<td>11871.50</td>
</tr>
<tr>
<td>MIN</td>
<td>50.18</td>
<td>22.56</td>
<td>34.07</td>
</tr>
</tbody>
</table>

Data Analysis

An analysis of covariance was performed to determine if correlations existed among the variables used in the study and to determine if any of the variables would predict District Performance Scores in the 68 school districts in Louisiana. The analysis included the following variables: a) socio-economic status of students as measured by percentage of free/reduced lunch students, (b) academic achievement using average ACT scores, (c) percentage of certified teachers, (d) district class size, (e) per pupil expenditure, and (f) percentage of minority students. District Performance Scores, as
assigned by the Louisiana State Department of Education on an annual basis, was the dependent variable.

Abbreviations were used in the tables to identify the variables. They are as follows: District Performance Scores (DPS), Socio-economic status (SES and POSES), Academic Achievement using ACT Scores (ACT), Certification of Teachers (CERT), District Class Size (DCS), Per Pupil Expenditure (PPE), and Minority Percentages (MIN).

The study noted significant correlations in two of the six variables that may have an influence on the district performance score for school districts before accounting for socio-economic status. District Performance Scores and ACT scores have show to have an influence on student learning. The analysis also identified the percentage of certified teachers as having a significant impact on District Performance Scores before controlling for socio-economic status. Per pupil expenditure and the average number of students in a class throughout the district did not show a significant impact of District Performance Scores. Class size represented the proportion of classes in the district with 20 or fewer students in the classes. Upon performing an analysis of covariance to account for socio-economic status, the certified teacher variable was not significant.

As seen in Table 3, there was a significant correlation between District Performance Scores and socio-economic status of the districts. The percentage of minority students in the district also negatively impacted District Performance Scores. Simply, districts with a high percentage of poor and minority students, were located in lower performing school districts as measured by District Performance Scores.
Average ACT scores within the districts positively impacted District Performance Scores. School districts with high District Performance Scores tend to have students that are performing higher on the ACT as compared to their counterparts in the low performing school districts. In most cases, students that have a higher percentage of poor economic situations, higher percentage of uncertified teachers, with a high percentage of minority students, and lower ACT scores, tend to be associated with districts with low District Performance Scores.

The certification percentage of teachers within the district, teachers certified within the district, was significantly and positively correlated with District Performance Scores. School districts that hired a higher percentage of uncertified teachers, tend to service more students that qualify for free or reduced meals. Therefore, school districts with students that are classified as low socio-economic status, are more likely to be taught by uncertified teachers. These students may not get the same educational opportunities as students that are instructed by certified teachers in the higher performing school districts. For this study, when socio-economic status was accounted for in the analysis of covariance with the percentage of certified teachers within the district, there was no significant correlation between the higher performing and the lower performing school districts. Additionally, the study did not show any significant correlation between District Performance Scores and per pupil expenditure.
Table 3

_Pearson Correlation Among Variables_

<table>
<thead>
<tr>
<th>Variable</th>
<th>DPS</th>
<th>NOTSES</th>
<th>ACT</th>
<th>CERT</th>
<th>DCS</th>
<th>PPE</th>
<th>MIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. DPS</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. POSES</td>
<td>.915**</td>
<td>--</td>
<td>.859**</td>
<td>.435**</td>
<td>-229</td>
<td>-136</td>
<td>-859**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.001</td>
<td>.001</td>
<td>.008</td>
<td>.179</td>
<td>.429</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td>3. ACT</td>
<td>.817**</td>
<td>-859**</td>
<td>--</td>
<td>.191</td>
<td>-166</td>
<td>-034</td>
<td>.693**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.001</td>
<td>.001</td>
<td>.118</td>
<td>.176</td>
<td>.781</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td>4. CERT</td>
<td>.317**</td>
<td>-435**</td>
<td>.191</td>
<td>--</td>
<td>.078</td>
<td>.097</td>
<td>-256*</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.008</td>
<td>.001</td>
<td>.118</td>
<td>.527</td>
<td>.429</td>
<td>.035</td>
<td></td>
</tr>
<tr>
<td>5. DCS</td>
<td>-.026</td>
<td>.083</td>
<td>-.166</td>
<td>-.078</td>
<td>--</td>
<td>.026</td>
<td>-.047</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.001</td>
<td>.001</td>
<td>.001</td>
<td>.001</td>
<td>.001</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td>6. PPE</td>
<td>.034</td>
<td>.400</td>
<td>-.034</td>
<td>.429</td>
<td>.835</td>
<td>--</td>
<td>.082</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.785</td>
<td>.001</td>
<td>.781</td>
<td>.001</td>
<td>.001</td>
<td>.507</td>
<td></td>
</tr>
<tr>
<td>7. MIN</td>
<td>-.727**</td>
<td>.707**</td>
<td>-.693**</td>
<td>-.256*</td>
<td>-.041</td>
<td>.082</td>
<td>--</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.001</td>
<td>.001</td>
<td>.001</td>
<td>.035</td>
<td>.743</td>
<td>.507</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05  ** p < .01

