FUNDING, ACHIEVEMENT AND EQUITY IN OKLAHOMA'S PUBLIC SCHOOLS: DOES MONEY MATTER?

By

KENNETH ELLINGER

Bachelor of Arts
East Central University
Ada, Oklahoma
1981

Master of Arts
Vanderbilt University
Nashville, TN
1986

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF EDUCATION
December, 1992

FUNDING, ACHIEVEMENT AND EQUITY IN

OKLAHOMA'S PUBLIC SCHOOLS:

DOES MONEY MATTER?

Thesis Approved:

Thesis Adviser

Dean of the Graduate College

ACKNOWLEDGMENTS

When a doctoral odyssey involves two schools and eleven years, there are so many people to thank and still leave out some who have made a difference. I have been truly blessed by a great many supportive friends and family members. This work is dedicated to them all because I can't bring myself to single anyone out. I just know that none of this would be possible without them and without Jonathan Kozol. His awesome book Savage Inequalities touched me and immediately gave me a topic.

There are two people who do stand out above the rest, however. My parents, Wayne and Jeanne Ellinger, know the importance of emotional and financial support. As two veterans of the doctoral wars, they gave both generously at times when it was most needed. Dad, your surprise Stillwater visit and tangible show of support was a real difference-maker at a critical moment. You must be psychic! Mom, your proofreading defused a very "tense" situation! I appreciate the use of your house as my "base of operations" the past three years. It's been the closest thing I have had to a "home" (and I will clean my room-"tomorrow").

Among my friends, one stands out as the biggest influence on me in this process. Lou Watkins has been my undergraduate teacher and adviser, my colleague and department chair, and my fellow doctoral student and comp taker. But always she has been my friend and mentor. It was at her suggestion that I investigate the O.S.U.

College Teaching program, and her presence in it assured me of its credibility. Lou, I cannot possibly express my appreciation to you, Wes, and Martha. Thanks!

Many friends from outside the OSU campus must be briefly thanked: William and Deidre Thomas, and my godchildren, Danielle, Christopher, and Philip, have been a constant source of love and encouragement; Frances Oneal was my best friend at Vanderbilt at a time when I needed one desperately--she will never know how much her support meant; Craig and Amy Groeschel have been in my corner when it counted--my association with Craig has been among the most rewarding of my life; Tracy, Marshall, and Miranda Behre gave my life in Stillwater a much stronger sense of purpose and meaning--I am thankful for their love and support; Jeff and Melanie DeFehr have been with me through good times and bad--Jeff is still my best friend after all these decades; Professor Birkby--Thanks!; Terry Woodward: thanks for giving me all those summer tennis jobs and being my doubles partner through the years--let's practice next summer and win for a change!; and, thanks to the Nelson and Hamilton families (and four of the neatest kids I have ever met!) for giving me the greatest gift I ever received--the opportunity to meet the love of my life!

My OSU professors and friends must be acknowledged and thanked as well. My committee, headed by Tom Karman and Mike Hirlinger, and assisted by Steve Katsinas and Bob England, was most helpful and supportive with the conceptualization and criticism of my work. They share my concern for equity in school finance, and they

shepherded me through this a-"maze"-ing dissertation process. Other OSU buddies to whom I'm grateful are Kay Porter (a great typist under the gun); Cris Phillips, Tommy Raulston, Chao, and the other Iba Hall lunatics; Steve Robinson, Rhonda Johnson; Ken McKinley and the other loonies in 102 Gundersen; Theda, Brenda; Rilla, Dale, and the third floor crazies; Adrienne Hyle (a cool boss!); Dot Finnegan (a great impromptu tutor); Davey Wright (my former pupil and current collaborator); and all the other teachers, students, and friends who have touched my life through the years.

I am extremely indebted to the five people I interviewed at the State Capitol. House Speaker, Glen Johnson, House Education Committee Chair, Carolyn Thompson, and House staff member, Debbie Terlip were all gracious and informative. However, it was Jerry Johnson and Pat Crown, of the Senate and House Fiscal staff, respectively, that came through with several interviews, memos, and even a class paper for my enlightenment. Their helpful attitudes will never be forgotten!

