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By

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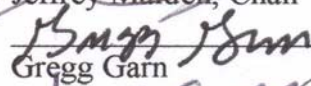
FISCAL EQUITY OF TEACHER SALARY AND COMPENSATION IN
OKLAHOMA

A DISSERTATION APPROVED FOR THE DEPARTMENT OF EDUCATIONAL
LEADERSHIP AND POLICY STUDIES

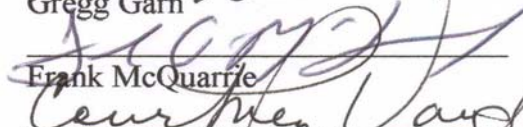
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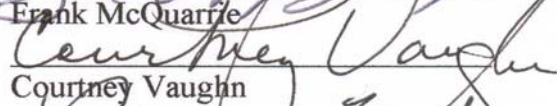
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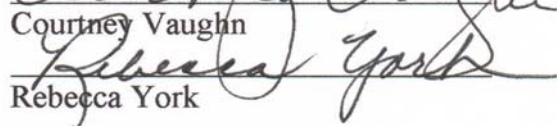
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ABSTRACT

This quantitative study investigated the equitable distribution of resources to determine their accessibility to all children attending public schools in Oklahoma. With *No Child Left Behind* (NCLB) schools are mandated to employ “highly qualified” teachers. Teachers are an important resource and their significance is emphasized more as schools attempt to increase student achievement. Every student educated in Oklahoma should have an equal right to educational resources. Teacher salaries consume the largest portion of the educational budgets and an investigation of salaries and compensation as a resource was warranted. This study investigated two fiscal years; 2000, the year before a \$3000 pay raise was awarded, and 2005, the most recent year after the pay raise.

Descriptive statistics were used to determine horizontal equity and with correlations, regression analysis, the Gini coefficient, and McLoone index used to determine wealth neutrality. Instructional salaries and total instructional compensation were inequitably distributed in Oklahoma and the degree of inequity increased from fiscal years 2000 to 2005. Wealth neutrality was examined using both the Gini coefficient and McLoone index and it was determined that the distribution of resources was dependent upon where a student resides. Four variables, assessed property valuation, socioeconomic status, percentage of Caucasian students, and proximity to a bordering state were investigated to determine their impact on the distribution of resources. All variables, except the percentage of Caucasian students, were found to significantly influence the distribution of resources. This study exposed some inequities that exist in the distribution of instructional salaries and total instructional compensation in Oklahoma thus preventing

all students who are educated in our public schools from receiving equal access to resources that determine the quality of educational instruction the student receives.

CHAPTER 1

Introduction

Through the ages, different societies have transmitted knowledge to young people by various methods. In America, the idea of public education took root when, at the nation's conception, Jefferson advocated free elementary schools for all American citizens. However, states did not embrace his proposal until the mid 1800s when the first "common schools" began in Massachusetts and Connecticut.¹

The founding fathers, including Thomas Jefferson, believed individual states should exercise greater power over citizens who resided within each state's boundaries. This concept limited the powers of the federal government and enhanced the role of the individual states. This federal design obliged each state to assume certain financial responsibilities for its citizens; that responsibility included the education of its youth. Although the federal government would contribute to the education of all children through federal programs, the individual states assumed the larger portion of this financial burden.

Over the last one hundred years, the amount of money the federal government contributed to education rose significantly; furthermore, financing education became an increasingly extensive, as well as expensive, responsibility for the federal government. By 2005, the federal budget for the Department of Education was approximately \$71.5 billion. The budget included both elementary and secondary programs for nearly 14,000 school districts and approximately fifty-four million students who attended more than 93,000 public schools and 27, 000 private schools.²

The delegation of responsibility to the states, or decentralization, of public education by the federal government provided the states with a unique system of education with both strengths and weaknesses. Individual states controlled their own curricular and instructional systems from the beginning, and, because of this, the diversity and needs of each state's citizenry were represented. Therefore, the states, local districts, and schools have been afforded wide latitude, both financially and culturally, in the services offered to students. This decentralization of control by the federal government promoted a lack of uniform quality, leading to various and assorted services for children from state to state and also with states.

In 1998, Alaska exhibited large spending differences within its boundaries. Some districts were in the 95th percentile spending \$16,546 per student, while other districts in the 5th percentile spending \$7,379 per-pupil. Other states exhibited inequalities in expenditures, such as Vermont, (where figures were \$15,186 and \$6,442, respectively), Illinois (with figures of \$11,507 and \$5,260), New Jersey (with \$13,709 and \$8,401), and New York (with \$13,749 and \$8,518). Hawaii and the District of Columbia exhibited no variation in expenditures, a function of each being a single educational jurisdiction.³ Per-pupil spending in all states indicated a vast amount of resources needed to fund a free public education. In 2000 the average per-pupil expenditure was \$8,575, but by the 2002-2003 school year; the average had increased to almost \$9,000.⁴ With expenditures escalating and the per-pupil spending increasing, funding education continued as an extensive and expensive initiative for all states.

The myriad options available to districts and states when selecting the financial means to support education created educational inequities nationwide. In 2002-2003 the

average annual expenditure per student continued to reveal inequities in spending. New Jersey exhibited the highest per-pupil expenditure at \$12,568, while Utah's expenditures represented the least, \$4,838. A child educated in New Jersey schools had access to almost three times the level of educational resources allocated to his/her counterpart in Utah. A comparison of states more centrally located demonstrated a more modest inequity in per-pupil spending. In the Midwest, Kansas, Arkansas, Louisiana, and New Mexico border Oklahoma. While Oklahoma, Arkansas, and Louisiana kept their average expenditures per-pupil under \$7,000 with \$6,092, \$6,482 and \$6,922 respectively, the other two Midwest states were unable to do this with New Mexico spending \$7,125 and Kansas spending \$7,454 per-pupil.⁵

Berne and Stiefel defined equity in two distinctive terms: equity for children or equity for taxpayers. The authors defined what resources, services, and objects could have equitable distribution, determined whether the distribution was equitable, and described quantitative measures available to access the degree of equity. When students were the object of equitable distribution of expenditures, horizontal equity, vertical equity, and wealth neutrality became identifying principles. Horizontal equity refers to equal treatment of equals. The principle of vertical equity focused on equity adjustments necessary when educating children with varying abilities. Berne and Stiefel emphasized the wealth neutrality principle that Coon, Clune, and Sugarman introduced in 1970, but referred to it as "equal opportunity." Coons, Clune, and Sugarman argued that "the quality of public education may not be a function of wealth, other than total wealth of the state."⁶ Discrimination on the basis of property wealth within a school district would not be acceptable.⁷ Wealth neutrality, also known as fiscal neutrality, supports that property

value per-pupil should not be related to resource distribution.⁸ Litigation about fiscal (wealth) neutrality, the original basis of the educational equity, appeared in court cases across our nation for more than a quarter of a century.⁹

Citizens of the United States often sought court decisions in order to right an injustice. Of course, many citizens who lived in wealthy school districts believed educational funding to be fair, but citizens who lived in the poorer districts, where their children were denied educational advantages simply because of their address, found fault with the system. Educational equity litigation began in the 1960s and continued through the 1990s. These legal battles consumed many state courts and brought about financial equity in education for many students.

Measurement of fiscal equity had a rich history in scholarly literature. In early years, plaintiffs were unsuccessful in winning judgments against the state in equity funding cases. Coon, Clune, and Sugarman first developed the principle of wealth neutrality in *Private Wealth and Public Education*.¹⁰ Earlier equity cases resulted in nonjusticiable rulings in both Illinois and Virginia, and plaintiffs desperately sought a new approach when arguing educational equity issues. The measurement of wealth neutrality helped to validate the existence of fiscal inequity in education across the nation. It was the research contributed by Coon, Clune, and Sugarman that gave a different approach for the plaintiffs to validate the inequity that existed for children when property wealth was a contributing factor to educational resources.

Overview of Fiscal Equity

Many citizens in the United States, especially inhabitants of school districts in which educational funding remains relatively modest, believe in the right of equal

treatment, including equal opportunities in education. In the late 1960s, many scholars and practitioners questioned the fairness in funding formulas used for education. The general practice of assessing property taxes to fund education promoted unfair taxation for some citizens while promoting advantages for those who paid little or no property tax. In 1973, in the *San Antonio Independent School District v. Rodriguez*,¹¹ the United States Supreme Court ruled that education was neither explicitly nor implicitly mentioned in the United States Constitution; therefore, a public education could not be considered a fundamental right.¹²

The *Rodriguez* ruling by the United States Supreme Court resulted in a shift of equity litigation to the state courts. Inequity in funding for education existed because schools were locally controlled and money to support schools was raised from local property taxes. People within the states determined boundaries of individual school districts, but districts exhibited differences in their ability to raise money for education. A widely recognized consequence of this districting was that citizens who lived in a wealthy property district were taxed at a lower rate; however, this still enabled these citizens to raise more educational dollars to fund education. Conversely, citizens who lived in poorer property districts, but were taxed at a higher rate, could not raise funds equal to those of wealthy districts. Therefore, citizens in poorer property districts remained unable to raise the necessary funds for children in their local schools to be able to compete with students who were funded by higher property values. These fiscal inequities resulted in unfair property taxation practices that were widely used to fund education. The state courts in the 1970s, 1980s, and early 1990s presided over numerous cases concerning these funding inequities. All states maintained their own funding

formulas, so there proved to be no one correct answer to bring about equity in educational finance. The solutions remained as varied as the states.¹³

As the 1990s progressed and educators searched for answers, a change in school finance emerged. In the past, the solution to the educational problems had been making more money available; now, citizens expected results for the dollars spent on education. Within each state educational goals were established and the amount of money to reach these goals for all children became a concern. The quest became an issue, not of equity, but one of “adequacy.” When adequacy was addressed, more equitable solutions resulted. With a ruling in the 1989 *Rose v. Council for Better Education, Inc.*,¹⁴ Kentucky’s Supreme Court decided that its entire state system of public schooling needed to be reformed. Providing students with equal opportunities to achieve a court-specified set of state learning standards initiated a new direction in fiscal equity, which was labeled “adequacy.”¹⁵

Fiscal equity developed into a phase related to “efficiency,” emphasizing productivity and effectiveness of public school funds. The challenge for states and public schools evolved into producing higher student achievement with “flat” or stable resources available to them from the revenue systems in place.¹⁶ Although several total school reform groups emerged from this, what remained were decisions by local schools on improving student achievement and abilities with resources that were budgeted from local, state, and federal dollars available.

A logical approach for accomplishing the most with the educational dollars allocated to a school district required districts to include teachers as an educational resource. The largest expenditure of the educational budget of a typical school district is

spent on instructional salaries and total instructional compensation, thus validating that teachers represent an important educational resource. In the 1990s, districts across the nation began to investigate the importance of teachers in the classroom, and to differentiate between effective and ineffective teaching practices.

Teachers as Resources

Although the federal government did not identify itself as significantly responsible for financing the education of children, federal legislators enacted measures that reformed the face of education. In 1954, the *Elementary and Secondary Education Act (ESEA)* linked federal dollars to specific performance goals to ensure improved results in public education. With new federal lawmakers in office every two to eight years, (among the Senate, the House, and the President), the ESEA would undergo significant transformation. The most recent transformation of the ESEA by legislators, the *No Child Left Behind (NCLB) Act*, was signed into law on January 8, 2002 by President George W. Bush. This *NCLB Act* would bring about educational reform by making schools more accountable, and the legislation would become very expensive for states and schools to implement. States determined educational standards and local schools determined which research-based educational practices worked best in increasing student achievement. In addition, states would develop achievement tests that would be used to determine student and school accountability. To put the standards and assessments into place, states would have to use their educational dollars much more efficiently, especially if they were to be successful in reaching the goals of federal legislation.¹⁷

One mandate in the *NCLB Act*, identified as a proven educational practice, required that every student would be taught by a “highly qualified teacher.” With new standards for student learning and assessments for accountability introduced across the nation, greater attention focused on the role of teacher quality in student achievement. This focus on the importance of teachers in the student learning process brought about changes in teacher compensation, which led to an important aspect for financial reform and study. Now educational dollars must be spent on resources that most impacted student learning; good classroom teachers remained one of the most important resources.

Variations in teacher compensation remain relatively substantial across the nation. In the 2002-03 school year, California had the highest average teacher salary at \$55,693. Michigan, Connecticut, New Jersey, and the District of Columbia followed with \$54,020, \$53,962, \$53,872, and \$53,194, respectively. Variations in teacher salary between the highest and the lowest proved to be greater than \$23,000. States comprising the bottom five in lowest teacher pay rates were Montana, Mississippi, North Dakota, Oklahoma, and South Dakota with salaries of \$35,754, \$35,135, \$33,869, \$33,277, and \$32,414, respectively. Alaska, New Jersey, District of Columbia, New York, and California paid the highest beginning salaries, and the lowest beginning teacher salary, \$23,052, was paid by Montana.¹⁸

With more emphasis placed on increased student achievement, research became more concentrated on factors that favorably affect student achievement. In an article published in April 2001, William J. Bennett, Secretary of Education during the Reagan Administration, stated that the most important factor in how much a child learns while at the school is dependent upon the presence of a good teacher.¹⁹ Essentially, all studies of

school effectiveness named the effective teacher factor as the most significant in a child's educational experience.

Educational scholars have long debated how significant the classroom teacher's qualifications were in the learning process. Hanushek, one of the early researchers in this area, concluded that expenditures were not systemically related to student achievement. Teachers, generally compensated by single salary schedules, were rewarded with pay based on the number of years in the profession and the degrees earned. Hanushek logically considered these variables and found a negative relationship to improved student achievement.²⁰ In a more recent investigation, Plecki studied similar variables and drew the same conclusion as Hanushek. Her research variables included similar teacher characteristics such as years of experience, degrees and credentials earned, but were broadened to include scores on standardized test of verbal ability, and academic fields of study. Plecki concluded these were insufficient indicators of teacher quality.²¹ Hanushek and Plecki both concluded the teachers' years of experience and degrees earned, factors in determining a teacher's pay, were not significant variables in improving student achievement.

Greenwald, Hedges, and Laine completed extensive studies examining the relationship between school expenses to student achievement.²² These studies examined a variety of resources and concluded that school expenses were definitely and significantly related to student achievement. Greenwald, *et al.* concluded that Hanushek had misinterpreted his data because a positive relationship was shown between variables used by Hanushek and student achievement. In a 1997 study conducted by Wright, Horn, and Sanders, 60,000 student scores on achievement tests for grades three through five in

the subject areas of mathematics, reading, language arts, social studies and science were compiled. Wright *et al.* noted the most important factor that affects student learning was the teacher.²³ In addition, the results of the studies showed that a wide variation in effectiveness, when related to student achievement, existed among classroom teachers. Wright *et al.* reported that the “immediate and clear implication” of their findings was that more than any other single factor, education and student achievement could be improved if states worked to improve the effectiveness of teachers. Regardless of heterogeneity in classes, effective teachers appeared to be effective in student achievement with all ability levels. Conversely, if the teachers were ineffective, students achieved inadequate progress academically, regardless of how similar or different the students’ qualifications.²⁴

In her work with Sanders’, Horn’s, and Wright’s research, Haycock indicated that in one year a typical student gained 34 percentile points in achievement.²⁵ A student with a most effective teacher gained 53 percentile points, whereas a student with a least effective teacher gained only 14 percentile points. The increases on achievement scores indicated student gains were impressive, but the cumulative effect was even more significant. For a student who worked with most effective teachers for three years, 83 percentile points were gained. The three year gain for students with least effective teachers was only 29 percentile points. Studies such as the ones conducted by Haycock, Wright, Horn, Sanders, Greenwald, Hedges, and Laine made Hanushek reexamine his earlier findings.

Hanushek amended his conclusions concerning expenditures and their impact on student achievement. He concluded that teachers do impact student learning. He stated that research over the past thirty-five years validated two conclusions concerning teachers: There were important differences among teachers, and the differences were not captured by common measures of teachers, such as certifications, years of experiences, and degrees. Good teachers did impact student learning, and, if a student had several good teachers in a row, the student would overcome the average achievement deficit, the “gap,” between low-income students and other students. The reverse of this conclusion was also true concerning ineffective teachers. Students having ineffective teachers for successive years experienced diminished student learning.²⁶ Unfortunately, all students across the nation could not be assured of having successive high-quality teachers; however, states would put measures into place to help assure that students would have “highly qualified” teachers under the *NCLB Act*.

As a direct result of moves toward fiscal equity and measures for teachers to become more effective, teacher compensation would continue to represent a large portion of educational budgets, comprising over 60% of most school budgets.²⁷ Therefore, a study concerning horizontal equity of teacher compensation in public education is warranted.

Statement of the Problem

Traditional school finance equity studies concentrated on the analysis of school revenues and expenditures. Although these studies contributed critical information to the literature concerning school finance equity, other legitimate resource objects remained

that would provide insight into the relationship between a specific resource object, local wealth, and the equitable dispersement of the specific resource.

Teacher compensation represented a logical area of equity analysis because this expenditure remained the largest portion of an educational budget. In 2003-2004, the average teacher salary nationwide was \$46,597, and the average beginning salary was \$31,704.²⁸ Oklahoma legislature passed a \$3000 across-the board pay raise for teacher in 2001-02,²⁹ but in 2003-04, Oklahoma's average teacher salary and average beginning salary were still below the nation average with \$35,061 and \$29,473, respectively.³⁰

Teachers remained a valuable educational resource that influenced a student's ability to achieve and also to earn a living.³¹ In 2000 Fairfax County Virginia computed the median income by educational level of fulltime workers between the ages of thirty to forty-five. Workers without a high school education earned approximately \$23,000 a year compared to a worker with an associate's degree, \$40,000, a bachelor's degree, \$60,000 and a post graduate degree, \$75,000.³² The same should hold true of all states, including Oklahoma.

The ability to earn a living was partly determined by the education of the wage earner. The better education a person received could have a great impact on his/her life. Teachers were a valuable resource in determining the caliber of education a student received. More available educational resources enhanced a person's educational experience. Teachers, a valuable and expensive educational resource, greatly influence a student's ability to compete not only in the academic arena, but also in the financial adult market.

Study Context

Fiscal equity was examined using instructional salaries and total instructional compensation in the state of Oklahoma. Although Oklahoma teachers ranked low nationally, in teacher pay, 2002-2003 instructional salaries represented approximately \$1.53 billion of the \$3.3 billion received for the education budget, with an additional \$3.36 million spent for instructional employee benefits.³³

All children served by the Oklahoma Department of Education should receive equal access to educational opportunities. When one district secured more resources for education, and instructional salaries were considered an educational resource, students in that specific area could receive better educational opportunities, because more funds and resources could provide better benefits. Giving one child an educational advantage over another child should be unacceptable to the citizens of any school district. Therefore, educational resources should be dispersed equally and equitably in the state of Oklahoma, as in other states.