Null Hypothesis 1

\( H_0 1: \) There is no significant difference in District Performance Scores between the high performing school districts and the lower performing school districts when controlling for socio-economic status. \((H_0: \beta_1 = 0; H_a: \beta_1 \neq 0).\)

Analysis of research data show that a significant difference exists between the District Performance Score of the lower performing and higher performing school districts when controlling for socio-economic status. Table 4 shows the test of an analysis
of covariance for School District Performing Scores has a p-value of 0.001, therefore null Hypothesis 1 was rejected.

Table 4

*Analysis of Covariance for District Performance Scores*

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>7926.843 a</td>
<td>2</td>
<td>3963.421</td>
<td>238.697</td>
<td>.001</td>
</tr>
<tr>
<td>Intercept</td>
<td>12262.383</td>
<td>1</td>
<td>12262.383</td>
<td>738.503</td>
<td>.001</td>
</tr>
<tr>
<td>POSES</td>
<td>372.336</td>
<td>1</td>
<td>372.336</td>
<td>22.424</td>
<td>.001</td>
</tr>
<tr>
<td>NEWCAT</td>
<td>831.903</td>
<td>1</td>
<td>831.903</td>
<td>50.101</td>
<td>.001*</td>
</tr>
<tr>
<td>Error</td>
<td>547.945</td>
<td>33</td>
<td>16.604</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>276125.810</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>8474.788</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. R Squared = .935 (Adjusted R Squared = .931)

Table 5

*Covariance, Means, Adjusted Post Means for District Performance Scores*

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean of POSES Covariate Groups</th>
<th>Mean DPS</th>
<th>Adjusted DPS Mean</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Performing</td>
<td>47.28</td>
<td>100.71</td>
<td>95.45</td>
<td>p &lt; 0.001 *</td>
</tr>
<tr>
<td>Low Performing</td>
<td>19.17</td>
<td>71.74</td>
<td>77.00</td>
<td></td>
</tr>
</tbody>
</table>

* The mean difference is significant at the .05 level.
Null Hypothesis 2

\( H_0 \): There is no significant difference in ACT scores (college entrance examination) between the high performing school districts and the lower performing school districts when controlling for socio-economic status.

\( (H_0: \beta_1 = 0; H_a: \beta_1 \neq 0) \).

Analysis of research data show that a significant difference exists between district academic achievement using ACT average and District Performance Scores after controlling for the influence of student socio-economic status. Table 3 shows that the test of Pearson's Coefficient had a p-value of 0.001 and an analysis of covariance for the district ACT scores has a mean difference p-value of 0.005, therefore null Hypothesis 2 was rejected.

Table 6

*Analysis of Covariance for ACT Scores*

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>63.592^a</td>
<td>2</td>
<td>31.796</td>
<td>63.368</td>
<td>.001</td>
</tr>
<tr>
<td>Intercept</td>
<td>695.296</td>
<td>1</td>
<td>695.296</td>
<td>1385.690</td>
<td>.001</td>
</tr>
<tr>
<td>POSES</td>
<td>4.814</td>
<td>1</td>
<td>4.814</td>
<td>9.594</td>
<td>.004</td>
</tr>
<tr>
<td>NEWCAT</td>
<td>4.513</td>
<td>1</td>
<td>4.513</td>
<td>8.993</td>
<td>.005*</td>
</tr>
<tr>
<td>Error</td>
<td>16.558</td>
<td>33</td>
<td>.502</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>13053.360</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>80.150</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. \( R^2 = .793 \) (Adjusted \( R^2 = .781 \))
Table 7

*Covariance, Means, Adjusted Post Means for ACT Scores*

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean of POSES Covariate Groups</th>
<th>Mean ACT</th>
<th>Adjusted ACT Mean</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Performing</td>
<td>47.28</td>
<td>20.26</td>
<td>19.66</td>
<td>p &lt; 0.005 *</td>
</tr>
<tr>
<td>Low Performing</td>
<td>19.17</td>
<td>17.71</td>
<td>18.30</td>
<td></td>
</tr>
</tbody>
</table>

* The mean difference is significant at the .05 level.