Finally, I must express my gratitude to my fiancee', Vanessa Borges, and her daughter, Ericka. They have shown me the beauty and joy of unconditional love and acceptance--and thrown my life for a major loop in the process! They gave my life a sense of meaning and purpose that had been missing for several years, and they have completely restored my faith in the desirability of marriage and family. I love them both more than they will ever know!

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION TO FUNDING, ACHIEVEMENT, AND EQUITY

Statement of the Problem

The United States is unique in the way it organizes and finances the government-subsidized education of its children. Rather than being operated primarily by the national government, public education is controlled and financed almost exclusively by state and local authorities. While this gives parents and state and local taxpayers considerable authority over the operation and financing of their schools, it has also led to the problem of significant disparities in the funding and quality of education provided to America's children. In the past twenty-five years, these inequalities have increasingly caught the attention of state legislatures and both state and federal courts. Compounding the equity problem is the disagreement among policymakers and the public about the relationship of these funding disparities to student achievement. These related problems are the focus of the present study.

"Excellence vs. Equity" in Education

There has been a flurry of activity since the late 1960's at the state level regarding the issue of school finance equity. State

courts in over 30 states and most state legislatures have discovered surprisingly large funding inequities in public school districts. Debates over inequities have taken on increased visibility with the nationwide focus on educational excellence since the early 1980's. In fact, it was the excellence vs. equity argument that fueled this debate, with some experts and taxpayers alike questioning whether an economically-ravaged America can afford to finance educational excellence for **all** of its children. Many others wonder if the nation can afford to settle for anything less.

With the perceived and empirically demonstrated life advantages stemming from a superior education, it should not be surprising that educational equity and excellence are in conflict. James Coleman, author of the famous "Coleman Report" on equal educational opportunity that was authorized by the 1964 Civil Rights Act, described the dilemma:

> The history of education since the industrial revolution shows a continual struggle between two forces: the desire by members of society to have educational opportunity for all children, and the desire of each family to provide the best education it can afford for its own children . . . If there is to be educational opportunity for all children, then a child's education must not depend on his family's economic resources. But if a family is to be able to provide its children with the best education it can afford, then it must be able to employ its economic resources to do so. These two requirements are in direct opposition (Coons et al., 1970, p. vii).

As Chester Finn, former Assistant Secretary of Education in the Reagan Administration, has written:

> In the debate about public schools, equity must not be seen as a chapter of the past but as the unfinished agenda of the future. . . . But to push for excellence in ways that ignore the needs of less-privileged students is to undermine the future of the nation. Clearly,

> equity and excellence cannot be divided (Camp et al., 1990, 274).

Yet, as Camp, Thompson, and Crain (1990, p. 275) concluded in their analysis of inter-district equity, "the balance of equity is currently threatened by excellence reform, and the implications for educational funding are significant, as proponents seek to establish that excellence reform has had a lasting effect on student achievement."

Europe has dealt with the excellence vs. equity debate by establishing dual public school systems that separate the children of the economic elite into academically-oriented schools and the children of the masses into practical schools that terminate early (Coons et al., 1970). In the United States, eminent school finance expert John Coons observed that other methods have arisen whereby persons with financial resources can use them to benefit their own children without spreading them thin over everyone else's children as well. The automobile and the interstate highway system has allowed residential areas to be economically (and in essence racially) homogenous; and, with local financing of education, the wealthy in one district can confine their spending to their own children and to those of other families paying equally. The less wealthy are left to finance their own children's education with a reduced set of resources. The result, predictably enough, is very destructive of the goal of equal educational opportunity (Coons et al., 1970). As we shall see, some states have done much to remedy this situation, while many others have done little or nothing. Incredibly, some have even used state appropriations to exacerbate

and institutionalize the resource differences between poor and wealthy school districts.