Giving one group of students a distinct advantage over another by providing more educational resources could have far-reaching implications. The taxpayers of Oklahoma assume their tax dollars provide equal educational resources to students educated in Oklahoma. The legislative leaders of Oklahoma, who are elected by their constituents, are elected to insure all students educated in Oklahoma receive equal access to education resources. The leaders of districts must strive to keep educational resources equitably distributed. Equity of resources could impact administrative decisions. Educational dollars of small rural schools are normally limited. The number of teachers small district employs could impact learning significantly due to increased class size. Teachers in

Oklahoma should also demand equality in compensation. If some teachers receive more compensation than others when they perform the same task, this gives one group of teachers an advantage over another. Because the amount of money earned determines the amount of retirement money a teacher receives, this could vastly influence a teacher's financial situation.

Purpose of the Study

The purpose of this study was to investigate the degree of horizontal equity and wealth neutrality of both instructional salaries and total instructional compensation in the state of Oklahoma. Instructional salaries and compensation represented the largest single expenditure of the educational budget in Oklahoma as well as in other states, and also represented the distribution of a resource. Because teaching resources were critical components of instruction, this was justification for an in-depth investigation.

Significance of the Study

A study in Oklahoma using instructional salaries and total compensation to investigate fiscal equity has not yet been conducted. A study comparing instructional salaries and total instructional compensation for two years, 2000, before a \$3,000 raise was awarded, and 2005, the most recent fiscal year that data is available, will give a realistic interpretation of resource accessibility in the state of Oklahoma and how it might have changed. A study of this kind would allow the citizens of Oklahoma to determine if the state distributed the largest expenditure in its educational budget equitably and whether or not that distribution was dependent upon the property wealth of a district. If inequitable practices emerged in this study, changes in the distribution of instructional salaries and instructional compensation in Oklahoma should be considered that included

modifications to provide equitable resource accessibility to all children educated in this state. The findings of this study might also encourage interest of researchers in other states to investigate the resource accessibility of expenditures used for instructional salaries and total instructional compensation.

Research Questions

The following research questions were addressed in the current study:

1. To what extent were fiscal resources utilized to support instructional salaries during the fiscal year 2000 distributed equitably across Oklahoma school districts?
2. To what extent were fiscal resources utilized to support total instructional compensation during the fiscal year 2000 distributed equitably across Oklahoma school districts?
3. To what extent were fiscal resources utilized to support instructional salaries during the fiscal year 2005 distributed equitably across Oklahoma school districts?
4. To what extent were fiscal resources utilized to support total instructional compensation during the fiscal year 2005 distributed equitably across Oklahoma school districts?
5. To what extent were the fiscal resources utilized to support instructional salaries in Oklahoma school districts during the fiscal year 2000 wealth neutral?
6. To what extent were the fiscal resources utilized to support total instructional compensation in Oklahoma school districts during the fiscal year 2000 wealth neutral?
7. To what extent were the fiscal resources utilized to support instructional salaries in Oklahoma school districts during the fiscal year 2005 wealth neutral?
8. To what extent were the fiscal resources utilized to support total instructional compensation in Oklahoma school districts during the fiscal year 2005 wealth neutral?

9. To what extent were fiscal resources utilized to support instructional salaries in Oklahoma during the fiscal year 2000 related to the following district variables?
 - (a) assessed valuation per-pupil
 - (b) district's proximity to another state
 - (c) socioeconomic status of the students in the school district
 - (d) percentage of Caucasian students.
10. To what extent were fiscal resources utilized to support total instructional compensation in Oklahoma during the fiscal year 2000 related to the following district variables?
 - (a) assessed valuation per-pupil
 - (b) district's proximity to another state
 - (c) socioeconomic status of the students in the school district
 - (d) percentage of Caucasian students.
11. To what extent were fiscal resources utilized to support instructional salaries in Oklahoma during the fiscal year 2005 related to the following district variables?
 - (a) assessed valuation per-pupil
 - (b) district's proximity to another state
 - (c) socioeconomic status of the students in the school district
 - (d) percentage of Caucasian students.
12. To what extent were fiscal resources utilized to support total instructional compensation in Oklahoma during the fiscal year 2005 related to the following district variables?
 - (a) assessed valuation per-pupil
 - (b) district's proximity to another state
 - (c) socioeconomic status of the students in the school district
 - (d) percentage of Caucasian students.

Limitations of the Study

Using instructional salaries and total instructional compensation as a method of investigating equity of resource distribution and accessibility is a limiting factor.

Another investigation using different resources could produce totally different results and conclusions. Also, this study was limited to the state of Oklahoma. Results of this research would only apply to other states using similar characteristics in compensating instructors and similar funding formulas for education. This study was limited to the

information obtained for the fiscal years 2000 and 2005. Using different years for a study could also produce different results and conclusions.

Assumptions

While research supported the relationship between resources and the quality of education, this assumption did not extend to the quality of teachers. There was much research about the quality of teachers, but there is not a systematic body of evidence that increased resources produced a similar increase in teacher quality. There is no substantiated “cause and effect” relationship between instructional salaries or total instructional compensation and educational quality.

Definition of Terms

Fiscal equity: The equitable distribution of educational resources for all students to receive an appropriate education.³⁴

Fiscal neutrality: A fiscal equity term defined by the courts concerning school finance issues. The differences in expenditures per-pupil cannot be related to local school district wealth.³⁵

Horizontal equity: The phrase used to capsule horizontal equity was “the equal treatment of equals.”³⁶

Proximity: The county in which a district was located was the determinant of proximity. All counties that bordered a neighboring state were considered as one group and formed the proximal counties; therefore, the proximal districts were located within these counties. All other counties with their districts formed the nonproximal group.

Instructor: For the purpose of this study, an instructor was defined as a professionally trained instructional leader in the classroom or building and currently instructing in Oklahoma public schools.

Instructional salaries: The amount of money paid to an individual for instructing in the classroom. This was denoted in the Oklahoma Cost Accounting System (OCAS) by the function code 1000 and the object code 110, which designated certified staff.³⁷

Total instructional compensation: This term included the instructor's salary and fringe benefits, such as health and life insurance, retirement, and sick, personal, and emergency leave benefits. The benefits are denoted under the 200 object codes.³⁸

Vertical equity: The "unequal treatment of unequals" was the phrase used to express the vertical equity principal.³⁹

Wealth neutrality: See fiscal neutrality.

Summary

The citizens of the United States until recently have boasted of having the best educational system. *A Nation at Risk* first made the public question the supremacy of the United States' educational system.⁴⁰ Since the publication of this article in 1983, our educational system came under close scrutiny, and education policies reflected initiatives enacted to address the financial inadequacies of the system.

During fiscal year 2003, the Department of Education cash outlay totaled \$57.4 billion which was an 84 percent increase between FY 1990 and FY 2003. After *A Nation at Risk* was released, the percentage of the federal budget earmarked for the Department of Education changed from 38 percent in 1980 to 45 percent in 1990 and finally to 46 percent in 2003.⁴¹ As the amount of the federal budget dedicated for educational expense

changed, so did the emphases within education. At first, programs promoting science and math skills were emphasized. Then, during the Civil Rights Movement, equity of education opportunities became an issue. Through the financial arena, the emphasis for educational spending changed from equity to adequacy and finally to efficiency. This journey changed the financial system of education in the United States in the pursuit of justice for all who seek an education.

Notes

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Chapter 2

Review of the Literature

Many issues continue to influence financial decisions for public education in America. Funding for schools remained a state responsibility, but the federal government played an important role in shaping policy that unavoidably impacted state and local school finance. Striving for equity in education continued as an ever-changing issue as courts attempted to interpret state constitutions and school laws. First, issues were debated at the national level, but when this proved unsuccessful, the states' "right-to-decide" emerged. At both levels, challenges to ensure children's educational rights made a logical progression from equity, to adequacy, and finally, to efficiency. The body of literature from these challenges revealed trends for the equitable distribution of resources, especially those issues that pertained to teacher compensation and teacher quality.

An expensive responsibility, instructional salaries and total instructions compensation consumed the largest portion of states' educational budgets. Although some states and local districts attempted to move away from the outdated single-salary schedule, it remained the dominant method for compensating teachers. Unfortunately, the single-salary schedule did not promote teacher quality, even though research validated the importance of quality teachers in improved student achievement. Employment and retention of competent teachers along with equitable distribution of states' financial resources emerged at the center of financial policy debate throughout the last decade, for all states including Oklahoma.

A review of current literature for this study focused on the methods used by various states in the distribution of resources supporting teacher compensation. First, the literature revealed the various means of compensating teacher in public education, dating back to the early 1900s. Research also validated the importance of a quality teacher in the educational process. Preparing students for a highly technological world of the future while using educational processes of the past continued to be both the challenge and the irony in education. The results of the following research will set the context for this study, using instructional salaries and total instructional compensation to determine an equitable distribution of resources in Oklahoma.

History of Equity

Educational equity came into prominence in the United States during the 1950s and 1960s Civil Rights Movement, but educational inequities existed since the inception of public schools because education was denied to many people. The 1954 United States Supreme Court unanimous decision in *Brown vs. Board of Education*¹ declared segregating students in public schools by race denied black children their constitutional right to equal protection under the law. Federal intervention became necessary many times to ensure equality to all citizens and not a select elitist group.

The federal *Elementary and Secondary Education Act (ESEA)*² was passed in 1965 by President Lyndon Johnson and meant to promote the restructuring of American known as the Great Society. Poverty and its inevitable consequences could possibly be altered through education by addressing needs of children in elementary schools. This act addressed inequalities in race, sex, abilities, and socioeconomic status. The *ESEA* became an important piece of educational legislation undergoing

continued revisions. Federal policies and legislation such as the *ESEA* continued to address the inequities that existed because of the public's demand for equality.

Public Law 94-142, *Education of All Handicapped Children Act*³ passed in 1975, was one of the most important laws addressing the responsibility of public education to meet the needs of individuals with disabilities. This became recognized as the *Individuals with Disabilities Education Act (IDEA)*. It mandated states to develop and implement policies that assured a free and appropriate education (FAPE) to all children with disabilities in order to receive federal funds. This law brought about Individual Educational Plans (IEPs) used nationwide to address the educational needs of children with learning disabilities. Individuality of children was stressed, and children were defined as individuals not by their disabilities.⁴

The *American with Disabilities Act of 1990*⁵ provided equal educational opportunities to physically or mentally handicapped individuals by mandating the accessibility of facilities. This offered yet another example of federal intervention to ensure equity. Violation of compliance with this act or any other federal law jeopardized school districts' ability to receive federal dollars for educational purposes. Many citizens advocated equity, but the attachment of federal dollars to mandates was designed to improve success of the implementation.

Initiation of Financial Litigation

The first lawsuit pertaining to education-finance reform began in 1967 when a parent, John Serrano, met with a principal to discuss the quality of his son's education. Educational opportunities were limited because of insufficient funds in the district where Serrano's son attended school. The principal advised the father, who

wished to improve the educational opportunities for his son, to move to a wealthier school district. John Serrano took the principal's advice; however, he, along with other plaintiffs, sued the state of California in the *Serrano v. Priest*⁶ case. The plaintiffs named the state treasurer, Ivy Baker Priest, in the lawsuit because of his authority to redistribute legislative appropriation.⁷

Equity Decisions at the Federal Level

To obtain equal rights for citizens, three distinct approaches defined educational finance reform for students. The first approach focused on the Equal Protection Clause of the United States Constitution, which guaranteed every citizen equal rights. Shortly after the *Serrano v. Priest* case, another case, *San Antonio Independent School District v. Rodriguez*,⁸ was filed in Texas. Both cases argued that the states' school-finance systems were unconstitutional because they allowed unequal treatment of individuals. Both states, California and Texas, had education finance systems based on local taxation; therefore, every child did not receive the same educational opportunities. Not only did children in these districts not receive the same educational advantages, people who lived in the poorer districts were taxed at a higher rate than people who lived in wealthier school districts. In 1973, the United States Supreme Court ruled in *Rodriguez*⁹ that no violation of the United States Constitution occurred when local funds were used to support public schools. This ruling dictated that another approach must be taken if plaintiffs were to win and this mandated the approach must look within the state constitutions

Equity Decisions Through State Constitutions

After the defeat of the *Rodriquez* verdict, plaintiffs from other parts of the country turned to state constitutions for education financial reform.¹⁰ In 1973, *Robinson v. Cahill*¹¹ plaintiffs won a decision by the New Jersey Supreme Court. This gave new hope to plaintiffs and demonstrated that school finance reform could take place at the state level. Because of unclear legal framework of the case and complicated directions of the court, the New Jersey legislature was reluctant to enforce mandates specified by the legal system. New Jersey's Supreme Court ordered closure of all public schools to bring about compliance. After this, the legislature enacted a state income tax to bring about equity in funding for state schools.¹²

New Jersey's Constitution called for the state to provide a school system defined as "thorough and efficient," and complications arose because of the vague wording. Funding of the school systems was not the only problem the state faced. Local school districts needed to specify curriculum objectives and allocate funds in order to achieve objectives. This created a tremendous amount of paper work, and five years after passage of this legislation, most reformers believed the educational system in New Jersey proved to be neither thorough nor efficient.¹³

Another case relying solely on the equal protection and education clause of the state was the Connecticut case, *Horton v. Meskill*.¹⁴ Before this case, Connecticut used a flat grant program to issue aid to schools with no consideration for disparities between wealthy and poorer districts. In 1977, the Connecticut Supreme Court stated that the state school finance system violated the intention of both the equal protection

clause and the education clause of the Connecticut Constitution. Reliance on local property tax to finance education without any regard for the local community's ability to fund an adequate education violated the constitution. The adjustment of the education finance formula by replacing the flat grant program with a minimum expenditure requirement and a guaranteed tax-base formula proved successful.¹⁵

In several cases, the use of the equal protection clause overturned the educational funding system in different states. *Serrano II v. Priest*¹⁶ in California compared the right to an education with other fundamental rights, such as the right to vote and right of a criminal defendant. In West Virginia, *Pauley v. Kelly*¹⁷ declared that "education was a fundamental right for equal protection purposes." In 1983, the Arkansas Supreme Court case, *Dupree v. Alma*¹⁸ determined the funding system irrational because educational needs of districts were not a consideration in the ruling. In Alabama, *Harper v. Hunt*,¹⁹ a circuit court ruled the entire school system unconstitutional because funding proved both inadequate and inequitable. Disparities in funding violated Alabama's state education clause and the equal protection provisions. This decision remained unchallenged by the state's higher courts. Throughout the United States, legal battles were being decided in state courts to ensure equitable treatment of individual citizens who resided within a state's boundaries.

Decisions Move From Adequacy to Efficiency

The third approach of education finance litigation focused exclusively on state education clauses in state constitutions, with greater emphasis on output rather than input. When changing from the first to the second approach, a shift from equity to

adequacy occurred.²⁰ In the third approach, the shift began with adequacy, but concentrated more on efficiency. Adequacy focused on providing sufficient funds for average districts/schools to teach average children to the state standards with additional funds allowed to educate children with special needs.²¹ The judges and legislators realized when per-pupil funding formed the basis for determining adequacy, funding proved not only inappropriate, but also impractical. In the new wave of litigation, courts mandated all students receive an adequate education, and funding must be fair for all. The United States, composed of diverse groups of people, was presented with special problems when fulfilling educational obligations. To ensure efficiency, educational dollars must be spent prudently, thus enabling all students to be educated to a high standard. This forced school districts to use educational dollars in the most fiscally responsible manner.²²

Diversity of students located in a state constituted the need for different expenditures. More minority and limited English-speaking children lived in inner cities. To educate these children was more expensive, and when state-wide, per-pupil expenditures remained the same, the educational level of these students was not equal. In the past, states defined adequacy on the basis of revenues available. When revenues dictated per-pupil expenditures, disparities in educational funding within states increased rather than decreased.²³ Verstegen found that some school districts, depending on their location, received eight times as much per-pupil funding as others. These differences could be noted in teacher quality, class size, state of the facilities, technology opportunities, and many other factors affecting student outcomes.²⁴ Now states must base adequacy decisions on students' needs in order to attain efficiency.

The third wave of litigation was total education reform as exhibited in Kentucky. In 1989, *Rose v. The Council for Better Education, Inc.*²⁵ based its argument in court on the educational clause of the state constitution. Kentucky ruled the disparities in resources between rich and poor districts were unconstitutional. The court also addressed the unconstitutionality of the entire state's educational system including curriculum, financing, and governance. The finance system was corrected by raising the state's foundation grant, adjusting equalization grants and property assessment so that poorer districts received a larger portion of state aid, and changing the aid formula by calculating it on a per-pupil basis when determining state funding. The court also placed a duty on the General Assembly to create a new, uniform educational system in the Commonwealth of Kentucky that was to be free to all Kentucky children. An important aspect of this sweeping reform was the new educational system was to have sufficient funding to provide each child with an adequate education.²⁶ This legislation focused on equity, adequacy, and efficiency.

Results of Financial Litigation

Financial litigation consumed both time and money. Unfortunately, many plaintiffs filed numerous lawsuits in hopes of increasing financial educational equity, and although changes were implemented, true equity was not attained. Education of its citizens continued to be a state's responsibility and variations among our states reflected the diversity of our nation. Rulings concerning finance equity remained as diverse as the nation's ethnic makeup.