Null Hypothesis 3

\[ H_0 \text{3: There is no significant difference in certified teachers (percentage of certified teachers in the district) between the high performing school districts and the lower performing school districts when controlling for socio-economic status.} \]

\[ (H_0: \beta_1 = 0; \ H_A: \beta_1 \neq 0). \]

Analysis of research data show that no significant difference exists between the percentage of certified teachers and District Performance Scores after controlling for the influence of student socio-economic status. Table 3 does show a significant correlation before accounting for socio-economic status. Upon conducting an analysis of covariance in Table 6, a non-significant mean p-value of .308 was derived, therefore null Hypothesis 3 was not rejected.
Table 8

Analysis of Covariance for Certified Teachers

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>404.124 ( ^a )</td>
<td>2</td>
<td>202.062</td>
<td>4.520</td>
<td>.018</td>
</tr>
<tr>
<td>Intercept</td>
<td>15762.781</td>
<td>1</td>
<td>15762.781</td>
<td>352.583</td>
<td>.001</td>
</tr>
<tr>
<td>POSES</td>
<td>247.941</td>
<td>1</td>
<td>247.941</td>
<td>5.546</td>
<td>.025</td>
</tr>
<tr>
<td>NEWCAT</td>
<td>47.921</td>
<td>1</td>
<td>47.921</td>
<td>1.072</td>
<td>.308</td>
</tr>
<tr>
<td>Error</td>
<td>1475.317</td>
<td>33</td>
<td>44.707</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>318657.800</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>1879.441</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. R Squared = .215 (Adjusted R Squared = .167)

Table 9

Covariance, Means, Adjusted Post Means for Certified Teachers

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean of POSES Covariate Groups</th>
<th>Mean CERT</th>
<th>Adjusted CERT Mean</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Performing</td>
<td>47.28</td>
<td>95.89</td>
<td>96.02</td>
<td>0.308</td>
</tr>
<tr>
<td>Low Performing</td>
<td>19.17</td>
<td>91.75</td>
<td>91.59</td>
<td></td>
</tr>
</tbody>
</table>

* The mean difference is significant at the .05 level.

Null Hypothesis 4

\( H_0 \): There is no significant difference in district class size (average number of classes within district with 20 or fewer students) between the high performing school districts and the lower performing school districts when controlling for socio-economic status. (\( H_0: \beta_1 = 0; H_a: \beta_1 \neq 0 \).
Analysis of research data show that no significant difference exists between district class size average and district performance, so there was no need to control for the influence of student socio-economic status. Table 3 shows that the test of the Pearson Coefficient has a p-value at 0.830, therefore null Hypothesis 4 was not rejected.

Null Hypothesis 5

\( H_0 \): There is no significant difference in per pupil expenditure (amount each district is allocated per student) between the high performing school districts and the lower performing school districts when controlling for socio-economic status. \( (H_0 : \beta_1 = 0; H_a : \beta_1 \neq 0) \).

Analysis of research data show that no significant difference exists between district per pupil expenditure and District Performance Scores, so there was no need to control for the influence of student socio-economic status. Table 3 shows the test of the Pearson Coefficient has a p-value of .785, therefore null Hypothesis 5 was not rejected.

Null Hypothesis 6

\( H_0 \): There is no significant difference in the district minority population (percentage of nonminority students with the district) between the high performing school districts and the lower performing school districts when controlling for socio-economic status. \( (H_0 : \beta_1 = 0; H_a : \beta_1 \neq 0) \).