Research Questions

It is the dual concerns of student achievement and school finance equity that this research addresses. The main focus of the empirical research design is to examine the influence of money in student achievement. Does increased school funding lead to improvements in student test scores when the effects of other variables, such as family wealth and the race of the student, are controlled? If money indeed improved student learning, then the movement toward greater equity in school finance would take on more urgency. In light of the mixed results that have been reported by scores of studies in this area (see Review of Literature in Chapter 2), the courts have tended to operate on the assumption that money does matter (Camp et al., 1990). Indeed, if money does not matter, what is the point of increasing the funding of any school? Likewise, if money makes no difference, why have wealthy school districts fought so hard to maintain their economic advantage? Even many of the doubters of the importance of school resources take the position of Coons, Clune, and Sugarman in their seminal work Private Wealth and Public Education (1970): ". . . the poor should have the same right as the rich to be disappointed by the results of school spending" (Camp et al., 1990, p. 281).

School finance equity and the determinants of student achievement are distinct, yet closely related, subjects. Finance

experts argue interminably about how equity should be achieved and measured, while at the same time arguing about whether even significantly different funding levels make a measurable difference in how well students learn. In any case, all agree that many states allow substantial differences to exist among districts in per-pupil revenues and expenditures. As a result, the fundamental research questions in this study are these:

1. Does money matter when it comes to student achievement?
2. If money does matter, what efforts could be made to more closely equalize the funding between rich and poor school districts?

As a practical matter of public policy, these two questions raise many more questions. How much obligation does a state legislature have, if any, to remedy funding disparities created by the differences in taxable wealth among communities? To what degree, if any, should state funding formulas give subsidies to some districts and none to others as a way of redistributing tax dollars? Indeed, should states "recapture" excess revenues from wealthy districts and distribute the money to poorer districts? How much variation in funding, if any, should the state tolerate? To what extent does per-pupil revenue alone determine educational opportunity and student achievement? And what about the difference in the cost of educating different types of students in different parts of a state? These intensely political questions have been answered differently by every state. Or perhaps more accurately, some of these questions have not been considered by the states at all. Yet virtually all state constitutions assume the

responsibility for the provision of common education. The political stakes are very high, for most parents want the government to provide the best possible education for their children. Elected officials are very interested because elections at the state and local level are obviously influenced by the candidate's position on public education finance.

Purposes and Outline of This Study

This study explores most of these questions by examining the statistical relationship between money, along with several other variables, and student achievement test scores for all independent (i.e., those that have a high school) school districts (443 districts in 1990, 436 in 1991) in Oklahoma during the past two school years. The study also examines the school finance mechanism in Oklahoma as it relates to the equitable funding of the state's public school districts. School finance equity and the determinants of student achievement need to be examined jointly because the equity question becomes more germane if there is a statistically significant relationship between per-pupil revenues and student achievement. While a number of studies find no statistically significant relationship between school wealth and test scores, many others do find such a relationship. There is no longer much doubt that factors like parental education, parental wealth, student motivation, and a student's innate ability have the strongest effects on test scores. However, a number of studies examined in Chapter II find money (and the resources it can buy for a school)

to have significant effects on student achievement *if it is spent on inputs that matter.*

The major purpose of this research is to examine factors that influence student achievement in Oklahoma. A multiple regression analysis of six independent variables (that research suggests have an influence on student achievement test scores) was undertaken using data from every independent school district in Oklahoma over the past two school years (1989-90 and 1990-91). The variable of greatest interest is obviously the total per-student revenue that each district receives each year. Other variables included in the model are parental wealth (operationalized by the percentage of students eligible for the federal free and reduced-price lunch program), the percentage of minority students in the district, and three district teacher characteristics: average salary, average years of experience, and percentage with advanced degrees.

Another important rationale for this research is to examine the status of school finance equity in Oklahoma. Very little published research exists that analyzes the impact of Oklahoma's school aid formula on the equitable distribution of public revenues to school districts. This critical analysis assesses the degree to which progress has been made toward equity, how equity is defined and measured, and obstacles to further equity efforts. Finally, policy recommendations are made that could help Oklahoma achieve the elusive goal that has been realized in several other states: namely, that public education financing should be solely a function of the entire state's wealth rather than that of the local

community.