Cases based on the education clause of states' constitutions where the state education financial system was ruled unconstitutional included *Abbott v. Burke*²⁷ in

New Jersey; *Edgewood Independent School District v. Kirby*²⁸ in Texas; *Helena Elementary School District No. 1 v. State*²⁹ in Montana; *McDuffy v. Secretary of Office of Education*³⁰ in Massachusetts; *Tennessee Small School Systems et al. v. McWherter et al.*³¹; and *Roosevelt Elementary School District 66 v. Bishop*³² in Arizona.³³ These cases were successful in initiating educational financial reform, but other state courts ruled education finance as constitutional, which resulted because of the variance in state political and educational contexts. States demonstrated a variety of funding patterns because financing of education was a state's responsibility. Judicial rulings in individual states also varied because of prior judicial precedents in that state. Some state courts demonstrated differences in their willingness to rule on educational finance issues.³⁴ All of these factors complicated the educational funding issue. Initial rulings in several educational finance cases underwent numerous challenges in the courts. In California, there were three separate decisions based on the *Serrano* case.³⁵ In New Jersey, there were ten rulings in the *Abbott* cases.³⁶

By 1996, supreme courts in forty-five states heard cases concerning constitutionality of school finance systems. In twenty states, courts upheld the states' systems of education as constitutionally correct, while finance systems in sixteen states were ruled to be constitutionally deficient. Cases in which the educational finance systems were upheld include: *Lujan v. Colorado State Board of Education*³⁷; Georgia's *McDaniel v. Thomas*³⁸; Idaho's *Thompson v. Engleking*³⁹; Maine's *M. S. A. D. # 1 v. Leo Martin*⁴⁰; Michigan's *Milliken v. Green*⁴¹; *Skeen v. Minnesota*⁴²; *Scott v. Virginia*⁴³; Rhode Island's *City of Pawtucket v. Sundlun*⁴⁴; South Carolina's *Richland v. Campbell*⁴⁵; and *Fair School Finance Council of Okla. v. Oklahoma*.⁴⁶ Even when

the courts ruled in favor of the state, some of these states endeavored to make their funding systems more equitable. Educational finance litigation cases have been filed in forty-five of the fifty states during the past three decades. This litigation in recent years focused on the core constitutional concept of a students' right for an adequate and efficient education.⁴⁷

Murray, Evans, and Schwab conducted an extensive analysis of the influence of education-reform litigation on the distribution of educational resources. They collected data on expenditures from 16,000 school districts for the years 1972, 1977, 1982, and 1992, and examined how reform altered the path of within-state inequities. The intra-state inequities in spending were reduced by 19% to 34%. The controlling factor facilitating such results was when state funding in the poorest districts increased while spending in the richest districts remained unchanged. During the period from 1972-1987, state spending rose from 38.3% to 49.3%, and although state spending continued to rise, it increased at a slower pace until 1992. Local spending increased during the entire period ending at 47% in 1992. As state and local spending increased, federal spending decreased during this same period. The largest inequities in spending were between states rather than within states. With the precedent established by the Supreme Court of the United States in *Rodriguez*, litigation has not addressed this inequity.⁴⁸ Inequity continued to addressed more almost half a century, but correcting this injustice seemed to be beyond the reach of both the courts and the planiffs.

Financial Litigation Influence on Policy Implementation

After years of litigation, school systems were compelled to look at education systems and the quality of education offered to each child. Verstegen reviewed some of the extensive research completed several years after the reform movement and concluded most of the money allocated for educational reform was spent on teacher salaries and training. Dougherty surveyed forty-seven states concerning educational reform and concluded money used for education reform was grouped into similar categories by the states. Teacher initiatives, such as salaries and in-service training, were the first priority for spending in the Dougherty study. The second priority was in school and classroom structure. This included funds to reduce class size and lengthen the school day and year. The third way in which new funding was used most often was for curriculum and programs. Programs not only targeted at-risk students, but also included early childhood programs and advanced-level programs. The fourth spending priority was for student testing initiatives and the last priority involved increasing graduation requirements for all students.⁴⁹

In states where educational finance reform was mandated, substantial differences in money allocated to education were observed. In the years 1982-83 and 1985-86, Texas combined and increased state aid to almost \$1 billion, and local revenue increased to nearly \$500 million. This increased the state and local aid in Texas education system to 19.4%. Arkansas increased state aid for the first three years 1982-83, 1983-84, 1984-85, to 18.7%, 18.3%, and 10.4% respectively. New York increased state aid to \$613 million, reflecting the largest aid increase in the state's history. South Carolina increased state aid by 32.4%, and Tennessee increased

its state aid by 20%.⁵⁰ Additional funds to education from state and local revenues appeared impressive, but one factor not considered was that school enrollment increased during this time span. When funding was analyzed objectively, increases in school funding during this period were modest at best.⁵¹

After the *Robinson* decision in New Jersey, *The Public School Education Act of 1975* was enacted to address three problems that surfaced during litigation. Unequal property wealth that contributed to education funding surfaced as a problem, and the added expenditures needed to address students with special needs presented another problem. New Jersey was a state that had expenditure “caps” which created disparities in per-pupil expenditure. New Jersey addressed problems by increasing the guaranteed tax base (GTB) to 135% of the state average property valuation per unweighted pupil. This change allowed the number of districts eligible for this support to increase from 40% to 75% in a two-year period.⁵²

Other problems in New Jersey were addressed by discarding the practice of weighted pupil allocations for grade levels and impoverished families and replacing these practices with higher guaranteed valuation and categorical aid for compensatory education. The state also stopped equalizing a district’s budget when the budget reached the state support limit: the 65th percentile. Previously minimum aid support had been provided to all districts. This was changed so only the districts not eligible for equalization received this support, and then it was limited to a percentage of the state support ratio. Aid for educating students with special needs was changed from classroom support to per-pupil support with each special needs child being weighted according to the expenditure figure necessary to educate him/her. Expenditure “caps”

were placed on every district based on a percentage of growth over the previous year's budget. The new finance law mandated New Jersey to increase its aid to local school districts, and it moved from providing 28% of the total districts' current spending to 40%.⁵³

After examining changes made in education finance because of the *Robinson v. Cahill* litigation, and after changes were made in the funding of education, equity was not achieved. Even though the state education aid was doubled, the per-pupil expenditure significantly narrowed. During the first three years the educational reform was in place, slight equity gains were made, but because the state support remained at 40% of the total education expenditures, these gains slowly eroded.⁵⁴

Ritter and Lauver believed that lawsuits, such as those brought in New Jersey by the poorer districts, resulted in legal decisions and legislative responses that “patch some of the biggest holes in the fabric of school funding, largely ignore the broader issue of educational equity for all of the state's students and taxpayers.”⁵⁵ As a result of *Abbott IV*,⁵⁶ in 1997 the state legislature added nearly \$250 million in funding to raise spending levels in poorer districts to the same levels as the state's wealthiest suburban districts. The *Abbott V*⁵⁷ – *Abbott VIII*⁵⁸ decision mandated programs such as full-day kindergarten, preschool for three- and four-year old children, a class size of fifteen students, and a whole-school reform including high educational standards and 100% state-funded facility upgrade programs. Unfortunately, the decisions in the *Abbott* litigation only addressed the needs for equity in thirty of the poorer districts out of the total 550 districts located in the state of New Jersey. In December 1997, seventeen poor rural districts located near the districts that were listed in the original

lawsuits filed claims similar to ones listed in the *Abbott* suits. These districts were responsible for educating an unfair number of students who were classified as disadvantaged students and thus more expensive to educate. These districts also could not raise enough money from property taxes to pay for their deteriorating facilities. Judges in this case required the seventeen school districts to demonstrate proper use of monies the districts received under the *Comprehensive Educational Improvement and Financing Act of 1996 (CEIFA)* and to provide evidence a thorough and efficient education could not be provided under the current budget.⁵⁹

A lawsuit was filed in New Jersey by middle-income taxpayers because the state's school finance formula "denies property owners equal protection under the state constitution."⁶⁰ The Superior Court ruled the plaintiffs did not have standing to bring claims for violation of the "thorough and efficient" clause because the inequities fell on the taxpayers, not the district.⁶¹

An extensive analysis was conducted on the impact of two of the most recent legislative actions in New Jersey: the *Quality Education Act of 1990 (QEA)* and the *CEIFA*. In 1997-98, through state funding, the poorer districts of New Jersey were closer aligned to the high-wealth districts, \$8,378 to \$8,772 respectively. Two new groups of litigants had a strong case against the state. The middle-wealth communities had access to 50% less regular spending than the high-wealth districts and 40% less than the schools in the poorer districts. Equity funding for school finance in the state of New Jersey still was not achieved.⁶²

West Virginia represented another state experiencing extensive educational finance litigation. West Virginia's funding system was declared unconstitutional,⁶³

but the funding system continued to be plagued with problems. Courts first dealt with the state's education clause, and then *Pauley* became known for rights promised in the state's constitution concerning the state's obligation to fund a "thorough and efficient" education. Funding inequities continued to exist. The state proposed the Master Plan, but because taxation was based on property wealth, some schools maintained a minimum of educational standards while other districts provided a better education to their students. Numerous bills were passed to support education, but the funding of these bills still presented problems for West Virginia, both at state and local levels. Large corporations and individual property owners identified "loopholes" within the tax laws enabling them to avoid paying a fair amount of taxes. West Virginia appeared to be unable to devise a formula to provide an equitable and adequate system of education finance.⁶⁴

In 1990, all of the new dollars being used by the states were reported as being used to fund "educational reform" initiatives.⁶⁵ The unfortunate problem was that over 70% of the reform funds were distributed from states to local districts through unequalized, categorical aid, which did nothing to improve the equity of educating students. When special funding for populations such as minorities was provided by the federal government at the state and local level, a distinct disadvantage arose when these contributions decreased by double digits percentages.⁶⁶

Even with extensive litigation involving school finance, issues of financial equity for school spending remained unsolved. Thompson and Crampton investigated the significance of litigation pertaining to school finance. In review of the literature evaluating the importance of litigation, the authors cited both Rebell's

and Ward's argument that it was not litigation that mandated the change, but the social pressure as the pendulum swings to balance liberty and equity. In Colwell's work that Thompson and Crampton assessed, very little litigation progress had occurred over the last thirty years because courts moved back and forth in time with social consciousness. Kirp proclaimed that *A Nation at Risk* turned the tide in litigation and attention moved from the issue of equity to that of adequacy.⁶⁷

Scholars appear divided on issues of pursuing a legislative or judicial remedy to initiate educational finance reform. When single-state's studies were reviewed, there were only two conclusions: 1) clear patterns of improved equity did not exist; and 2) most of the changes responsible for some form of equity were due to changes in the distribution formula. Voluntary legislative decisions and court-mandated reforms were equal in bringing about such reform. The review of multi-states' analyses offered similar patterns to the single-states studied. Information gained from the multi-state analysis revealed high levels of school funding variability remained in states that have undergone reform and also those states that have not. Even though litigation was costly, time-consuming, and adversarial, litigation brought educational finance reform to the center stage. No data pointed to strong and positive effects of school finance litigation. Many children who were meant to be helped by the process of litigation had graduated by the time reform was mandated. No doubt, the decades of litigation had changed the premise of school financing.⁶⁸

The direction of school finance reform appears to be shifting with the implementation of *NCLB*. One reason was because school finance equity had not been accomplished. If the goal of this educational reform were to educate students to

high performance standards, the goal of the finance system changes from equity to adequacy. Finance systems must provide funds necessary for schools to educate all students to this high standard, which includes funds necessary to provide students who have special needs with opportunities to reach the same goals. Some believed this goal could be accomplished with funds that are now allotted for education, including the modest increases states now receive. *NCLB* became a priority, and for this to be successful, educational finance dollars must be spent efficiently. Every educational dollar must be evaluated carefully to produce a cost-effective outcome that is essential. Individual schools were observed and evaluated on their effectiveness. Money for educational funding was allocated to the school district, and each school spent money in ways that brings about the best results specific to the individual district's needs. One serious consideration for spending money efficiently must be money spent for teacher compensation because this expenditure represented the largest component of the educational budget in districts throughout the United States.

Early Implementation of Teacher Compensation

Controversy surrounded the subject of teacher compensation in the last century. Teaching first began as a service profession in the United States in the 1800s, with teachers being compensated by small stipends plus a place to live while the community exercised control of their social and moral conduct. Later efforts to compensate teachers evolved to teachers' needs for better salaries and women competing with men in the profession. The result in the 1900s was a single-salary schedule, one still widely used today as a fair and predictable method of

compensation. Teachers' salaries never reached a competitive level with other professionals who have comparable educational credentials, because teaching was still considered a service profession by the community. However, in response to continual efforts to pay teachers adequately, the community's financial responsibility continued to increase.

One of the largest components of educational expenditures remains the expense for instruction; 50% of every dollar spent for education was used for teacher compensation.⁶⁹ The first financial concern for school districts was adequate funds so that every child received a high standard of education, and the second concern involved fiscal redesign.⁷⁰ The public demanded more for the dollars being spent for education.

Fifty-nine percent of respondents in the 35th Annual Phi Delta Kappan/Gallup Poll conducted in 2003 believed that teacher salaries in their community were too low. In the same poll conducted in 1990, only 50% of the respondents believed that salaries of teachers were too low. Before this time, during the 1980s, fewer respondents thought teachers' salaries were too low: 33% in 1985; 37% 1984; 35% in 1983; 29% in 1981; and 33% in 1969.⁷¹ Teacher salaries had not kept pace with other professional salaries.

As American education evolved, more accountability from educators would be required. Schools had not kept pace with drastically changing economic factors, because the number of jobs that required limited knowledge or a basic education declined. Employers needed students with higher-level skills and knowledge; and the public wanted classroom teachers who were knowledgeable in the areas necessary to

educate these young people. The higher level of education required more and more funding.

The single-salary schedule that evolved had been the basis of teacher compensation for eighty years. At first, this method was praised because it made teaching less discriminatory as a profession. Later criticism arose because this method of compensation was based on years of service and educational degrees. Although much research was conducted, no relationship was found between effectiveness of a teacher and the number of years the teacher had been teaching or the number of degrees the teacher had earned;⁷² however, research was ongoing on this highly debatable issue.

Many attempts were made to move away from the single-salary schedule. In 1983, *A Nation at Risk* recommended that teacher salaries be professionally competitive, market-sensitive, and performance-based.⁷³ School districts across the nation attempted to implement performance-based compensation programs that would be more competitive. This was the beginning of efforts to put merit pay, career ladders, and other types of incentive pay into operation. All these efforts were short-lived because they were not well planned or well-funded, and many pay options appeared to support favoritism. Alternative pay options also created an unfavorable climate among teachers. Rather than working cooperatively, teachers became competitive with colleagues for a limited amount of funding.⁷⁴

Teacher compensation remains an important issue because it consumed so much of the financial budget of a district, but teacher job satisfaction proved a weak relationship to salary and benefits.⁷⁵ When teacher compensation was examined,

including salary, number of benefits, and supplemental income received both within and outside of the school, salary has shown little relation to satisfaction in teaching as a career. This was true for most teachers, elementary and also secondary.⁷⁶

Changing from Single-Salary Schedule

As modifications to teacher compensation were tried and discarded, schools found that certain criteria must be met if the move away from the single-salary schedule were to be successful. The first principle affirmed all key parties must be involved in the process of changing teacher compensation. This collaboration emerged as the most important principle for successful change. Teachers, administrators, board members, and the public must be involved in development, design, and implementation of proposed changes in teacher compensation. This collaborative team should also agree on the results most valued, and base the evaluation system upon those commonly valued elements. The system should consider and assess teacher knowledge and skill development.⁷⁷ After the agreed-upon framework had been accomplished, sufficient funding should become the primary factor for school financial design or restructure. Part of that funding needs be earmarked for ongoing professional development ensuring every teacher the opportunity to develop necessary skills for receiving higher pay. Sufficient funding must be allocated in order to avoid quotas.⁷⁸ Changing teacher compensation required extensive planning and implementation. If teachers were going to feel comfortable in changing the way in which they were compensated, they wanted assurance that they could be successful with the plan.

General work conditions should be assessed before a district attempted to address change in teacher compensation. Teachers dissatisfied with inadequate facilities, materials, and safety were unlikely to support any change in compensation. A good working relationship between the school board and administrators needs to exist, and an area of trust should exist between teachers and administrators. If there were a strong teachers' or workers' union in the district, a good working relationship with this group would also be imperative.⁷⁹ Everyone must realize a plan might not be perfect the first time, and changes in the program need be made until the system functions well. Persistence would be required of everyone involved with the change.⁸⁰ Change is difficult under any circumstance and changing teacher compensation represented a monumental adjustment. Restructuring teacher compensation promoted research related to educational funding and the effect funding had on facilitating the purpose of education.

The impact of educational funds on student achievement also became debatable. Some research supported the theory that student achievement had improved little, if at all, even though school spending increased during the last 20 years. Other researchers supported that when studies were based correctly on measured inputs and outputs, allocating more money toward some of the inputs led to improved achievement.⁸¹

The single-salary schedule presented many problems by rewarding all certified staff the same. When across the board pay raises were given on a percentage basis, the veteran teachers received more money and this discouraged novice teachers from staying with the profession.

Effects of Backloading

Average teacher salaries experienced drastic changes nationally between the decade of the 1970s, when average teacher salaries fell by 10%, and the 1980s, when average teacher salaries rose by 20%. The increase in the 1980s was spurred by the decline in the average academic achievement of those choosing teaching as a profession.⁸² Attracting more qualified people to the teaching profession became a major priority. Efforts to improve working conditions, along with better compensation, helped to accomplish this goal. To attract more qualified applicants to the teaching profession, beginning teacher salaries had to become more competitive. Unfortunately, when the increase in salaries was studied, “backloading,” which is the practice of awarding increases that favor veteran teachers more than novice teachers, occurred and did little to help in recruitment and retention of new teachers. Lankford and Wyckoff validated that backloading was a national practice that occurred in both rising and declining enrollment periods and also in both limited and generous fiscal environments. In one hundred of American Federation of Teacher Union’s largest districts, two-thirds of the districts maintained this practice. In the districts that practiced backloading, the average percentage of increase in maximum salaries was approximately 12% higher than the salary for beginning teachers.⁸³ Determining what factors would encourage young teachers to remain in the profession became a subject of interest to researchers because many young teachers leave the teaching professions within the first five years of employment.

Stinebrickner’s study indicated that if the goal were to attract academically talented teachers and keep them in the profession, an across-the-board increase in

salaries was not be best way to use financial resources. This study divided the SAT scores of people in the teaching profession into three levels: top third SAT scores, middle third SAT scores, and bottom third SAT scores. When a 20% across-the-board raise was given for all, teachers with the top one-third SAT scores chose teaching 0.88 as often as individuals with SAT scores in the bottom two-thirds of the sample. A 20% wage increase was not given across the board, but a person's wage increase depended on his/her academic ability, individuals with SAT scores in the top third of the sample chose teaching 1.10 as frequently as individuals with SAT scores in the bottom two-thirds of the sample. If the goal were to attract and retain academically talented people in the teaching profession, then backloading would not be an effective method of increasing compensation.⁸⁴ Attracting and retaining competent teachers would continue to be a concern for citizens who supported education with their tax dollars. The new accountability demands during the next decade placed more responsibility on the teaching profession and presented new challenges.