Upon conducting Pearson Correlation, there was a negative significant correlation between District Performance Scores and minority students. Because there is a negative correlation, an analysis of covariate cannot be conducted, therefore null Hypothesis 6 was not rejected.
CHAPTER 5

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

The findings from this study are presented in this Chapter. The results of the study are discussed in the first section. The next section includes a discussion of the study’s findings as it relates to previous studies. The following section discusses conclusions in the study. The final section includes recommendations regarding further empirical studies.

Summary of Results

This study examined School District Performance Scores among the lower performing and the higher performing school districts and the impact that certain factors may have on the scores. The investigation included researching socio-economic status of students, academic achievement using average ACT scores, and the number of certified teachers throughout the state. Additionally the study investigated the impact of average district class size, per pupil expenditure, and the number of minority students had on school districts that were grouped as low performing or high performing based on School District Performance Scores. The study noted strong correlations in two of the six independent variables that may have an influence on the District Performance Score for school districts.
Predictor variables were entered into Statistical Package for the Social Science, 18.0 for Windows (SPSS) and descriptive statistics were analyzed. A Pearson Correlation and an analysis of covariance were the statistical tests used in the study. The results yielded a number of significant statistical findings.

Significant differences were evident among two of the variables when comparing the lower performing school districts to the higher performing school districts. The average ACT scores, socio-economic status of students, as measured by free/reduced lunch eligibility, in addition to the average size of the minority population, have shown in past research and this study, to have an influence on student academic learning in addition to district success and failure. The analysis also showed that the percentage of certified teachers had a impact on District Performance Scores before accounting for socio-economic status.

Per pupil expenditure and the average percentage of students in a class throughout the district did not show a significant impact on District Performance Scores. Per pupil expenditure was determined by districts reporting the average amount of funding given to the district for each individual student through federal, state, and local governments. Funding amounts ranged from $21,339 for one district to the lowest amount of $8,133. Class size represented the proportion of classes in the district with 20 or fewer students in the classes. The National Board for Teaching Certification Standards Board did not release the information needed upon request to include their information in the study.

Discussion

Earlier research discussion from chapter two referred to a study by Allen & Allen that showed as student scores increased, the possibility of them being successful in school
(particularly in college) improved. It was also mentioned in another study by Noda that school district average ACT scores had a definite positive impact on student learning. It was concluded that, in order for students to improve success on the ACT, kindergarten through eighth grade academic standards must be designed to focus on the knowledge and skills that are essential for college and career readiness, and it must be known that all of the curriculum requirements are non-negotiable exemptions for students.

As mentioned earlier, Tajalli and Opheim emphasized in their study factors that contributed to the success and failure of other schools containing a high number of low socio-economic students. In comparison to this study, Tajalli and Opheim also determined that socio-economic status had an effect on school performance. The higher the percentage of low socioeconomic students that were enrolled in a school, the lower the students in the school performed academically.

It was determined in a study earlier that many minority students are not making adequate progress. Borman and Rachuba concluded in their study that the double jeopardy concept of being poor and a minority exposes greater risks and fewer resilience-promoting conditions. It was found that minority students have poorer levels of academic self-efficacy and are exposed to school environments that are less conducive to academic resilience. This study also concluded that the percentage of minority students in a school district had a negative correlation on District Performance Scores, therefore an analysis of covariance could not be performed.

Per pupil expenditure and the average number of students in a class throughout the district did not have a significant impact on District Performance Scores or any other variables in the study. Elliot's study, as mentioned earlier, investigated how the allocation
of public school funds affected students' achievement. The findings included that school funding that addresses student learning does affect academic achievement effectively. She also found that the relation between finance and class size was not clear, but she suggested that allocating resources to have smaller class sizes in high poverty schools may not be enough to improve student achievement.

Class size represented the proportion of classes in the district with 20 or fewer students in the classes. Most research involving the effects of class size on student achievement reported classes with 20 or fewer students tend to have higher academic achievement than larger classes. It was mentioned earlier in a study by Finn that students who were enrolled in smaller classes in grades kindergarten through third grade achieved significantly higher results than students in the larger classes. The research also concluded that students that attended smaller classes for four consecutive years showed greater academic results. Finn reported in another study that the effects of smaller classes had a greater impact on minority students. The study concluded that smaller class size narrowed the achievement gap between white students and minority students. As noted in chapter three, researchers in those studies and others suggested class size affected student achievement positively when it was evident in the lower grades. Henry also found in his study that black students placed in smaller classes showed a greater impact on academic tests such as the ACT. Still, in this study, data for class size did not indicate the schools or students within school districts in Louisiana benefited from smaller classes.