The remainder of Chapter I is an introduction to the basic concepts of school finance equity, a definition of key terms in the equity literature, a brief look at finance inequities around the country, and a selected review of the many legislative and judicial battles that have been fought to achieve greater equity in public school financing. Chapter II is a review of the literature that analyzes the effect of money and other school inputs on the major output of any school: student learning (typically measured by norm-referenced achievement test scores). Chapter III describes the Oklahoma Indicators research design and discusses the results and implications of the multivariate analysis previously described in this chapter. Chapter IV focuses on school finance equity in Oklahoma, with special attention given to areas of existing inequities. Finally, Chapter V summarizes and discusses the findings and implications of the entire study, with special emphasis on policy prescriptions concerning school finance equity in Oklahoma and their likely political acceptability.

Definition of School Finance Equity Terms

It is important to understand the parameters of the equity debate in school finance. This has been one of the hottest legislative and judicial issues to be debated and adjudicated in this country over the past twenty-five years. While "equality" is often used synonymously with "equity" in this debate, the terms are not interchangeable. Equity is a synonym for fairness, and

virtually no one thinks that it is fair for all children to be treated "equally" by the school finance system. Equity expert Arthur Wise emphasized in his seminal work Rich Schools, Poor Schools that if his book was read as a plea for "horizontal equity" (i.e., absolute funding equality on a per-student basis), then he failed in communicating his concerns regarding the American system of school finance (Wise, 1968). Clearly, some children are needier than others and deserve greater resources. The most obvious examples are physically and mentally handicapped students. In this instance, the treatment is equitable without actually being equal. In school finance jargon, treating unequals unequally is called "vertical equity" (Berne and Stiefel, 1984).

Vertical equity is operationalized in many states by assigning "weights" in the state aid formula to "special" students who are in need of either compensatory or accelerated education. Among these students in Oklahoma, for example, are the gifted and the economically disadvantaged as well as the more traditional "special education" (i.e., physically and mentally handicapped) students. Vertical equity also means that different districts get treated differently by the state formula. In Oklahoma, independent districts receive extra funds because secondary education is more costly per student than primary education. Those districts in isolated rural areas, and thus not likely candidates for consolidation, get an "isolation" weight. There is also additional state funding made available to those districts which employ more experienced teachers with advanced degrees. All of these are

examples of vertical equity, yet they do not treat all students or districts "equally."

The other term equity theorists use in their advocacy of finance reforms is "fiscal neutrality." This concept simply holds that there should be no relationship between local taxable wealth and educational resources available to a school. In other words, funding should be a function of the needs of the school and the tax effort rather than the tax base of the district (Johnson, 1991). Educational opportunities should not be a function of either the wealth of the parents or the local community, but rather of the state as a whole. As pioneering equity expert Arthur Wise puts it, educational opportunity should not be determined "due to the accident of birth" (Wise, 1968). These are the terms that frame the equity debate, and they are not without controversy.

The concept of fiscal neutrality throughout a state contradicts the long-held tradition in this country of local control and funding of schools. Traditionally, parents who value education and can afford to be selective choose to live in communities or neighborhoods that are known for good schools. These are usually the more affluent areas where the schools enjoy much financial support. In this respect, wealth begets wealth. Students from advantaged backgrounds enjoy the further advantage of well-funded schools. Obviously, for the poor it is just the opposite. In many respects, the public school system goes a long way toward replicating the educational and economic status quo. Fiscal neutrality poses a real threat to that tradition.

A very real danger from the strict implementation of fiscal neutrality is the abandonment of the public schools by its wealthier patrons. If many affluent parents do not perceive that their children are receiving a public education superior to that of the masses, they are likely to place their children in private schools and oppose any efforts to increase taxes to support the public schools. The result would be an even more elitist and inequitable educational system than the one that persists today. Many education finance experts argue that a delicate balance must be struck to avoid just such a scenario.

The American public educational philosophy historically has been that schools should first be financed with local revenues and only then supplemented with state aid. Most state formulas made some effort (although that effort varied widely among states) to provide proportionally more aid to the poorest districts. The problem in Oklahoma, as in most other states, is that the state aid formula does not equalize all education revenues. There are some local revenues that are not "chargeable" (i.e., deducted from the calculation of a district's financial need) against the state aid formula, and districts with significant such revenue could easily double or triple the state's average per-student funding level. This is a problem that is not unique to Oklahoma. Statistics from several states around the country will illustrate the degree of that inequity.