Educational reform marked the decade of the 1990s as states across the nation attempted to address declining student test scores. American students were not as academically prepared, and this was unacceptable. The ultimate goal was improved student achievement, so educational standards were established and resources designated to help schools meet this goal. Districts across the nation examined schools where the students were not achieving desired standards and set out to adopt measures to ensure success. For taxpayers to receive the most for their tax dollars, one of the strategies used in the accountability formula was the way in which teachers

were compensated. In the past many attempts were made to change from the single-salary schedule, but none survived because of poor funding and lack of teacher support.

Individual Performance Pay

One compensation method receiving attention was performance pay. According to Dr. Marc J. Wallace, Jr., cofounder for the Center for Workforce Effectiveness, “There are hundreds of districts working on performance pay plans; thirty out of fifty states have passed legislation requiring some type of performance pay for teachers.”⁸⁵ Performance pay, a more complicated pay system, proved both time-consuming and expensive. Douglas Harris, an economist with the Progressive Policy Institute, believed performance pay would attract more people to the teaching profession and make those already in the profession work harder.⁸⁶ While many of the hardworking teachers supported changes in compensation, moving away from the familiar single-salary pay scale represented a controversial matter. Most teachers were not aware the new policies implemented by the federal government would make changes in teacher pay more attractive.

The state remained responsible for the education of its citizens. Although the federal government did not wish to assume this role, it enacted legislation encouraging the state to reform teacher compensation. The Teacher Quality Enhancement Grants program, which was added to the High Education Act in 1998, authorized participating states to provide financial awards to teachers and principals when their students made significant academic improvement. These financial awards would be part of the “performance-based compensation system.”⁸⁷ Teachers began to

take a more active role in decisions to change compensation. Many districts rewarded individual teachers for developing and using knowledge and skills necessary to increase student achievement. Universities began pre-service training for developing required knowledge and skills, but ongoing professional development, training, and skill acquisition require continual training if a teacher were to be effective in the classroom. The use of knowledge and skills-based pay helped in moving districts away from the rigid single salary scale while encouraging the teacher to develop skills proven to be successful in increasing student achievement. The professional development offered proved immeasurable in helping teachers develop needed skills for success in the classroom. Becoming comfortable with new skills reduced the apprehension of teachers not being able to successfully validate the new skills on which the new pay systems were based.

Four different types of professional development training proved most beneficial. Incorporating several different knowledge and skills training was a successful option. The first area of knowledge and skill improvement was associated with content, curriculum, and instruction. This option allowed teachers to reach many different types of students in achieving higher standards. The more a teacher learned about different types of instruction, the more approaches he/she could successfully implement. The second area of training was in the field not directly associated with specific content, but still important in contributing to increased student achievement. Guidance counseling, curriculum development, professional development, and student advisement training provided indirect instructional support. The third set of skills enhanced a teacher's ability to become involved in site-based

management. Training enabled teachers to learn techniques needed to develop site budgets, to implement strategic planning, and to conduct meetings and gain consensus from a diverse faculty. The last set of skills involved interaction with professional community activities, such as community culture activities and professional organizations leadership roles. This involvement varied from local, state, or national levels.⁸⁸ Enhancing a teacher's skills with community/professional involvement was one more option to better prepare teachers to meet the federal mandates.

With *No Child Left Behind (NCLB)*, school districts across the nation became even more concerned about increased student achievement. While knowledge and skill-based pay would not provide a total answer to increased student achievement, the incentive could positively impact instructional quality, and in turn, student achievement. This type of pay provided incentives for teachers to obtain desired knowledge and skills that increased instructional capacity. As teachers became more proficient using the desired skills, they acquired the capability to deliver higher-quality instruction to impact student achievement positively. With knowledge and skills-based pay in place, highly qualified teachers and future applicants would be enticed to remain or join the profession. On the other hand, teachers with minimal skills could become discouraged and leave the profession. Administrators could use the information in teacher evaluation, further professional development, and recruitment and selection because the knowledge and skills-based pay was based on competency.⁸⁹

To motivate teachers to acquire the necessary skills for a knowledge and skills-based pay program, other incentives, rather than just a pay increase, should be included. Using a modified version of the Expectancy Theory, teachers would believe if they exerted the effort, they would acquire the necessary skills. Teachers understood the expectations to acquire the skills, and opportunities, along with a support system, must exist for them to receive the necessary training. If these conditions were present, teachers would be more motivated to acquire the skills to receive increased pay, especially if they believed the system of evaluation of the new skills was fair and did not show favoritism. Having teacher input in the design and evaluation of the knowledge and skills-based pay system was imperative for the system's success.⁹⁰

Teachers showed interest in performance-based pay because of dissatisfaction with the traditional salary schedule. The traditional salary schedule provided no incentive for teachers to demonstrate subject matter competence, to improve teaching, or to increase student academic performance.⁹¹ The traditional pay schedule also promoted mediocrity. A teacher was paid the same whether he/she did a poor job or an excellent job because pay was based on years of experience and degrees.

One problem with individual performance pay was the undermining importance of team work. Another option for performance-based compensation involved group incentives. This type of performance pay rewarded an entire group for achieving a predetermined set of educational goals agreed upon by the organizational system. These goals invariably involved measures to improve student achievement. Offering group incentives as a part of the compensation package

encouraged members of the group to work together toward a common goal.

Encouraging team building to ensure the success of every student proved to be a successful alternative.

Group Performance Pay

School-based performance awards (SBPA), one type of group incentive, encouraged collaboration and focused on results. If a student were successful, many teachers contributed to this success. As SBPA were granted, high-quality learning would be encouraged throughout the entire school, not just in an individual classroom. Teachers worked together helping each other become better teachers. Ideas were shared, concerns were discussed, and problems were solved collectively.⁹² Many schools have experimented with SBPA, but certain criteria must be present for this type of compensation to be considered successful.

When designing group performance awards, such as SBPA, Odden, Kellor, Heneman, and Milanowski agreed upon key design elements: (1) defining and measuring school performance; (2) calculating change or improvement; (3) making the change calculation fair; (4) determining the amount of change required to qualify for an award; (5) setting levels and types of awards; (6) funding the program; (7) providing conditions and support for the program; and (8) planning for the evaluation of the program.⁹³ Reviewing the process and making the necessary changes remained optimum to ensure the compensation package continued to support the system's educational goals.

Several states included a group-or skill-based performance award as part of their compensation package. All of these districts received assistance from the

Consortium for Policy Research in Education (CPRE), associated with five research institutions, University of Pennsylvania, Harvard University, Stanford University, the University of Michigan, and the University of Wisconsin-Madison.⁹⁴ Individual school systems across the nation experimented with different types of teacher compensation, but the most research, analysis, and evaluations were based on schools associated with CPRE.

School districts have become increasingly interested in changing the way teachers were compensated because of the emphasis on accountability with *NCLB* and the mandate specifying “highly qualified” teachers for every classroom. Many options to compensate teachers remained, but determining the qualities that made a successful teacher became the primary concern as districts attempted to improve student achievement. Coupling innovative teacher compensation packages with attracting and retaining qualified classroom teachers could determine the success not only of a school district, but more importantly, the students who are products of that system.

Teacher Quality

Emphasis on student achievement and accountability forced schools to concentrate on proven educational practices. The importance of an effective teacher in the classroom continued a matter for debate. Nearly everyone educated in public schools in America could equate some of his/her success to an outstanding teacher. Another student could relate negative stories concerning an ineffective and incompetent teacher and the damaging impact on his/her learning.

In 1966, the Coleman Report, *Equality of Educational Opportunities*, suggested that “schools bring little influence to bear upon a child’s achievement that is independent of his background and general social context.”⁹⁵ In this report, poverty, single-parent families, and social interaction with peers was deemed more influential than the type of education provided by the schools. Hanushek⁹⁶ also supported the idea that school did not matter; but he, like Coleman, was not looking at the importance of the quality of the teacher in the classroom. Hanushek studied teachers, concentrating on the number of years of experience and degrees earned, which did not positively correlate to a teacher’s impact on student achievement.

The Report of the National Commission on Teaching and America’s Future⁹⁷ helped to solidify the importance of the teacher in the classroom. The Commission stated three simple premises: (1) What teachers know and can do is the most important influence on what students learn; (2) Recruiting, preparing, and retaining good teachers was the central strategy for improving schools; and (3) School reform cannot succeed without creating conditions in which teachers can teach and teach well. While the American educational system spent both time and money to initiate policies promising to increase student achievement, this study was the first time knowledgeable, competent teachers were actually researched. John F. Jennings, the Director of the Center of Education Policy, stated it best: “We have exhausted ourselves talking about standards and accountability and choice. Now, we’ve come to realize a lot depends on who’s standing at the front of the classroom.”⁹⁸ Finally the educational community realized the importance of teachers in a child’s ability to

learn. With this knowledge, teacher training focused on effective teaching and learning strategies.

President George W. Bush in 2002 endorsed the *No Child Left Behind (NCLB) Act*,⁹⁹ a re-authorization of the *Elementary and Secondary Educational Act* of 1965, that demanded all students be taught by a “highly qualified” teacher. While this idea seemed simple, it proved a difficult goal to reach. According to the Department of Education,¹⁰⁰ only 41% of eighth-grade math teachers majored in mathematics in college, thirty percentage points lower than the international average. In English, 20% of all students in grades seven through twelve were taught by teachers who did not have at least a minor in English or related field of study. The gaps widened in the physical science and history classrooms. One-half of all students in public education were being taught by someone who had never studied the subject in a concentrated way. More than four million students studying physics, chemistry, and history were taught by teachers who lacked preparation for teaching their subjects. States, submitting a report to the Department of Education in 2003,¹⁰¹ reported in some states 50% of the teaching force met the “highly qualified” standard, while other states reported less than 50% of the teaching force met this standard.

Ways to define teacher quality had surfaced, but when teacher effectiveness was defined through an historical perspective, varied attributes emerged. In the early 1900s, teacher quality was defined by high moral character. In the decades following World War II, characteristics such as curiosity, enthusiasm, and compassion were used to define teacher quality. After the Soviet Union launched Sputnik, a definition focused more on teachers’ skills rather than morality or characteristics, and was

defined by how competently teachers communicated the prescribed curricula. With “process-product” research, teachers evaluated what process brought about gains in student achievement. This definition of quality included questioning techniques, incorporating technology, pacing lessons, acknowledging different learning styles, and this represented the first time that student achievement was linked to teacher quality.¹⁰²

The current definition of teacher quality changed with a need to acknowledge diversity in the American population and a need for more rigorous and meaningful instruction. This definition of teacher quality was standards-based and defined knowledge and skills that successful teachers needed to demonstrate. Three organizations were active in the establishment of the standards that defined teacher quality in the present context: the Interstate New Teacher Assessment and Support Consortium (INTASC), the National Council for Accreditation of Teacher Education (NCATE), and the National Board of Professional Teaching Standards (NBPTS).¹⁰³

An extensive study concerning teacher quality and student achievement was undertaken by Darling-Hammond¹⁰⁴ using data from a 50-state policy survey conducted by the National Commission of Teaching and America’s Future. Case studies of selected states, conducted under auspices of the Center for the Study of Teaching and Policy, the 1993-94 Schools and Staffing Surveys (SASS), and the National Assessment of Educational Progress (NAEP) examined ways where teacher qualifications and related data correlated to student achievement. Darling-Hammond’s results showed that United States students performed the least well in subject areas where the United States teachers were least prepared. She also noted

that states where students led the nation in student achievement consistently in reading and mathematics were from states with the most highly qualified teachers and long-term investment in quality of teaching. These states were Minnesota, North Dakota, and Iowa. Wisconsin, Maine, and Montana emerged in the upper tier of states committed to teacher quality, and reported increased student achievement; these states rarely hired unqualified teachers.

Another aspect of the Darling-Hammond study¹⁰⁵ investigated student characteristics such as poverty, English as a second language (ESL), and minority status. These student characteristics showed a significant negative correlation with student outcomes. These student characteristics were also significantly and negatively correlated with qualifications of teachers. The more socially disadvantaged the student, the less likely he/she would be taught by a certified teacher. Generally, student characteristics did not significantly correlate with state per-pupil spending or with teachers' salary schedules. The exception was that salary schedules were higher in states with larger percentages of minority and ESL students because of the monies received from federal programs.¹⁰⁶

Darling-Hammond's study validated the importance of a qualified teacher. Teacher quality characteristics such as certification status and degree in the field taught showed a significant and positive correlation with student achievement. Highly qualified teachers often choose to teach where socially disadvantaged students do not compose the majority of the student population was also validated by this study. Student demographic characteristics were strongly related to student outcomes at the state levels, but student characteristics were less influential in predicting

achievement levels than variables assessing quality of the teaching force. Teacher quality variables related more strongly to student achievement than class size at the state level; for example, in California when class sizes were reduced by hiring non-certified teachers; student achievement declined. When assessing teacher quality variables, full certification and a major in the field of study proved a more powerful predictor of student achievement than teachers' educational levels. For improved student achievement, the preparation and qualification of the teachers hired and retained in the profession could prove a most significant factor.¹⁰⁷

The recent study by York¹⁰⁸ in Oklahoma concerning common characteristics of successful teachers indicated the interest of educational researchers in defining commonalities of teachers who impact student learning. York indicated that successful teachers used innovative teaching practices proven to impact student learning, made decisions that were data driven, and focused on high expectation for all students.¹⁰⁹ Research such as this impact student achievement, and as education becomes more research-driven, better teachers and improved student achievement will be the outcome.

With *NCLB* mandates, every student should receive a quality education. In the past when education was offered to all, but only evaluated on the basis of a targeted population, it was not as challenging as today. The federal mandates forced the teaching profession to be more accountable, more competent, and more concentrated on teaching every student. School districts across the United States must strive for equity for all students and for highly-qualified teachers choosing

education as a profession. This will require the use of educational money in the most efficient means to bring about the desired results of increased student learning.

Summary

The literature review began with a survey of the educational equity issues and the litigation that occurred in the pursuit for equity of all public school children in the United States. The review included information concerning teacher compensation that represented the largest portion of educational budget and would become the focus of this study. *NCLB* required that all students be taught by “highly qualified teachers, and research was presented validating the importance of teachers in improving student achievement. Teachers, who comprise part of the instructional staff remained the most important, influential, and expensive resource in a student’s educational success.

Every student educated in the United States deserves a good education. Our Constitution dictates that education is the responsibility of the state. Oklahoma students deserve the best education our state is capable of providing. The importance of the teacher in a child’s education proves monumental in the child’s ability to learn. The largest portion of the educational budget in most states, including Oklahoma, is spent on teacher salaries and teacher compensation. Mandates in *NCLB*, specify every child must be taught by a “highly qualified” teacher. If every child in Oklahoma is to receive equal access to educational resources, a study to determine if resources are distributed equitably is warranted. Because teacher salaries and total teacher compensation represent the greatest expenditure of resources, a study of these resources could indicate whether every child had equal access to educational

resources in Oklahoma. Chapter 3 will explore the possibilities of using teacher salaries and total teacher compensation to investigate the equitable distribution of educational resources in the state of Oklahoma. Every citizen in Oklahoma deserves to know if educational resources are distributed equitably and that each child being educated in Oklahoma has equal access to these resources.

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Chapter 3

Research Design and Methodology

Instructional salaries and total instructional compensation represented the largest portion of the educational budget in Oklahoma in recent years, and an investigation into the accessibility of this resource to every student would provide a logical basis for an equity study. While traditional equity studies concentrated on the analysis of school revenues and expenditures, investigating equity through the accessibility of certain resources provided another avenue.

A quantitative study was chosen for this research based on both instructional salaries and total instructional compensation to measure the accessibility of resources across the state of Oklahoma. This study addresses the following research questions:

1. To what extent were fiscal resources utilized to support instructional salaries during the fiscal year 2000 distributed equitably across Oklahoma school districts?
2. To what extent were fiscal resources utilized to support total instructional compensation during the fiscal year 2000 distributed equitably across Oklahoma school districts?
3. To what extent were fiscal resources utilized to support instructional salaries during the fiscal year 2005 distributed equitably across Oklahoma school districts?
4. To what extent were fiscal resources utilized to support total instructional compensation during the fiscal year 2005 distributed equitably across Oklahoma school districts?
5. To what extent were the fiscal resources utilized to support instructional salaries in Oklahoma school districts during the fiscal year 2000 wealth neutral?
6. To what extent were the fiscal resources utilized to support total instructional compensation in Oklahoma school districts during the fiscal year 2000 wealth neutral?

7. To what extent were the fiscal resources utilized to support instructional salaries in Oklahoma school districts during the fiscal year 2005 wealth neutral?
8. To what extent were the fiscal resources utilized to support total instructional compensation in Oklahoma school districts during the fiscal year 2005 wealth neutral?
9. To what extent were fiscal resources utilized to support instructional salaries in Oklahoma during the fiscal year 2000 related to the following district variables?
 - (a) assessed valuation per-pupil
 - (b) district's proximity to another state
 - (c) socioeconomic status of the students in the school district
 - (d) percentage of Caucasian students.
10. To what extent were fiscal resources utilized to support total instructional compensation in Oklahoma during the fiscal year 2000 related to the following district variables?
 - (a) assessed valuation per-pupil
 - (b) district's proximity to another state
 - (c) socioeconomic status of the students in the school district
 - (d) percentage of Caucasian students.
11. To what extent were fiscal resources utilized to support instructional salaries in Oklahoma during the fiscal year 2005 related to the following district variables?
 - (a) assessed valuation per-pupil
 - (b) district's proximity to another state
 - (c) socioeconomic status of the students in the school district
 - (d) percentage of Caucasian students.
12. To what extent were fiscal resources utilized to support total instructional compensation in Oklahoma during the fiscal year 2005 related to the following district variables?
 - (a) assessed valuation per-pupil
 - (b) district's proximity to another state
 - (c) socioeconomic status of the students in the school district
 - (d) percentage of Caucasian students.

An equity study using Oklahoma instructional salaries and total instructional compensation to investigate fiscal equity has not been conducted. This study would allow the citizens of Oklahoma to determine if the state distributed the largest

expenditure in its educational budget equitability and whether or not that distribution was dependent upon the property wealth of a district.

Teacher salaries remained a priority with Oklahoma Governor Brad Henry as he signed House Bill 1020 on June 6, 2005,¹ which contained an emergency clause making this bill into a law immediately upon its signing. This law appropriated \$2.15 billion to K-12 education with funding included to increase teacher salaries.

Governor Henry planned to increase teacher salaries in Oklahoma over a four-year period until Oklahoma teacher salaries met or exceeded the regional average.

This quantitative investigation examined both Oklahoma instructional salaries and total instructional compensation from the fiscal school years 2000 and 2005. Resource accessibility included descriptive statistics such as mean, range, coefficient of variation, and standard deviation to provide a realistic evaluation of the resource distribution.