The results of the study showed that teacher certification status did not show a significant relation to student achievement and District Performance Scores between the lower performing and the higher performing school districts after controlling for socio-
economic status. Over the past few years, federal and state laws have mandated that certified teachers are hired to teach students. There has been an increase in certified teachers throughout the state and therefore, the percentage of noncertified teachers educating students has dwindled. Unfortunately, the lower performing school districts are still having difficulty finding ample certified teachers for their schools as compared to the higher performing schools and, it has become more challenging in some areas such as mathematics and science.

Conclusions

The differences between District Performance Scores in Louisiana schools and the percentage of socio-economic status of students in the districts was investigated using the analysis of covariance. There was a significant difference between the two variables with higher District Performance Scores associated with districts with lower percentages of students that are classified as at-risk or low socio-economic status.

The relationship between District Performance Scores in Louisiana and the average scores of the American College Test (ACT) among students in the districts was investigated using the analysis of covariance. There was a positive correlation between the two variables with higher District Performance Scores associated with districts with higher average ACT scores of students.

The relationship between District Performance Scores in Louisiana and the percentage of certified teachers in the districts was also investigated using the Pearson Correlation Coefficient. There was a positive correlation between the two variables with higher District Performance Scores associated with the districts with higher percentages
of certified teachers employed in their system. After controlling for socio-economic status, there was no longer a significant difference.

The relationship between District Performance Scores in Louisiana and the average percentage of small class (e.g., 20 or fewer students) throughout the district was investigated using the Pearson Correlation Coefficient. The statistical test did not show any significant differences between the District Performance Scores and the smaller class size so controlling for socio-economic status was not necessary.

The relationship between District Performance Scores in Louisiana and the per pupil expenditure amount recorded for the district was investigated using the Pearson Correlation Coefficient. The statistical test did not show any significant relationship between the District Performance Scores and per pupil expenditure.

The difference between District Performance Scores in Louisiana and the percentage of minority students in the districts was investigated using the Pearson analysis of covariance. There was a correlation between the two variables with higher District Performance Scores associated with the districts that have lower percentages of minority students.

It is important to note that the study noted a high correlation between the two variables, socio-economic status and the percentage of minority students within the district. The effect that both variables have on District Performance Scores were similar. Even so, socio-economic status has a higher correlation on District Performance Scores than the effect from the minority population. Simply, districts face a daunting task of educating students that service a large number of at risk students.
Recommendations

The initial study included investigating the relevance of having National Board Certified Teachers in the classrooms and the impact it may have on student achievement. In addition, it was anticipated that a correlation between District Performance Scores in Louisiana and the percentage of National Board certified teachers in each district would yield favorable results in favor of National Board certified teachers. Unfortunately, the researcher was not able to retrieve the pertinent information from the organization to have the information used in this study. It is my recommendation that more research be done to determine if there is a direct link to having National Board certified teachers in the classroom and the success and/or failure of the District Performance Scores in Louisiana.

School districts classified as low performing must strive to provide the incentives to recruit and retain certified teachers. Some districts have begun offering financial incentives to entice certified to work in their districts. This may convince some certified teachers to work in the low performing districts and in subject areas such as math and special education which are most difficult to employee.

A more detailed analysis of the impact of student learning throughout the district should be explored. Although the study did not yield any significant relationship between District Performance Scores and class size, there may be more of a breakdown needed to investigate possible variables such as smaller schools, rural schools, and grade configuration. Data for this study were aggregated at the district level.

Some districts may not have reduced the size of classes for various reasons. Burns (2003) made an important assessment when he wrote "class size reduction works best
when coupled with professional development opportunities for teachers. Educators should be trained in new teaching techniques that take advantage of smaller class sizes” (p. 10). Simply, reducing class size does not guarantee student improvement in academics. If the teacher continues to use similar instructional strategies as classrooms with 20 or more students, academic achievement will not be statistically significant. Professional development is vital in that it has been documented that many teachers throughout the United States are not equipped to teach students well. Further investigation with the use of individual school data should be used to validate the impact of student achievement with reduced class size.