The Magnitude of School Finance Inequity

As Jonathan Kozol's Savage Inequalities graphically

demonstrates, it is not difficult to find examples of the "haves" and "have nots" in the world of education finance. An example from one New York City grade school:

> Beyond the inner doors a guard is seated. The lobby is long and narrow. The ceiling is low. There are no windows. All the teachers that I see at first are middle-aged white women. The principal . . . tells me that the school's 'capacity' is 900 but that there are 1,300 children here. . . . Class size in the school goes 'up to 34,' (I later see classes, however, as large as 37) . . . Textbooks are scarce and children have to share their social studies books. The principal says there is one full-time pupil counselor and another who is here two days a week: a ratio of 930 children to one counselor. The carpets are patched and sometimes taped together to conceal an open space. . . . Two first grade classes share a single room without a window, divided only by a blackboard. Four kindergarten and one sixth grade class of Spanish-speaking children have been packed into a single room in which, again, there is no window. A second grade bilingual class of 37 children has its own room but again there is no window. . . The library is a tiny windowless and claustrophobic room. I count approximately 700 books. Seeing no reference books, I ask a teacher if encyclopedias and other reference books are kept in the classrooms. 'We don't have encyclopedias in classrooms,' she replies. 'That is for the suburbs' (Kozol, 1991, pp. 85-87).

This kind of school poverty is hardly an inner-city New York phenomenon. School districts in Texas had a per-pupil expenditure range of $2,112 to $19,333 in 1986, the year previous to the invalidation of their school finance system by Judge Harley Clark. The minimum foundation that the state guaranteed to all districts was $1,477 (Kozol 1991). The tax bases of districts ranged from $20,000 to $14 million per pupil. Local tax rates varied from $0.09 to $1.55 per $100 of assessed valuation (Wood et. al., 1989). The degree of inequity in Texas was summed up as follows:

> The 150,000 students living in the state's poorest districts receive an education costing half that of

> their 150,000 wealthiest counterparts. . . This inequity does not result from lack of effort by any of the residents of the poorer districts; the taxpayers supporting the 150,000 students at the bottom face tax rates double those of taxpayers at the top (Gendler and Wise, 1989, p. 14).

One way that wealthy patrons, geographically clustered within an otherwise poor urban area, can operate their own public schools essentially as a private school is to establish their own school district. Again, an example from Texas:

> Alamo Heights, he told me, is a part of San Antonio. 'It's enclosed by San Antonio, but operated as a separate system. Dallas has a similar white enclave known as Highland Park, enclosed on four sides by the Dallas schools but operated as a separate district. We call these places "parasite districts" since they give no tax-support to the low-income sections'. . . .
>
> In 1988, Alamo Heights spent an average of $46 per pupil for its "gifted" program. The San Antonio Independent District . . . spent only $2 for each child in its "gifted" program (Kozol, 1991, p. 224).

Yet, this is hardly an unusual phenomenon. All over the United States school districts tax themselves at a high rate only to spend at a low rate, with similar results. In New Jersey, the East Orange school district has an average assessed valuation only 21% of the state average, yet its tax effort has been as high as 144% of the state average for each of the past ten years. Still, the district is able to spend less than $3,000 per year per student, well under half of the state average (Gendler and Wise, 1989). In Kentucky, county property assessments vary from 12.5% to 33% of fair market value even though some counties have far more valuable property than others. The result is that district per-pupil revenues range from $1,767 to $4,361 (Wood et. al., 1989).

Brief Judicial History of School Finance Equity

The battle for equity in public school finance is being, and has been, fought frequently in the courts. Since the landmark U.S. Supreme Court decision in San Antonio Independent School District vs. Rodriguez rejected the legal argument that unequal expenditures violated federal equal protection provisions, the battle has been exclusively fought in the state courts (Long, 1983). The Court ruled in Rodriguez that there was no "compelling state interest" in maintaining equal educational expenditures. Also, there was no "suspect class" based on wealth, so disadvantaged school children were not eligible for the Fourteenth Amendment "equal protection" afforded to a suspect class like racial minorities (Brown, 1991).