Wealth neutrality is an equity construct holding that education should not be a function of local wealth if equity were to exist within a state. For each fiscal year, 2000 and 2005 correlation and regression analysis were used to ascertain wealth neutrality. The econometric measures, the Gini Coefficient and McLoone Index, were also used to determine whether the distribution of resources, teacher salaries and total teacher compensation, were dependent upon the property wealth of the district.

The same multiple regression analyses used to determine wealth neutrality also identified the relationship of such factors as enrollment, location (proximity), socioeconomic status, and the percentage of Caucasian students in the district to teacher salaries and to total teacher compensation. These required two separate

equations: one equation examined instructional salaries as the dependent variable; the second equation replaced instructional salaries with total instructional compensation as the dependent variable.² The regression analyses were supplemented with correlation coefficient calculations.

Context

Published in 1983, *A Nation at Risk* accentuated the importance of teacher quality in United States schools. The report indicated those typical students who chose teaching as a profession may not have been academically competitive students; consequently, teacher education institutions concentrated more on educational methods courses rather than needed subject specific knowledge. Teacher shortages existed in critical areas such as science and mathematics, and many teachers gained employment by teaching subjects for which they were unqualified. If the United States intended to remain competitive as a nation, the education system, especially the teaching force, required significant attention.³

One trend influencing the quality of people who entered the profession resulted from the change of women's roles. For many years, teaching provided one of the limited options open to women who wanted a career; however, as women's roles changed, their career options broadened. Another factor that influenced the quality of people in the teaching force was an increase in enrollment in elementary schools. The 1970s experienced a decline in school enrollment, but that decline ended in the 1980s and with the increasing enrollment, more teachers were needed.⁴

One way to attract qualified young people to the field of education was by increasing salaries. The 1983 National Commission of Excellence in Education

Report first proposed an increase in teacher salaries, and in 1986 the Carnegie Forum on Education and Economy made the same recommendation,⁵ however, the issue of increasing teacher salaries remained highly debatable. Although teachers received less pay than other professionals, some argued because of their shortened work year, teacher compensation remained equivalent to other professions. Teacher salaries changed significantly over time, but in 1995, the relative teacher salary remained comparable to the salary 25 years earlier. In the 1980s, increases in teaching salaries reflected a move to attract more qualified individuals to the profession, but in the late 1990s, salaries began to decline. In 1999, the nationwide average teacher salary was \$40,574. Considering the education level and the experience of the teaching force, this figure was relatively low.⁶

As the nation began to address the critical issues highlighted in *A Nation at Risk*, so did Oklahoma. In 1985, the Oklahoma School Testing Act passed by the Legislature made assessing students and schools possible. In 1990, the Oklahoma School of Science and Mathematics opened for students who excelled in science and math, making Oklahoma graduates more competitive globally. House Bill 1017⁷ passage represented a significant change in Oklahoma education. This bill addressed specific issues critical to Oklahoma for educational reform. However, some of the issues presented in HB1017, such as passage of a graduation test for seniors before they received diplomas and inequities that existed between local educational cost and financial resources remained unaddressed. Unfortunately, to correct the fiscal inequities required changes in the Oklahoma Constitution, which was rejected by the

people of Oklahoma. This bill's passage produced monumental changes directly associated with educational reform.⁸

HB 1017 mandates offered incentives to retain qualified teachers. A minimum salary schedule addressed teacher salaries as a means of insuring that good teachers remained in the teaching profession. The state minimum salary for teachers increased by \$1,940 in 1990-91; and increments, over a four year period, produced a total increase in teacher salaries of \$9,000. Another stipulation in HB1017, required by the school year 1993-94 for all grades except seven through nine, was that class size be lowered to twenty pupils.⁹

Although Oklahoma attempted to increase teachers salaries in an effort to maintain a knowledgeable teaching force and to compete with salaries paid by bordering states, this effort proved unsuccessful. HB 1017 passed in 1990 when Oklahoma ranked 47th in estimated average salaries of school teachers, but this proved to be a futile effort to try to raise Oklahoma's national standing. Oklahoma increased its average teacher salary by 17%, by the 1993-94 school year, but Oklahoma still ranked 48th in the nation in average teacher salaries. Salaries nationwide increased at a higher rate than Oklahoma salaries.¹⁰

In 1998-99, Oklahoma still ranked forty-eighth nationally with an average teacher salary of \$31,107.¹¹ By 1999-2000, Oklahoma had dropped to fiftieth in teacher salaries. In 2000-2001, Oklahoma reported the highest average salary increase in the nation, moving Oklahoma from the fiftieth back to the forty-eighth position nationally, even after the 10.2% increase in salary.¹² Unfortunately, in 2001-02 and in 2002-03, Oklahoma again ranked fiftieth in the nation with the average

teacher salary of \$32,870 and \$33,277 respectively.¹³ The state continued to struggle as Oklahoma's Governor Brad Henry vowed to raise teacher salaries in the 2006 state budget. In addition, the state was successful in passing a lottery that was established to commit money to Oklahoma education. Oklahoma's average teacher salary in 2003-04 was \$34,877, well below the regional average of \$38,527. Every other state in Oklahoma's seven-state region – Arkansas, Colorado, Kansas, Missouri, New Mexico, and Texas – paid a higher average salary.¹⁴ However, low teacher salaries represented only one of many educational funding problems that existed in Oklahoma.

In 1989-90, Oklahoma ranked forty-fourth in public school revenue per-pupil in average daily attendance (\$3,986) and forty-sixth in expenditures for public schools per-pupil in average daily attendance (\$3,410). Four years later, in 1993-94, Oklahoma's ranking in revenue and expenditure per-pupil dropped to forty-fifth (\$4,701), and forty-seventh (\$4,155), respectively. Oklahoma relied heavily on state funding for education, contrary to the national trend. From 1989-90 to 1993-94, Oklahoma increased its reliance on state funding from 58.2% to 63.2%. At this time, the national trend was a decrease in the dependence on state funding 48.6% to 45.8%. The reliance of Oklahoma toward more dependence on state funds was pursuant to the extra funds provided by HB1017.¹⁵

Teacher salaries and total teacher compensation in Oklahoma represent the largest portion of the educational budget.¹⁶ All students educated in the public school of Oklahoma are entitled to equal access of resources and this includes resource

accessibility in teacher compensation. Teachers are not only an important educational resource; they also represent an expensive expenditure for educational money.

Oklahoma School Funding Program

Although Oklahoma funding system was upheld by the court in the 1987 decision of the *Fair School Finance Council of Oklahoma vs. Oklahoma*,¹⁷ changes in educational funding had been made in an attempt to make funding more equitable across districts in the state. In 1981, the state funding program was adopted with modifications made in 1989, 1990, and, most recently, 1996.¹⁸

In Oklahoma the foundation/base formula adopted parallels funding systems used by many other states. This method provides for a base-funding amount that is multiplied by a weight for each student. The weight factor varied depending on the perceived level of the student's educational needs.¹⁹

Oklahoma's public schools depend heavily upon legislative-appropriated and state-dedicated funding sources. Allocations from the state General Revenue Fund that consist of monies derived from the state income tax, sales tax, gross production, and use tax; the Education Reform Revolving Fund from personal and corporate income taxes, sales and use taxes, estate tax, and gasoline tax; and other statewide sources constitute the majority of local school district receipts.²⁰ By the 2006 school year, money received from the lottery figured into revenue money for education. Clearly, such a heavy reliance on state-generated revenues in support of common education may result in profound fiscal difficulties for local districts due of the variance in the state's ability to generate funds that are ultimately responsible for compensating teachers.

Once revenues are received, the money is divided to the school district in the state according to specific formulas. The components of the Oklahoma education funding system included a foundation funding formula, a transportation supplement to the foundation formula, and a second tier equalization formula that is a modified guaranteed yield. Oklahoma's funding system is enrollment driven, which is similar to funding systems in other states. For interested educators, citizens, and/or legislators, an explanation of the components of the Oklahoma school funding system clarified the way in which Oklahoma schools received money for their school budgets.

Beginning with the 1997-98 school year, and each school year thereafter, each school district is entitled to its initial allocation of State Aid. The information that a school district must submit to receive this aid is (1) student enrollment by grade level, (2) pupil category counts, and transportation supplement data. The Foundation Aid is determined by subtracting the amount of the Foundation Program Income from the cost of the Foundation Program and adding to this the difference the Transportation Supplement. The Foundation Program Income involves the following sums: adjusted assessed valuation of the current school year of the district, minus the previous year protested ad valorem tax revenues; 75% of the amount received by the school district from the county levy during the preceding fiscal year, motor vehicle collections; gross production tax; state apportionment, and R. E. A. Tax.²¹

One significant component of the Oklahoma funding system is the foundation program which included a transportation supplement. The district's supplement was based on average daily membership (ADM) representing the number of students

legally transported because the student lives one and one-half miles or more from school. A per capita allowance, determined by the legislature annually, was multiplied by the average daily haul (ADH). This figure was based on the number of students transported per square mile in a school district. This figure, once determined, constituted the money received for the transportation supplement.

Another component of the Oklahoma funding system was the Salary Incentive Aid,²² which constituted the second-tier resource equalization program. This determination came from property tax levied up to 20 mills for each local district. This aid is calculated semi-annually in July and January, with funds distributed monthly by means of electronic transfer. The amount received for January through June is based on the January calculation, while the funds for August through December were based on the July calculation.

The Salary Incentive Aid²³ is determined as follows: (a) Multiply the Incentive Aid guarantee by the district's highest weighted average daily membership based on the first nine weeks of the current school year, the preceding school year, or the second preceding school year; (b) Divide the district's adjusted assessed valuation of the current school year minus the previous year's protested *ad valorem* tax revenues by 1000 and subtract the quotient from the product of subparagraph "a" of this paragraph. The remainder should not be less than zero; (c) Multiply the number of mills levied for general fund purposes above the fifteen mills required to support Foundation Aid, not including the county four-mill levy, by the remainder of subparagraph "b". The product should be the Salary Incentive Aid of the district.²⁴

Design

This study was limited to the analysis of the degree of equity in the distribution of instructional salaries and total instructional compensation among Oklahoma students. The average per-pupil resource at the district level was used because of the sheer magnitude of data involved when using individual student data. Teachers represented a resource and educational dollars were expended to provide these instructional leaders for the classroom. While one could not conclusively state that resource dollars spent on education either deprived or benefited a child's specific educational learning, all children educated in the public schools of Oklahoma have a right to equal access of educational resources. In this study the two components of educational resources were analyzed:

1. Instructional salaries resources per-pupil for Oklahoma;
2. Total instructional compensation per-pupil for Oklahoma.

Both instructional salaries and total instructional compensation were used to measure the accessibility of resources across the state of Oklahoma.

In school populations, the average daily membership (ADM) represents an important figure because the money a district receives as state aid is based on this figure. The ADM is computed on the weighted and unweighted basis; the weighted figure takes into consideration the students who have special educational needs and the unweighted figure considers all students equal in educational needs. Stearns (2005)²⁵ compared the weighted and unweighted ADM. Each year the correlation between the weighted and unweighted average daily membership was almost a

perfect 1.00, indicating that the choice of pupil counts does not affect the measurement of interdistrict equity.²⁶

Average daily membership was calculated by dividing the pupils' total days present and total days absent by the number of day taught. Any pupil absent from a school for ten consecutive days was removed from the school roll beginning the eleventh day. Once removed from the roll, a pupil would not be considered in a district's average daily membership until the student re-enrolls in school. So for the purpose of this definition, consecutive days represented recorded enrollment days.²⁷ The unweighted average daily membership figures will be used in this study.

Horizontal Equity

The horizontal equity principal implies equal treatment of equals accessed through resource accessibility and wealth neutrality. Instructional salaries and total instructional compensation represented resources for investigation of this horizontal equity analysis. An equity investigation of resources determined whether a specific resource, instructional salaries or total instructional compensation, was distributed equitably for all students. This was known as resource accessibility, and descriptive statistical measures were used as a means of investigation.

The mean of a distribution was the sum of the values of the observations divided by the number of values that entered the sum. When considering instructional salaries as the distribution, the sum of all instructional salaries for a district would be computed and then divided by the number of instructors in the district. The mean measured the central tendency.²⁸

The range represented the difference between a distribution's highest and lowest observations in a distribution. A smaller range indicated a greater degree of equity. The range represented a limiting measurement.²⁹

The restricted range, a range-type measure, ignored the upper and lower extremes of the distribution. This figure represented the difference between the per-pupil dollar inputs at or above where 5 percent of the pupils fell (X_{95}) and the per-pupil dollar inputs at or below where 5 percent of the pupils fell (X_5). This statistical measure examined values that were more representative because the extremes were eliminated in the calculations percentiles. The restricted range represented the difference between the per-pupil resources of the districts at the 95th and 5th percentiles.³⁰

The variance represented the average of the squared deviations of each per-pupil object from the mean per-pupil object. This measurement, along with the range and the restricted range, were sensitive to equal percentage increases and changed simply as a result of inflation.³¹

The standard deviation was the square root of the variance, the smaller the variation in the distribution of resources per-pupil, the greater the equity. In a normal, bell-shaped distribution, approximately 68% of the values in the distribution fell within one standard deviation from the mean in each direction and about 95% with two standard deviations.³² The standard deviation was based on suppositions about the distributions that occurred in a bell curve. A smaller standard deviation indicated a greater equity in per-pupil distribution of resources.

The coefficient of variation represented the square root of the variance divided by the mean of the distribution. This was expressed as the ratio of the standard deviation of the distribution of the mean. Using the formula for the coefficient of variation yielded a single value between zero and one; the smaller the values, the smaller the variation in the distribution of resources.³³

The above descriptive statistical measures were used to ascertain the degree of equity of the distribution of instructional salaries and total instructional compensation for all students educated in Oklahoma public schools. The next component of the investigation attempted to ascertain the degree to which wealth neutrality was achieved when considering the distribution of instructional salaries and total instructional compensation. Correlation and regression analysis indicated the impact of other factors such as enrollment, proximity, socioeconomic status, and the percentage of Caucasian student in the district on the distribution of instructional salaries and total instructional compensation in the state of Oklahoma.

Wealth Neutrality Measures

The wealth neutrality principle maintained that funding for a student should not be dependent upon the property wealth of the area in which the student resides. Correlation and regression analyses are typically used to assess wealth neutrality. The Gini coefficient and the McLoone index were two additional measures used to investigate wealth neutrality.

The Gini coefficient, often used by economists to measure income equality, measured how closely the variable distribution was to providing a specific percentage of the population with that same percentage of the variable. The Gini coefficient is

based on the Lorenz curve, and determined how far the distribution of resources was from providing each percentage of students with the same resource or resource inequality.³⁴

The McLoone index used the median as a measurement point and calculates the ratio of the actual values below the median. This measurement was specific to school finance and was designed to demonstrate the degree of equity in the lower half of the distribution.³⁵

Correlation measures were used to evaluate the relationship between property wealth per unweighted student, assessed valuation per-pupil. Other variables considered in the correlation were socioeconomic status and percentage of Caucasian students. Four separate correlations were considered with different dependent variables: 2000 instructional salaries, 2000 total instructional compensation, 2005 instructional salaries, and 2005 total instructional compensation.

Two separate regression equations were generated for this study. In one equation, the dependent variable was instructional salaries with the independent variables consisting of average daily membership, percentage of students on free/reduced lunches, proximity of the district to a border state, and the percentage of Caucasian students. The dependent variable in the second regression equation was the total instructional compensation. Each school year would be considered separately. The purpose of using several independent variables was to determine if any of these factors influenced the resource accessibility of instructional salaries or total instructional compensation.

Results will be presented in several formats including tables containing correlation coefficients, R squared values, residual information, and other regression information. Using regression established what independent variables influenced wealth neutrality and the degree to which that influence made the expenditure for resources of instructional salaries and total instructional compensation inequitably distributed to the student in Oklahoma public schools.

Summary

The formulas explained above provided the methodology used in this investigation, including an explanation of the resources and funding formulas and the mathematical concepts that would be used for investigation in this study. Because instructional salaries and total instructional compensation represented the largest portion of Oklahoma's educational budget, the question remained how equitably these resources were distributed to the students who are educated in Oklahoma public schools. A logical approach to an equity-based research study necessitated the use of quantitative measures to reduce the possibility of misinterpretation of information due to human subjectivity. Only after an in-depth study such as this is undertaken can Oklahoma's citizens' rest assured that every student educated in the public school system of Oklahoma receives equitable resources and the amount of money spent for education does not depend upon the property wealth of the district in which the child is education. Chapter four will include the results of the analysis.

Notes

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Chapter 4

Results

The purpose of this study was to assess the degree to which educational resources, instructional salaries and total instructional compensation, were equitably distributed to the students in Oklahoma public schools. An equitable distribution presupposes all students had equal access to resources and that no student or group of students received an unfair advantage in the education process. Two years of fiscal data were examined, including the 2000 fiscal year representing the most recent school year before a \$3000 pay raise was granted to the instructional staff and the 2005 fiscal year representing the most current data after the pay increase. This examination of two fiscal years could reveal changes that occurred in the distribution resources.

Chapter three outlined the research design and procedures utilized to determine the distribution of resources which were instructional salaries and total instructional compensation. The current chapter will begin with a review of this methodology and conclude with the presentation of results examining total instructional salaries and compensation from the perspective of resource accessibility, wealth neutrality, and variables potentially influencing the equitable distribution of these resources.

Data for the current study were taken from the Oklahoma Cost Accounting System (OCAS) information reported to the state department of education by individual school districts in Oklahoma. State aid data such as assessed valuation per-pupil and unweighted average daily membership (ADM) were also obtained from

OCAS. Information pertaining to proximity of school districts that bordered other states was obtained by using maps in the 2005-2006 Oklahoma Directory of Education.¹ The percentage of students eligible for free/reduced lunches was used to determine socioeconomic level of students in the district. This information and the percentage of Caucasian students were obtained from the individual district's Oklahoma School Report Card.²

Resource Accessibility

To determine if educational resources, instructional salaries and total instructional compensation were equitably distributed in the state of Oklahoma, four research questions were examined.

1. To what extent were fiscal resources utilized to support instructional salaries during the fiscal year 2000 distributed equitably across Oklahoma school districts?
2. To what extent were fiscal resources utilized to support total instructional compensation during the fiscal year 2000 distributed equitably across Oklahoma school districts?
3. To what extent were fiscal resources utilized to support instructional salaries during the fiscal year 2005 distributed equitably across Oklahoma school districts?
4. To what extent were fiscal resources utilized to support total instructional compensation during the fiscal year 2005 distributed equitably across Oklahoma school districts?