Provided there was a significant negative relationship between districts’ percentage of socio-economic status and District Performance Scores, educators should continue to implement early intervention programs that address the social and academic deficiencies of the students classified as at risk. Programs should include afterschool and summer enrichment classes.

There may be an opportunity to determine if per pupil expenditure can have a significant impact on students if it is addressed in a different manner. Instead of looking at the total amount allocated to schools per pupil, it may be more appealing to investigate exactly how much of the allocated amount impacts student learning. Reeves (2002) reported in a study that the relationship between expenditures and student depends upon how money is spent on resources instead of how much money is allocated per student. MacPhail-Wilcox and King (1986) determined that the relationships between student achievement and resource variables differed based on student characteristics. It is recommended that further study investigates the relationships between the resource
variables and academic achievement among low and high performing school districts in Louisiana. Another facet that should be investigated is the amount of funding that is allocated to improve the school libraries in the school. With the impact research has shown on the need for students to read, it would be interesting to see how much is spent on improving school libraries and the relationship it may have on low performing and high performing school districts.

This study can contribute to the growing body of information related to improving district success and student achievement. The results can be examined to assist the Louisiana Department of Education in designing programs to assist in improving District Performance Scores thereby concentrating on the variables that play a role on district success and failure. Designing programs to address issues dealing with struggles to educate minorities, students from low socioeconomic families, academic achievement, and inability to find enough certified teachers in the lower performing school districts should be of utmost importance.

The Louisiana Regional Service Centers located throughout the state can also design training sessions to assist educators the designated areas in addressing the variables in a manner that will improve district success. It should be considered that school superintendents from low performing school districts be allotted opportunities to attend meetings to address their districts’ areas of weakness and continue to show a district plan of action and annual progress.

The study was designed to investigate factors that might contribute to the disparity associated with District Performance Scores in Louisiana. The object was never to predict the reasons for the high performing school districts or the causes for District
Performance Scores. It is recommended that additional research consider a multiple regression model such as a partial correlation to further investigate variables that are highly correlated. Such is the case in this study with socio-economic percentages and the percent of the minority population in the school district. A multiple regression with District Performance Score as the dependent variable and socio-economic status, ACT scores, certified teachers could be the independent variable while controlling for the percentage of minority students within the district.
REFERENCES


Lips, Watkins, and Fleming (2008, September 8). Does spending more on education improve academic achievement? Published by the Heritage Foundation no. 2179.


APPENDIX

HUMAN USE COMMITTEE REVIEW FORM
TO: Mr. Ronnie Harrison

FROM: Barbara Talbot, University Research
ttalbot@latech.edu
318/257-5075

SUBJECT: EXEMPT STATUS
HUMAN USE COMMITTEE REVIEW

DATE: February 17, 2010

TITLE: “Factors Affecting School District Performance Scores in Louisiana”
HUC-734

Thank you for submitting your Human Use Proposal to Louisiana Tech’s Institutional Review Board. It has been determined that your proposal meets requirements for exemption for the following reasons:

• A Consent Form is not required.
• All publically available data not tied to human subjects by name or other identifiers are considered exempt.
• Since this involves existing records of grouped data that are publically available, this is exempt.

If you have any questions, please contact Dr. Mary Livingston at 257-4513.
VITA

Ronnie Harrison was born in New Orleans, Louisiana. He graduated from Covington High School in Covington, Louisiana in 1987. Mr. Harrison received his Bachelor of Science Degree from The University of Louisiana at Monroe in 1993. In 1997, he received his Master of Education Degree from The University of Louisiana at Monroe.


In 1999, Mr. Harrison accepted an assistant principal position in the Monroe City School System at J. S. Clark Magnet School. In 2001, he became the assistant principal in the Ouachita Parish School System at Sterlington High School. On July 27, 2003, Mr. Harrison was appointed principal of Shady Grove Elementary in the Ouachita Parish School System. In 2007, he was selected as principal of Grambling State University Middle School. Presently, Mr. Harrison is principal at Dalton Elementary Charter School in the Advance Baton Rouge Charter Association in Baton Rouge, Louisiana.

Mr. Harrison entered the doctoral program with the Louisiana Education Consortium in September 2003. Louisiana Tech University became his home base.
school. Ronnie Harrison received his Doctor of Education Degree in Educational Leadership in May 2010.