Resource accessibility was assessed through descriptive statistics. Specific measures included range, restricted range, federal range ratio, mean, standard deviation, variance, and coefficient of variation.

Table 1: 2000/2005 Range, Restricted Range, and Federal Range Ratio

		Restricted	Federal
	Range	Range	Range
			Ratio
2000 Salary	6317.69	1428.91	0.83103
2000 Compensation	6935.52	1537.01	0.78326
2005 Salary	9265.24	1855.48	0.96322
2005 Compensation	9720.12	1949.23	0.85333

Table 1 represents data reported for the fiscal year 2000 from 543 districts in the state of Oklahoma. The range of salaries was calculated using the highest salaries per-pupil and subtracting from this figure the lowest salary per-pupil. The highest average district salary per-pupil was \$7,581.73 and the lowest was \$1,264.04 per-pupil, making a difference of \$6,317.69 per-pupil. The smaller the range distribution, the more equitable the distribution of salaries became throughout the state. The majority of salaries in 2000 fell between \$1,800 and \$4,000, but extremes influenced the range calculations.

The restricted range calculation used salaries in the 95th percentile and in the 5th percentile. This eliminated the extreme outliers in the range, the wealthiest and poorest districts in Oklahoma, and represented the instructional salaries paid by the majority of school districts. The number of districts in the range was 543 compared to 488 districts in the restricted range. The highest salary in the restricted range was \$3,146 compared to \$1,717 for the lowest salary. The restricted range for 2000 salaries was \$1,428.91.

Instructional compensation included both salaries and benefits. In 2000 the range of instructional compensation, generated from data from 542 districts, was

computed by using the highest compensation, \$8,284.86, and subtracting, \$1,349.34, the lowest compensation, with a difference of \$6,935.52. The compensation range was expected to be larger than the salary range because compensation included the instructional salaries and the benefits.

The restricted range was calculated using the highest compensation at the 95 percentile, \$3,499.33, and the lowest at the fifth percentile, \$1,962.32, a difference of \$1,537.01 per-pupil. Compensation figures from 542 districts were used in the range calculations, compared with only 488 district figures for the restricted range.

Five hundred thirty-nine districts contributed to range calculations with this figure reduced to 487 districts for restricted range. The 2005 fiscal year figures represented an increase both in instructional salaries and total instructional compensation compared to fiscal year 2000. Lowest salary in the 2005 range was \$1,388.26 per-pupil compared to highest salary of \$10,653.50 per-pupil, a difference of \$9,265.24 per-pupil. Highest instructional salary for restricted range at the 95th percentile was \$3,781.68 and lowest at the 5th percentile was \$1,926.20, a difference of \$1,855.48 per-pupil. Lowest compensation figured in the range was \$1,622.98 and highest was \$11,343.10 with the difference of \$9,720.12. Five hundred forty-two districts contributed information for compensation calculated in 2000 compared to only 539 districts in 2005. In 2005 restricted range for compensation was \$1,949.23, with highest compensation of \$4,233.64 and lowest compensation of \$2,284.41.

The federal range ratio offered another statistical measure of resource accessibility. The restricted range was divided by the per-pupil resources at the 5th

percentile. The federal range ratio in both 2000 and 2005 proved less in instructional compensation than salaries indicating a more equitable distribution in compensation.

Table 2: 2000/2005 Descriptive Statistics

	Mean	Std. Dev.	Variance	Coeff Var
2000 Salary	\$2268.89	\$505.25	255276.61	.22
2000 Compensation	\$2543.48	\$536.36	287687.38	.21
2005 Salary	\$2596.70	\$722.95	522659.05	.28
2005 Compensation	\$2988.84	\$776.73	603302.12	.26

Table 2 included the 2000 mean for instructional salaries, \$2,268.89 per unweighted average daily membership, and for total instructional compensation, \$2,543.48. This difference of \$274.59 accounted for an approximate 12% increase allowing for the benefit package received by the instructional staff. When the total amount of instructional salaries for the state of Oklahoma was divided by the unweighted ADM, the average instructional salaries per-pupil was \$2,268.89 and the total compensation which included instructional salaries and benefits was \$2,543.48 per-pupil.

The 2005 mean salaries represented a 14% increase from the 2000 salaries mean, and when comparing the total instructional compensation for the two years, there was a 17% increase. The mean for instructional salaries was \$2,596.70 representing a \$328.81 increase in the mean for instructional salaries of 2000. In 2005 the difference between the mean for instructional salaries and total instructional compensation represented a difference of \$392.14.

The standard deviation for instructional salaries in 2000 was \$505.25. In a normal distribution, 68% of the salary distribution ranged from \$1,763.64 to

\$2,774.14. An increase of \$31.11 was the standard deviation for total instructional compensation of \$536.36. In a normal distribution curve, 68% of the compensation would range from \$2,006.64 to \$3,079.36. The 2005 standard deviation reflected the \$3000 increase in instructional salaries and compensation with increases of \$217.70 and \$240.59, respectively. The distribution per-pupil for salaries would range from \$1,874.75 to \$3,320.65 and for instructional compensation from \$2,213.11 to \$3,766.37 for the normal distribution curve. For 2000 the variance was 255,276.61 for instructional salaries and 287,687.38 for instructional compensation. In 2005, the instructional salaries variance was 522,659.05 and the compensation variance was 603,302.12.

The coefficient of variation incorporated both the mean and the standard deviation to describe distributions. The coefficient of variation minimum value is zero and increasing values indicate greater disparity. Because both mean and standard deviation were used, the coefficient of variation remains in congressionally mandated legislation as an equity factor for Title I legislation.³ The closer to zero the coefficient, the higher the degree of horizontal equity became. In 2000 the coefficient of variation for salaries was .22 and for instructional compensation was .21, far from either perfect equity or perfect inequity. The same was true for the 2005 figures of .28 and .26, but these figures indicate greater degree of inequity. As salaries and compensation increased, more inequity existed in the distribution of resources.

Wealth Neutrality

The relationship between the amount of funds spent to local fiscal conditions of the district continued to be a concern for education financial scholars. According

to the concept of wealth neutrality, location of where a student lived should have no relationship to the type of education a student received. Questions five through eight of the current study addressed the issue of wealth neutrality.

5. To what extent were the fiscal resources utilized to support teacher salaries in Oklahoma school districts during the fiscal year 2000 wealth neutral?
6. To what extent were the fiscal resources utilized to support total teacher compensation in Oklahoma school districts during the fiscal year 2000 wealth neutral?
7. To what extent were the fiscal resources utilized to support teacher salaries in Oklahoma school districts during the fiscal year 2005 wealth neutral?
8. To what extent were the fiscal resources utilized to support total teacher compensation in Oklahoma school districts during the fiscal year 2005 wealth neutral?

Table 3: 2000/2005 Wealth Neutrality Measures

	Gini Coefficient	McLoone Index
2000 Instructional Salaries	0.10	0.87
2000 Instructional Compensation	0.11	0.89
2005 Instructional Salaries	0.12	0.88
2005 Instructional Compensation	0.12	0.87

Instructional salaries and total instructional compensation constituted educational expenditures used for this study. The Gini coefficient is a wealth neutrality analytical tool used to compare how a certain percentage of students aligned with a certain percentage of instructional expenditures. The Gini coefficient calculated how far the distribution was from providing each percentage of students with an equal percentage of the resources.⁴ The Gini coefficient for 2000 instructional salaries was .10 and for compensation was .11, while the Gini

coefficient for 2005 was .12 and .12, respectively. Gini coefficient is graphically represented by the Lorenz curve.

Figure 1: 2000 Instructional Salaries – Lorenz Curve

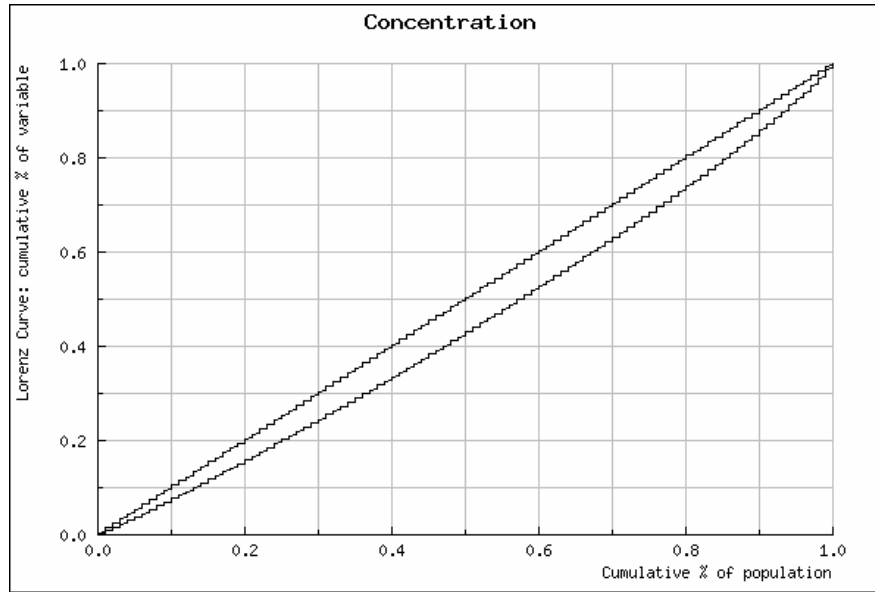
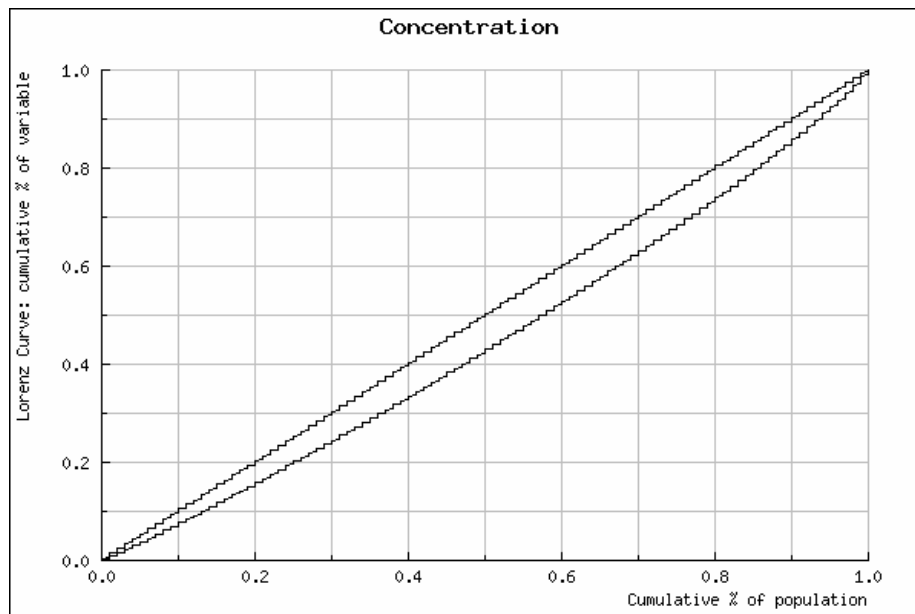


Figure 2: 2000 Instructional Compensation – Lorenz Curve



The Gini coefficient when visually expressed in the Lorenz curve for the 2000 fiscal year indicated a slight amount of inequity. Perfect equity in the distribution of resources is represented by top line in both Figures 1 and 2. The distance the bottom line is from the top line represented the depth of inequity in the bottom half of the distribution. With Gini coefficients of .10 for salaries and .11 for total instructional compensation, there existed some inequality. Total equity was not attained. For total equity to exist, a Lorenz Curve would depict no difference between the two lines. There would not be an area between the top and bottom line as is seen in Figures 1 and 2.

Figure 3: 2005 Instructional Salaries – Lorenz Curve

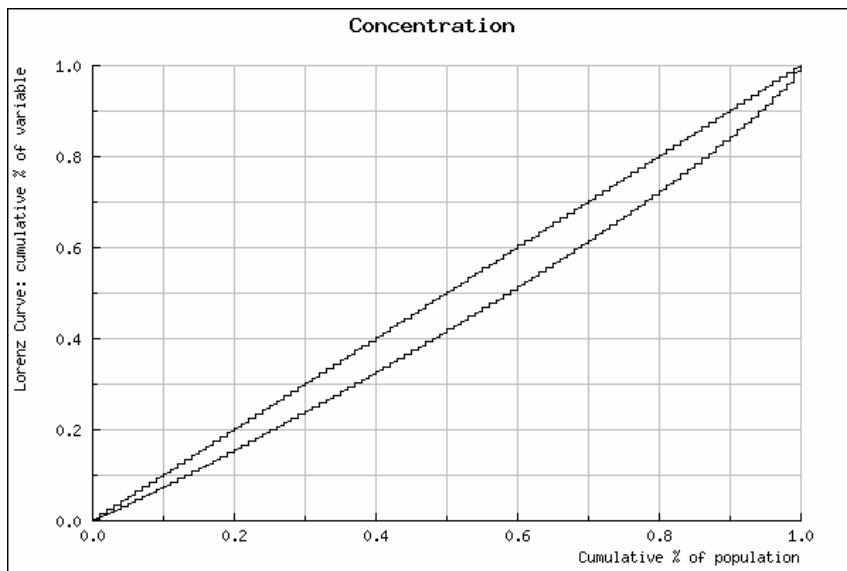
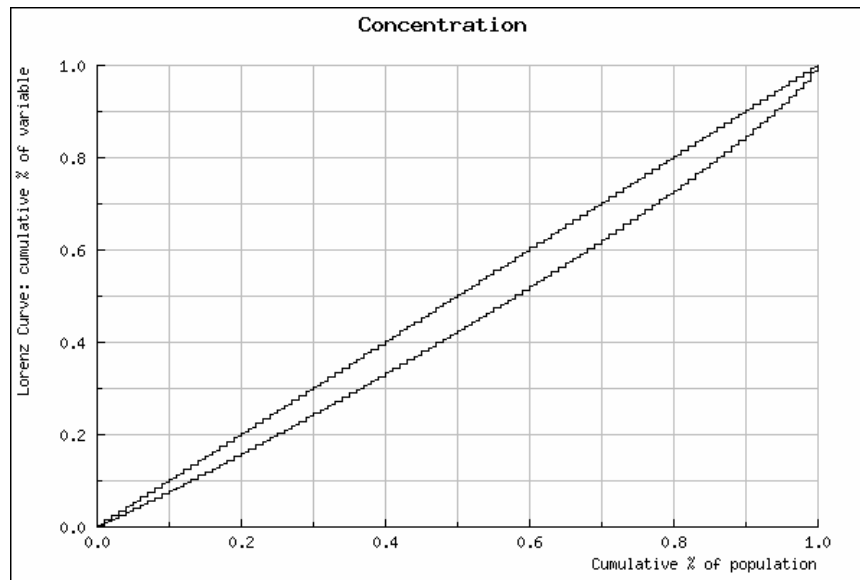


Figure 4: 2005 Instructional Compensation – Lorenz Curve



Figures 3 and 4 indicated an increase in inequity of distribution was greater in the 2005 fiscal year than the 2000 fiscal year. This was reflected in the Lorenz curve. The distance between the two lines is greater in Figures 3 and 4 than in the distance between the two lines in the Fig. 1 and Fig. 2. Data indicated that greater inequity existed in 2005. The Gini coefficients of 0.20 for instructional salaries and 0.21 for total instructional compensation, while not representing total equality, did represent an increase amount of inequality in the distribution of resources for the 2005 fiscal year.

The McLoone Index, an analytical tool unique to education finance that measured wealth neutrality, concentrated on the amount of equity in the lower half of the distribution, districts with greatest financial need. This tool demonstrated the degree of equity in the bottom half of distribution, and the ratio between the sums of observations below the median to the sum of all observations necessary to bring those districts below the median to the median level.⁵ McLoone index had a maximum

value of one, and the closer to one, the greater the degree of equity. In 2000 the McLoone index for salary was .87 and for compensation was .89. Both the 2000 salary distribution and the 2000 compensation distribution represented more equity than inequity. Although neither figure represented totally equity, the index for compensation was slightly more equitable than the salary index. The 2005 McLoone index figures shown in Table 3 indicated a slightly greater degree of equity, .88 when compared with the 2000 salary figure of .87. The reverse was true for compensation. The 2000 compensation calculation of .89 indicated a greater degree of equity than the 2005 compensations calculation of .87.

The next section of the study addressed variables that possibly influenced the distribution of resources. One of the variables investigated was the assessed valuation per-pupil, which indicated the property wealth of the district. Results pertaining to the importance of the assessed valuation in the distribution of resources were presented in the following section using the correlation coefficient and regression analysis. The results relating to this variable influenced the ability of the state to validate its wealth neutrality.

Variables Affecting the Distribution of Resources

This study investigated other variables that could influence distribution of instructional resources by school districts in Oklahoma. To investigate the relationship of these factors, the Pearson correlation coefficient and regression analysis were used. Factors used for this study included the assessed valuation of the property, percentage of Caucasian students, socioeconomic status, and proximity of the school district. The research questions to be investigated were as follows:

9. To what extent were fiscal resources utilized to support instructional salaries in Oklahoma during the fiscal year 2000 related to the following district variables?
 - (a) assessed valuation per-pupil
 - (b) district's proximity to another state
 - (c) socioeconomic status of the students in the school district
 - (d) percentage of Caucasian students.
10. To what extent were fiscal resources utilized to support total instructional compensation in Oklahoma during the fiscal year 2000 related to the following district variables?
 - (a) assessed valuation per-pupil
 - (b) district's proximity to another state
 - (c) socioeconomic status of the students in the school district
 - (d) percentage of Caucasian students.
11. To what extent were fiscal resources utilized to support instructional salaries in Oklahoma during the fiscal year 2005 related to the following district variables?
 - (a) assessed valuation per-pupil
 - (b) district's proximity to another state
 - (c) socioeconomic status of the students in the school district
 - (d) percentage of Caucasian students.
12. To what extent were fiscal resources utilized to support total instructional compensation in Oklahoma during the fiscal year 2005 related to the following district variables?
 - (a) assessed valuation per-pupil
 - (b) district's proximity to another state
 - (c) socioeconomic status of the students in the school district
 - (d) percentage of Caucasian students.

The correlation coefficient only measured the relationship between three of these variables and expenditures. The district's proximity to another state could not be measured using the correlation coefficient because this variable was valued either

at 0, if not a bordering district, or 1 if a bordering district. Since this method was used to identify the districts that bordered another state, the correlation coefficient was not used to determine the extent this variable affected either the 2000 instructional salaries, 2000 total instructional compensation, 2005 instructional salaries or 2005 total instructional compensation.

Table 4: 2000/2005 Correlations

	Assval	PctCauc	PctFr/Red
2000 Instructional Salaries	0.590*	-0.024	0.225*
2000 Instructional Compensation	0.621*	-0.025	0.230*
2005 Instructional Salaries	0.666*	0.020	0.237*
2005 Instructional Compensation	0.668*	-0.011	0.249*

* Indicates statistical significance

Table 4 presented information relating to the Pearson correlation. In both fiscal years 2000 and 2005, a moderate to strong relationship existed between the assessed valuation of property for both instructional salary and compensation. The relationship began fairly strong in 2000 and increased in 2005. The compensation correlation was always slightly stronger as comparisons were made between to salaries using assessed valuation of property. No significant relationship existed between the percent of Caucasian students and the instructional salaries or compensation. As the percentage of Caucasians increased, the distribution of resources was less; this was not true for the 2005 instructional salaries.

Socioeconomic status was defined by a percentage of students in the district eligible for free/reduced lunches. A significant relationship existed between distribution of resources and percentage of students on free/reduced lunches. This relationship

increased over time. The 2000 salaries coefficient was 0.225 and the 2005 compensation coefficient was 0.249.

Regression analysis determined the degree to which the independent variables influenced distribution of resources. The dependent variable in regression analysis was either instructional salaries or instructional compensation. Independent variables used were assessed valuation, socioeconomic status determined by number of students qualified for free/reduced lunches, proximity of the district to a bordering state, and percentage of Caucasian students.

Table 5: 2000 Salary Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.655(a)	.429	.425	383.57698

a Predictors: (Constant), PCTFRLUNCH, VALADM, PROXIMITY, PCTCAUC

ANOVA(b)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	59343599.418	4	14835899.854	100.834	.000(a)
	Residual	79009508.251	537	147131.300		
	Total	138353107.669	541			

a Predictors: (Constant), PCTFRLUNCH, VALADM, PROXIMITY, PCTCAUC

b Dependent Variable: SALADM

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1823.709	79.353		22.982	.000
	VALADM	.012	.001	.608	17.953	.000
	PROXIMITY	90.576	35.658	.085	2.540	.011
	PCTCAUC	-3.416	.839	-.138	-4.070	.000
	PCTFRLUNCH	5.589	.828	.220	6.747	.000

a Dependent Variable: SALADM

Table 5 in the model summary the R value is the correlation between the entities of independent variables and the dependent variable. R value ranges from 0 to 1, with larger values of *R* indicating the stronger relationship between distribution of instructional salaries and independent variables. The calculated R value of .655 indicated a significant relationship between the distribution of instructional salaries and independent variables. R squared represented the proportion of variation in dependent variable explained by the regression model, with possible values between 0 to 1. The R squared value of .429 indicated that variation was explained using this model. The adjusted R square attempted to adjust the R square for a better model fit. The F statistic indicated that the independent variables taken together were a significant predictor of the dependent variable.

The regression model displayed unstandardized coefficients, the B coefficients indicated the magnitude of the relationship between each of the independent variables on distribution of salaries. Every \$1 increase in assessed valuation per-pupil was associated with an increase of \$.012 in teacher salaries. Proximity was a significant predictor of salaries, with an associated increase of \$90.576 in salaries between districts from non-proximal to proximal counties. Percentage of Caucasian students had no significance in the salary distribution with a value of -3.416. The Beta standardized coefficient attempted to make the independent variables more comparable. The t statistic tested for the statistical significance of the variable in the regression. All of the variables in this study were significantly related to salaries except proximity.

Table 6: 2000 Compensation Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.685(a)	.469	.465	392.556233 571658900

a Predictors: (Constant), PCTFRLUNCH, VALADM, PROXIMITY, PCTCAUC

ANOVA(b)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	73033987.006	4	18258496.752	118.484	.000(a)
	Residual	82597812.533	536	154100.397		
	Total	155631799.539	540			

a Predictors: (Constant), PCTFRLUNCH, VALADM, PROXIMITY, PCTCAUC

b Dependent Variable: COMPADM

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	2069.728	81.360		25.439	.000
	VALADM	.014	.001	.643	19.672	.000
	PROXIMITY	82.031	36.503	.073	2.247	.025
	PCTCAUC	-3.922	.860	-.149	-4.560	.000
	PCTFRLUNCH	6.064	.849	.225	7.138	.000

a Dependent Variable: COMPADM

In Table 6 the R value indicated a stronger relationship for instructional compensation than for the 2000 instructional salaries. Both the R squared value and the adjusted R square value indicated a strong correlation existed between distribution of instructional compensation and independent variables. R regression and residual sum of squares was larger than in the 2000 salary model because salaries are included in total compensation. In Table 6 the t statistic indicated assessed valuation, socioeconomic status, and proximity each influenced the distribution of

compensation. Assessed valuation was the strongest variable, and proximity was the weakest variable in predicting distribution of compensation. Percentage of Caucasian was the only variable inversely related in both 2000 salaries and compensation. All other independent variables were statistically significant in predicting the distribution of compensation.

Table 7: 2005 Salary Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.748(a)	.559	.556	481.67766

a Predictors: (Constant), PCTFRLUNCH, VALADM, PROXIMITY, PCTCAUC

ANOVA(b)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	157295430.492	4	39323857.623	169.490	.000(a)
	Residual	123895141.006	534	232013.373		
	Total	281190571.498	538			

a Predictors: (Constant), PCTFRLUNCH, VALADM, PROXIMITY, PCTCAUC

b Dependent Variable: SALADM

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	1053.158	153.585		6.857	.000
	VALADM	.014	.001	.681	22.704	.000
	PROXIMITY	145.777	44.822	.096	3.252	.001
	PCTCAUC	2.486	1.276	.070	1.949	.052
	PCTFRLUNCH	14.493	1.466	.349	9.886	.000

a Dependent Variable: SALADM

Table 7 included the regression analysis for 2005 instructional salaries. R value was greater for instructional salaries in 2005 than in both salaries and compensation in 2000. The R value of .748 indicated a strong relationship between

distribution of salaries and independent variables. The R squared value of .559 indicated a large proportion of variation was explained using this regression model. Little variation existed between R squared value and adjusted R squared that indicated a strong regression model.

In the coefficient regression, strength of the variables in relation to distribution of resources changed when compared with the in the 2000 salary regression. Assessed valuation, socioeconomic status, proximity and percentage of Caucasian students were the order in which variables were related to the distribution of salaries. In the 2000 model, percentage of Caucasian students was inversely proportional, but in the 2005 regression model this was not true. All the independent variables proved to be significant in the distribution of the 2005 salaries.

Table 8: 2005 Compensation Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.754(a)	.568	.565	512.42661

a Predictors: (Constant), PCTFRLUNCH, VALADM, PROXIMITY, PCTCAUC

ANOVA(b)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	184358271.237	4	46089567.809	175.525	.000(a)
	Residual	140218271.810	534	262581.033		
	Total	324576543.048	538			

a Predictors: (Constant), PCTFRLUNCH, VALADM, PROXIMITY, PCTCAUC

b Dependent Variable: COMPADM

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	1441.890	163.390		8.825	.000
	VALADM	.015	.001	.690	23.244	.000
	PROXIMITY	160.444	47.684	.098	3.365	.001
	PCTCAUC	1.204	1.357	.032	.887	.375
	PCTFRLUNCH	15.150	1.560	.339	9.714	.000

a Dependent Variable: COMPADM

In Table 8 the R value of .754 indicated a significant relationship existed between instructional compensation and the independent variables. The F statistic was statically significant in the distribution of the 2005 instructional compensation. All independent variables, assessed valuation per-pupil, socioeconomic status, proximity, and percentage of Caucasian students proved to be statistically significant in the distribution of 2005 instructional compensation.

The analysis showed that the assessed valuation proved to be the strongest variable in distribution of instructions compensation. In both 2005 regressions, percentage of Caucasian students was not an inverse relationship as it had been in the 2000 regressions.

Conclusion

This study investigated resource accessibility and wealth neutrality using resource expenditures of instructional salaries and instructional compensation. Two years of data were investigated, 2000 and 2005. Year 2000 represented the year before a \$3000 pay raise was awarded to the instructional staff and 2005 represented the most current year after the pay increase.

The first construct addressed in this study was resource accessibility. This investigation used descriptive statistics: range, restricted range, federal range ratio, mean, variance, standard deviation and coefficient of variation. Wealth neutrality was investigated by using the econometric measures, McLoone index and Gini coefficient. Wealth neutrality was also examined using the correlation coefficient and regression coefficient to determine relationship of independent variable, assessed valuation to dependent variables, instructional salaries and instructional compensation. Other independent variables used to investigate the distribution of resources were socioeconomic status, proximity, and percentage of Caucasian students. Chapter five will provide an analysis of results and conclusions with implications of the study.

Notes

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1. State Department of Education, “*Here Comes the Sun 2005-2006*,” *Oklahoma Directory of Education* (University of Oklahoma Printing Services. 2004).
 2. Education Oversight Board. Office of Accountability,
<http://www.schoolreport.org/approach.asp>.
 3. W. J. Husser and W. Sonnenberg, *Trends in Disparities in School District Level Expenditures Per-pupil*, Institute of Educational Sciences, National Center for Educational Statistics, January 31, 2000, p.13.
<http://www.nces.ed.gov/pubsearch/pubinfo.asp?pubid=2000020> (accessed Nov.23, 2006).
 4. Education Commission of the States, *Equity in School Finance* (Denver, CO. 1979) 20.
 5. D. C. Thompson, R. C. Wood, and D. S. Honeyman, *Fiscal Leadership for Schools: Concepts and Practices* (New York: Longman Publishing Group. 1994), 248.

Chapter 5

Findings, Conclusion, and Implications

Data presented in chapter four formed the foundation from which finding could now be made concerning the equitable distribution of the resources, instructional salaries and total instructional compensation. Conclusions addressing the degree of equitable distribution of these resources in Oklahoma will be presented and implications of this study with possible further research and practice in this educational financial field will conclude chapter five.

The objective of this study was to compare the distribution of instructional salaries and total instructional compensation over two distinct fiscal years. The two years chosen were 2000 and 2005 because fiscal year 2000 represented the last year before a \$3000 pay increase was awarded and 2005 fiscal year represented the most current year data was available after the pay increase. Comparisons between the two years were intended to determine variations in the equitable distribution of resources, and the extent to which the distribution of resources was wealth neutral. Variables such as assessed valuation, proximity, socioeconomic status, and the percentage of Caucasian were investigated to determine their influence on the distribution. Both instructional salaries and total instructional compensation were analyzed using resource accessibility measures and wealth neutrality measures.

Horizontal equity for the resources was measured using statistical measures that reflected the spread in the distribution including the range, mean, variance, standard deviation, and coefficient of variation. The Gini coefficient, the McLoone index, the regression coefficient, and the correlation coefficient were measures used

to determine, wealth neutrality, the extent per-pupil expenditures were related to local school district wealth.

This study attempted to answer the following questions.

1. To what extent were fiscal resources utilized to support instructional salaries during the fiscal year 2000 distributed equitably across Oklahoma school districts?
2. To what extent were fiscal resources utilized to support total instructional compensation during the fiscal year 2000 distributed equitably across Oklahoma school districts?
3. To what extent were fiscal resources utilized to support instructional salaries during the fiscal year 2005 distributed equitably across Oklahoma school districts?
4. To what extent were fiscal resources utilized to support total instructional compensation during the fiscal year 2005 distributed equitably across Oklahoma school districts?
5. To what extent were the fiscal resources utilized to support instructional salaries in Oklahoma school districts during the fiscal year 2000 wealth neutral?
6. To what extent were the fiscal resources utilized to support total instructional compensation in Oklahoma school districts during the fiscal year 2000 wealth neutral?
7. To what extent were the fiscal resources utilized to support instructional salaries in Oklahoma school districts during the fiscal year 2005 wealth neutral?
8. To what extent were the fiscal resources utilized to support total instructional compensation in Oklahoma school districts during the fiscal year 2005 wealth neutral?
9. To what extent were fiscal resources utilized to support instructional salaries in Oklahoma during the fiscal year 2000 related to the following district variables?
 - (a) assessed valuation per-pupil
 - (b) district's proximity to another state
 - (c) socioeconomic status of the students in the school district
 - (d) percentage of Caucasian students.

10. To what extent were fiscal resources utilized to support total instructional compensation in Oklahoma during the fiscal year 2000 related to the following district variables?
 - (a) assessed valuation per-pupil
 - (b) district's proximity to another state
 - (c) socioeconomic status of the students in the school district
 - (d) percentage of Caucasian students.
11. To what extent were fiscal resources utilized to support instructional salaries in Oklahoma during the fiscal year 2005 related to the following district variables?
 - (a) assessed valuation per-pupil
 - (b) district's proximity to another state
 - (c) socioeconomic status of the students in the school district
 - (d) percentage of Caucasian students.
12. To what extent were fiscal resources utilized to support total instructional compensation in Oklahoma during the fiscal year 2005 related to the following district variables?
 - (a) assessed valuation
 - (b) district's proximity to another state
 - (c) socioeconomic status of the students in the school district
 - (d) percentage of Caucasian students.

A discussion of the finding and the association of those findings to the current research literature about educational finance will follow.

Findings

The data for both fiscal years, 2000 and 2005, consistently exhibited some degree of inequity in the distribution of resources. Five hundred forty-three districts contributed data for the 2000 descriptive statistic measures of horizontal equity. Range difference for instructional salaries and compensation were within \$6,000, indicating a high degree of inequity for both salaries and compensation (questions 1 and 2). The range figures for 2005 for both instructional salaries and total instructional compensation exhibited a larger range (questions 3 and 4), which was indicative of even greater inequity than the 2000 range figures. Even though a \$3000

pay increase was awarded, the range differences between the 2000 and 2005 fiscal year were less than \$3000, but still extremely large with \$9265.24 for salaries and \$9720.12 for compensation (questions 3 and 4).

The restricted range eliminated fifty-five districts that were either above the 95 percentile or below the 5 percentile and represented more equitable distribution of resources with a 2000 restricted range for salaries of \$1428.91 and compensation of \$1535.01, only a \$106.10 difference (questions 1 and 2). Although the 2005 figures were representative of the pay increase, the salary and compensation figures of \$1855.48 and \$1949.23 illustrated greater inequity (questions 3 and 4) when compared with the 2000 fiscal year figures. The districts in the top and bottom 5 percentiles vastly influenced the equitable distribution of both salary and compensation. When the federal range ratio was considered in 2000, salaries and compensation, .83 and .78, respectively, illustrated less equity in distribution of salaries than compensation (questions 1 and 2). However, the 2005 salary and compensation in the federal range ratio indicated less equity than the 2000 figures with .96 for salaries and .85 for compensation (questions 3 and 4), but the 2005 figures paralleled the 2000 fiscal year figures with salaries less equitably distributed than compensation.

The 2000 mean for salary and compensation per unweighted ADM were extremely close, \$2268.89 for salaries and \$2543.48 for compensation. The difference between these two figures was less than \$300, but the increased mean calculation still indicated inequity in distribution for these resources for the fiscal year 2000 (questions 1 and 2). Even after the salary increase of 2001, the difference

between the mean salary and compensation for 2005 was less than \$400, \$2596.70 and \$2988.84, respectively. Again, the large mean calculations indicated inequity in the distribution (questions 3 and 4). The large standard deviations in 2000 for both salaries and compensation supported the inequity of distribution (questions 1 and 2). The standard deviation figures in 2005, \$722.95 and \$776.73 indicated the inequity of the distribution of resources increased rather than decreased, and the variance indicated the same pattern of increases in inequity (questions 3 and 4).

The coefficient of variation data indicated the greatest amount of resource accessibility was available in the 2000 compensation distribution, with the 2000 salary figure very close, .21 and .22, respectively (questions 1 and 2). The 2005 figures indicated this same point with .28 for salaries and .26 for compensation (questions 3 and 4). Both the 2000 and 2005 salaries were less equitably distributed than compensation, and the 2000 lower figures indicate more equity of distribution than the higher 2005 figures (questions 1, 2, 3, and 4).

The above statistical information validates the inequity in horizontal equity within the state of Oklahoma. Vestegen (2002) in her research found that some schools receive eight times as much per-pupil funding as others. Some of these differences could be noted in teacher quality, class size, state of the facilities, technology opportunities, and other factors affecting student outcomes.¹ Many state courts ruled similar findings of horizontal inequities within their states as unconstitutional such as Kentucky in the 1989 *Rose v. The Council for Better Education, Inc.*² The sweeping reform in Kentucky mandated sufficient funding to provide each child with an adequate education, no matter where the child lived in the

state.³ Kentucky was not alone when it came to its state education financial system being ruled unconstitutional. Other states that required educational financial reform were New Jersey⁴, Texas⁵, Montana⁶, Massachusetts⁷, Tennessee⁸, Arizona⁹, and California¹⁰. The courts became heavily involved in attempting to correct funding systems that gave one child an advantage over another when educational resources were considered.

The descriptive statistics indicate discrepancies in teacher salaries within Oklahoma. In 1998 Murray, Evans, and Schwab found that education-reform litigation impacted the distribution of educational resources. Intra-state inequities were reduced by 19% to 34% when educational finance reform was enacted. The one factor influencing such a reduction was when state funding increased in the poorest districts while remaining unchanged in the richest districts.¹¹ A change such as this could bring less variation in teacher salaries throughout the districts in Oklahoma.

Wealth neutrality measures using the Gini Coefficient for both 2000 and 2005 were very similar. The .10 and .11 figures for salaries and compensation in 2000 indicated a slightly higher degree of equity (questions 5 and 6) than the .12 for both salaries and compensation in 2005 (questions 7 and 8). Although total equity was the optimum goal, all of these figures indicate a fair degree of inequity. The same was true for the data obtained when using the McLoone index. The closer the figures are to 1.0, the maximum value of the McLoone index, the greater the degree of equity. In 2000 salaries and compensation, .87 and .89, respectively (questions 5 and 6), indicated a slight degree of inequity. The 2005 figures also revealed inequitable distribution, but the .88 for salaries and .87 for compensation (questions 7 and 8)

indicated the salaries in 2005 were slightly more equitable, but the compensation was less equitably distributed.

Wealth neutrality, a principle first introduced by Coon, Clune, and Sugarman¹² in 1970 as “equal opportunity,” stated that “the quality of public education may not be a function of wealth, other than total wealth of the state.” Apparent in Oklahoma from the data presented in the Gini coefficient, the McLoone index, and also in the assessed valuation of the regression analysis, the property wealth of a district was influential in distribution of instructional salaries and total instructional compensation. Berne and Stiefel also found it unacceptable for the property wealth of the district to be a determinate in the amount of money available for a child’s education.¹³

The correlation coefficient measured the relationship between the assessed valuation per-pupil, socioeconomic status, and the percentage of Caucasians to the distribution of the resources. The assessed valuation per-pupil showed an increasingly strong relationship to the distribution of resources as the years progressed and also as the progression was made from salaries to compensation during each fiscal year. The assessed valuation per-pupil proved to be the most significant relationship to the resource accessibility of salaries and instructional compensation. The initial figure of .590 was the 2000 salaries correlation and the final correlation of .668 represented the relationship to 2005 compensation (questions 9a, 10a, 11a. and 12a). The socioeconomic status of the students was based on the percentage of students in the district who qualified for free/reduced lunches and also proved to be an increasingly significant relationship to the distribution of resources as

the progression was made from salaries to compensation and also from fiscal year 2000 to 2005. Although the socioeconomic status followed the same relationship pattern as the assessed valuation per-pupil, the significance of the relationship to the distribution of resources was not nearly as strong with correlations of .225, .230, .237, and .249 (questions 9c, 10c, 11c, and 12c). The percentage of Caucasian students represented almost no influence on the distribution of resources. Both salaries and compensation in 2000 were negatively influenced by the percentage of Caucasians. In 2005 the percentage of Caucasians exhibited very slight influence on the distribution of salaries, with a minimal negative effect exhibited for compensation (questions 9b, 10b, 11b, and 12b).

The regression analysis for salaries in 2000 indicated assessed valuation per-pupil, socioeconomic status, and proximity were all independent variables that influenced the distribution of resources. The percentage of Caucasian pupils also proved to be an influence in the distribution of salaries, but the percentage was inversely proportional (questions 9 and 10).

The exact same pattern was revealed when the four factors were investigated in the distribution of compensation in 2000. Assessed valuation indicated a significant factor in the distribution of compensation as did the socioeconomic factor and the proximity (questions 11 and 12).

When the \$3000 pay increase was awarded, the 2005 salary figures reflected the identical significance of variables to the distribution of resources as had previously been identified. In the 2005 salary regression analysis, the percentage of Caucasians was not an inverse proportional variable as in the other two regressions.

The percentage of Caucasian students also proved not significant in the distribution of resources (questions 9 and 10). The regression analysis for 2005 compensation repeated the same pattern exhibited by the 2005 salary regression (questions 11 and 12).

Regression analysis evaluated the effect of four independent variables, assessed valuation, socioeconomic status, proximity, and percentage of Caucasians on four dependent variables, 2000 salaries, 2000 compensation, 2005 salaries and 2005 compensation. All regression analyses results were similar in pattern and significance (questions 9, 10, 11 and 12).

With more emphasis being placed on student achievement due to *No Child Left Behind (NCLB)* and more pressure being placed on district to hire “highly qualified” teachers, it became imperative that all districts have the same amount of resources to spend on teacher salaries. Proximity should not be a significant variable in how much money a district pays in instructional salaries or total instructional compensation. This is also true for the number of students who qualify for free/reduced lunches, the socioeconomic status.

The Report of the National Commission on Teaching and America’s Future¹⁴ validated the importance of the teacher in the classroom. Sanders, Horn, Wright, and Haycock’s¹⁵ research demonstrated the importance effective teachers have in increasing student achievement. Hanushek’s research indicated effective teachers could overcome the achievement “gap” that existed between low income students and other students.¹⁶ Greenwald, Hedges, and Laine indicated that school expenses were definitely and significantly related to student achievement.¹⁷ Hiring and retaining

effective teachers must take place if improved student achievement is the goal. For this reason, teachers are considered both an expense and a resource. It was this resource that all students in the state of Oklahoma must have equal access to if improved student achievement is to take place.

Conclusions

The preceding section presented a summary of the findings of this study and how those findings related to the research literature. Now conclusions about the resource accessibility, wealth neutrality, and factors that contributed to all students educated in Oklahoma public school receiving equal access to instructional salaries and total instructional compensation will be presented.

1. Range measures indicated large discrepancies between the districts that spent the most per-pupil and the districts that spent the least per-pupil on instructional salaries and total instructional compensation.
2. Range difference between the 2000 fiscal year and the 2005 fiscal year indicated more inequity existed in the 2005 fiscal year than in the 2000 fiscal year in both instructional salaries and total instructional compensation.
3. Restricted range calculations showed more equity in salary distribution than compensation and a decrease in equity from fiscal year 2000 to fiscal year 2005.
4. Federal range ratio indicated more equity in salary distribution than in compensation and a decrease in equity from fiscal year 2000 to fiscal year 2005.
5. Measures of central tendency such as mean, standard deviation, variance and coefficient of variation all illustrated large variances between salaries and

- compensation and also fiscal years 2000 and 2005. This indicated greater equity in salaries than compensation and also greater equity in 2000 than 2005.
6. Based on horizontal equity measures, salaries were consistently more equitably distributed than compensation.
 7. Based on horizontal equity measures, fiscal year 2000 distributions for both instructional salaries and total instructional compensation were consistently more equitable than fiscal year 2005.
 8. The Gini coefficient indicated smaller values for salaries than compensation for both fiscal years 2000 and 2005, thus indicating that although there was not total wealth neutrality, the problem did not significantly increase either by moving from salaries to compensation or changing fiscal years.
 9. The McLoone index revealed larger values when comparing 2000 instructional salaries to instructional compensation, thus indicating an increase in the significance of property wealth to dispersement of these resources. The 2000 instructional salaries were distributed more equitably in relation to property wealth than instructional compensation.
 10. Based on the correlation and regression analysis, salaries had a smaller correlation to wealth than compensation, thus indicating greater wealth neutrality for salaries than compensation.
 11. Based on the correlation and regression analysis, fiscal year 2000 illustrated a smaller correlation to wealth than fiscal year 2005, thus indicating greater wealth neutrality for fiscal year 2000 than 2005.

12. Based on correlation and regression analysis, socioeconomic values were smaller for salaries than compensation and also smaller for fiscal year 2000 than 2005. This indicated socioeconomic status was more related to the distribution of compensation than salaries and also more related to the fiscal year 2005 than 2000.
13. Based on regression analysis, the proximity values showed greater significance to the distribution of resources in 2005 than 2000.
14. Based on correlation and regression analysis, the percentage of Caucasians proved insignificant in the distribution of either salaries or compensation in both fiscal years 2000 and 2005.

Consistently, salaries proved to be more equitably distributed than compensation. Salaries were also more wealth neutral than compensation. Both salaries and compensation were more equitably distributed and wealth neutral in 2000 than 2005. Assessed valuation, socioeconomic status, and proximity all affected the distribution of instructional salaries and total instructional compensation. The percentage of Caucasians in a district proved to have no influence on the distribution of these resources.

Implications

The section above indicated discrepancies in the equitable distribution of salaries and compensation in the state of Oklahoma. These discrepancies indicated both implications for both research and practice.

Implications for research:

1. Governor Brad Henry of Oklahoma made a commitment to increase teacher salaries in Oklahoma¹⁸ and bring Oklahoma salaries closer to the average regional teacher salaries. This goal was to be accomplished over a four year period. In 2006 teachers received a \$3000 pay increase which was the first year of the four year goal. An equity study based on teacher salaries during this period is warranted to evaluate the effect of pay increases on the equitable distribution of these resources.
2. This study investigated the percentage of Caucasians and it proved to have no effect of the distribution of instructional salaries and total instructional compensation. A study investigating the percentage of minorities rather than the percentage of Caucasians might offer insight into the problem of the equitable distribution of resources.
3. A study that includes the impact of federal funds on the distribution of resources is merited. Some schools in Oklahoma receive a significant amount of federal dollars that are used to support instructional salaries and total instructional compensation. The impact of these federal dollars on the distribution of resources might offer insight on the impact of federal funds and equity issues in the state of Oklahoma.
4. A case study involving two schools with total different abilities to fund resources is merited. The impact of these resources in providing research-based instructional strategies that increase student learning could be investigated in relation to improved student achievement.

Implications for practice:

If Oklahoma is serious about equity for all students, an attempt to attain equity in instructional salaries and total instructional compensation could produce inequities in other areas. However, the following implications are based on the present inequities that exist in instructional salaries and total instructional compensation.

1. Legislative leaders across the state of Oklahoma should use the data from this study to validate that unequal educational funding exists in Oklahoma and this unequal funding jeopardizes students in Oklahoma public schools the right to equal access of funding thus influencing the students rights to equal educational opportunities.
2. The Oklahoma court system might use information in this study to validate that unequal educational resources exist in Oklahoma and make rulings that make educational opportunities more equitable for all students who attend public schools in Oklahoma.
3. Oklahoma citizens who are the taxpayers of Oklahoma should also use information in this study to demand that their tax dollars not be used to give one group of students an advantage over another when educational opportunities are considered.
4. Studies such as this investigating instructional salaries and total instructional compensation should be replicated in other states to possibly expose the unequal access to the largest educational resource. Identification of this type of unequal access to spending could mean unequal educational opportunities to children who attend public schools in other states.

5. Legislative leaders, especially from the districts who are in the bottom half of the per-pupil spending for instructional salaries and total instructional compensation, could use this study as an indication that other funding formulas should be investigated in Oklahoma in order for equal resource accessibility to be available to all children who receive an education in the Oklahoma public schools.
6. Legislative leaders should also use this study to validate that the property wealth of a district is a determining factor in the educational opportunities that a child who is educated in Oklahoma public schools receives. This gives some students an unfair educational advantage to others.
7. Teachers who are employed in Oklahoma public schools must demand more equitable treatment. Some teachers in our public schools do not receive the same amount of compensation. An enforcement of the state salary schedule by all districts in Oklahoma could resolve this problem.
8. Administrators must consider the equitable distribution of instructional salaries and total instructional compensation an important issue. Districts that are poorer have less money to spend on resources and this indicates that it could affect class size and influence a child's ability to receive a good education.

Educational funding remains an immense responsibility for the state. No one interested in the equal treatment of individuals would purposely give one individual an educational advantage over another due of problems with funding formulas. Only in studies such as this can one find discrepancies in funding brought to the attention

of individuals who can make the public aware of the inequitable problems that exist in our educational funding. The suggestions in the preceding section offer only a beginning way to investigate some of the challenges that face Oklahoma and other states when striving to provide equitable educational funding for all of its students.

Summary

The information presented in chapter five gave a realistic picture of the inequitable distribution of resources occurring in Oklahoma's educational finance system. Every child, who attended public schools in Oklahoma, deserved equal access to educational resources. This study concentrated on the resources of instructional salaries and total instructional compensation. As the public education system in Oklahoma strives to provide every child educated with not only the best education, but also equal access to the resources that will afford that caliber of education, citizens and legislators must be willing to make the difficult decisions to insure this will happen.

This study directly affects three different groups who reside in Oklahoma. The results of the study should be of interest to taxpayers in Oklahoma because the inequity identified in this research suggested that inequity also exist for the people who support public education with their tax dollars. The teachers in the state of Oklahoma should also realize some teachers, not only receive more pay, but also have more resources to help with the instruction of students. The students in Oklahoma public schools receive different amount educational dollars and this has been proven to impact student achievement.

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Appendix A.

2000 Correlations

Correlations

		VALADM	PCTCAUC	PCTFRLU NCH	SALADM
VALADM	Pearson Correlation	1	.191(**)	.024	.590(**)
	Sig. (2-tailed)		.000	.574	.000
	N	544	543	543	543
PCTCAUC	Pearson Correlation	.191(**)	1	-.008	-.024
	Sig. (2-tailed)	.000		.861	.584
	N	543	543	543	542
PCTFRLUNCH	Pearson Correlation	.024	-.008	1	.225(**)
	Sig. (2-tailed)	.574	.861		.000
	N	543	543	543	542
SALADM	Pearson Correlation	.590(**)	-.024	.225(**)	1
	Sig. (2-tailed)	.000	.584	.000	
	N	543	542	542	543

** Correlation is significant at the 0.01 level (2-tailed).

Correlations

		VALADM	PCTCAUC	PCTFRLU NCH	COMPADM
VALADM	Pearson Correlation	1	.191(**)	.024	.621(**)
	Sig. (2-tailed)		.000	.574	.000
	N	544	543	543	542
PCTCAUC	Pearson Correlation	.191(**)	1	-.008	-.025
	Sig. (2-tailed)	.000		.861	.557
	N	543	543	543	541
PCTFRLUNCH	Pearson Correlation	.024	-.008	1	.230(**)
	Sig. (2-tailed)	.574	.861		.000
	N	543	543	543	541
COMPADM	Pearson Correlation	.621(**)	-.025	.230(**)	1
	Sig. (2-tailed)	.000	.557	.000	
	N	542	541	541	542

** Correlation is significant at the 0.01 level (2-tailed).

Appendix B.

2005 Correlations

Correlations

		VALADM	PCTCAUC	PCTFRLU NCH	SALADM
VALADM	Pearson Correlation	1	.238(**)	-.125(**)	.666(**)
	Sig. (2-tailed)		.000	.004	.000
	N	540	539	539	539
PCTCAUC	Pearson Correlation	.238(**)	1	-.575(**)	.020
	Sig. (2-tailed)	.000		.000	.640
	N	539	539	539	539
PCTFRLUNCH	Pearson Correlation	-.125(**)	-.575(**)	1	.237(**)
	Sig. (2-tailed)	.004	.000		.000
	N	539	539	539	539
SALADM	Pearson Correlation	.666(**)	.020	.237(**)	1
	Sig. (2-tailed)	.000	.640	.000	
	N	539	539	539	539

** Correlation is significant at the 0.01 level (2-tailed).

Correlations

		VALADM	PCTCAUC	PCTFRLU NCH	COMPADM
VALADM	Pearson Correlation	1	.238(**)	-.125(**)	.668(**)
	Sig. (2-tailed)		.000	.004	.000
	N	540	539	539	539
PCTCAUC	Pearson Correlation	.238(**)	1	-.575(**)	-.011
	Sig. (2-tailed)	.000		.000	.801
	N	539	539	539	539
PCTFRLUNCH	Pearson Correlation	-.125(**)	-.575(**)	1	.249(**)
	Sig. (2-tailed)	.004	.000		.000
	N	539	539	539	539
COMPADM	Pearson Correlation	.668(**)	-.011	.249(**)	1
	Sig. (2-tailed)	.000	.801	.000	
	N	539	539	539	539

** Correlation is significant at the 0.01 level (2-tailed).

Appendix C.

2000 Salary Regression

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	PCTFRLUNCH, VALADM, PROXIMITY , PCTCAUC(a)	.	Enter

a All requested variables entered.

b Dependent Variable: SALADM

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.655(a)	.429	.425	383.57698

a Predictors: (Constant), PCTFRLUNCH, VALADM, PROXIMITY, PCTCAUC

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59343599.418	4	14835899.854	100.834	.000(a)
	Residual	79009508.251	537	147131.300		
	Total	138353107.669	541			

a Predictors: (Constant), PCTFRLUNCH, VALADM, PROXIMITY, PCTCAUC

b Dependent Variable: SALADM

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	1823.709	79.353		22.982	.000
	VALADM	.012	.001	.608	17.953	.000
	PROXIMITY	90.576	35.658	.085	2.540	.011
	PCTCAUC	-3.416	.839	-.138	-4.070	.000
	PCTFRLUNCH	5.589	.828	.220	6.747	.000

a Dependent Variable: SALADM

Appendix D.

2000 Compensation Regression

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	PCTFRLUNCH, VALADM, PROXIMITY , PCTCAUC(a)	.	Enter

a All requested variables entered.

b Dependent Variable: COMPADM

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.685(a)	.469	.465	392.5562335 71658900

a Predictors: (Constant), PCTFRLUNCH, VALADM, PROXIMITY, PCTCAUC

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	73033987.006	4	18258496.752	118.484	.000(a)
	Residual	82597812.533	536	154100.397		
	Total	155631799.539	540			

a Predictors: (Constant), PCTFRLUNCH, VALADM, PROXIMITY, PCTCAUC

b Dependent Variable: COMPADM

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t		Sig.
		B	Std. Error	Beta	B	Std. Error	
1	(Constant)	2069.728	81.360		25.439		.000
	VALADM	.014	.001	.643	19.672		.000
	PROXIMITY	82.031	36.503	.073	2.247		.025
	PCTCAUC	-3.922	.860	-.149	-4.560		.000
	PCTFRLUNCH	6.064	.849	.225	7.138		.000

a Dependent Variable: COMPADM

Appendix E.

2005 Salary Regression -

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	PCTFRLUNCH, VALADM, PROXIMITY , PCTCAUC(a)	.	Enter

a All requested variables entered.

b Dependent Variable: SALADM

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.748(a)	.559	.556	481.67766

a Predictors: (Constant), PCTFRLUNCH, VALADM, PROXIMITY, PCTCAUC

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	157295430.492	4	39323857.623	169.490	.000(a)
	Residual	123895141.006	534	232013.373		
	Total	281190571.498	538			

a Predictors: (Constant), PCTFRLUNCH, VALADM, PROXIMITY, PCTCAUC

b Dependent Variable: SALADM

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	1053.158	153.585		6.857	.000
	VALADM	.014	.001	.681	22.704	.000
	PROXIMITY	145.777	44.822	.096	3.252	.001
	PCTCAUC	2.486	1.276	.070	1.949	.052
	PCTFRLUNCH	14.493	1.466	.349	9.886	.000

a Dependent Variable: SALADM

Appendix F.

2005 Compensation Regression -

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	PCTFRLUNCH, VALADM, PROXIMITY , PCTCAUC(a)	.	Enter

a All requested variables entered.

b Dependent Variable: COMPADM

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.754(a)	.568	.565	512.42661

a Predictors: (Constant), PCTFRLUNCH, VALADM, PROXIMITY, PCTCAUC

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	157295430.492	4	39323857.623	169.490	.000(a)
	Residual	123895141.006	534	232013.373		
	Total	281190571.498	538			

a Predictors: (Constant), PCTFRLUNCH, VALADM, PROXIMITY, PCTCAUC

b Dependent Variable: SALADM

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	1053.158	153.585		6.857	.000
	VALADM	.014	.001	.681	22.704	.000
	PROXIMITY	145.777	44.822	.096	3.252	.001
	PCTCAUC	2.486	1.276	.070	1.949	.052
	PCTFRLUNCH	14.493	1.466	.349	9.886	.000

a Dependent Variable: SALADM