Justice Lewis Powell, writing for the majority, noted that the Texas plaintiffs "failed to demonstrate that the Texas law operates to the peculiar disadvantage of any class fairly definable as indigent" (Flygare, 1983). Powell wrote that even if a strong relationship were discovered between poor neighborhoods and poor school districts (and there is often such a strong relationship), there would still not be a suspect class for equal protection purposes because there had not been an "absolute deprivation of education." The allegation in San Antonio was simply that there was a poorer educational quality in the poor districts (Flygare, 1983).

Justice Powell went on to note that education "is not among the rights afforded explicit protection under the U.S. Constitution,"

and while the Court acknowledged that there was some link between education and the ability to exercise the fundamental rights to speech and voting, there was no proof that poor districts were failing to provide the basic skills needed to exercise those rights (Flygare, 1983). The Supreme Court in Rodriguez made it clear that the only standard a state must meet was to ensure that there was no "absolute deprivation" of education. As a result of this decision, the battle for greater equality of funding within state boundaries has become exclusively the province of the state courts. In fact, the dissenting opinion in Rodriguez emphasized that plaintiffs should be encouraged to use state courts to pursue their equity claims (Gendler and Wise, 1989).

Litigation that challenges the right of state governments to use whatever means it wishes to allocate tax revenues to schools is of recent origin. The earliest decision handed down in any school finance equal protection case was McInnis v. Ogilvie (1969). In this case, the U.S. District Court in Illinois denied the plaintiffs' claim that public school revenues be re-allocated in proportion to student "needs." The Court claimed it could not construct an objective measure of a group of children's educational needs (Guthrie et al., 1988). Every subsequent case, in either state or federal court, modified its argument to avoid this problem. The new legal principle became "fiscal neutrality," a concept developed in 1969-70 by John Coons in Private Wealth and Public Education and Arthur Wise in Rich Schools, Poor Schools. As noted earlier, fiscal neutrality holds that "the quality of a

child's schooling shall not be a function of wealth, other than the wealth of the state as a whole" (Guthrie et al., 1988).

The first state court decision in U.S. history to challenge successfully the constitutionality of inequalities in district spending was the landmark 1971 decision in Serrano v. Priest that dramatically changed the method of financing California's public schools. The California Supreme Court adopted the fiscal neutrality approach but left it to the Legislature to devise the final solution. The California legislative plan that was adopted held that so long as schools can raise similar amounts of revenue with similar tax rates, the various districts were allowed to tax and spend for schools at dramatically different levels through greater tax effort (Benson, 1991). Moreover, large city districts had the freedom to allocate resources within the district in any way they wished. Twelve years after Serrano was first decided by the California Supreme Court, "95.6% of all students attend districts with a per-pupil revenue limit within an inflation-adjusted band of $238 of the statewide average for each district type" (Gendler and Wise, 1989, p. 15). While Serrano did bring about more equity and was truly a groundbreaking achievement (prompting over thirty similar cases in other states), it still allowed inequities to persist in California (Long, 1983).

There have been a number of influential state court decisions since Serrano. Minnesota, Texas, New Jersey, Wyoming, Kentucky, Kansas, Connecticut, and Idaho are among the jurisdictions in which the highest state court has ruled that education finance schemes

have violated either the equal protection or education clauses of their state constitutions (Guthrie et. al., 1988). As of 1990, the sum total of states that had their entire system of school finance declared unconstitutional by state Supreme Courts was ten. These states are Arkansas, California, Connecticut, Kentucky, Montana, New Jersey, Texas, Washington, West Virginia, and Wyoming. In addition, the imminent threat of an adverse court decision from litigation already filed in Kansas and Colorado was considered instrumental in the enacting of new finance schemes by legislatures in those states. There is no question that some state legislatures have been persuaded to reform their school finance schemes to pre-empt the probability that a court challenge would be mounted (Salmon and Alexander, in Verstegen and Underwood, 1990).

New Jersey's Supreme Court, for instance, found in Robinson v. Cahill that New Jersey's inequitable funding mechanism violated that state's education clause mandate of a "thorough and efficient" public education. The Edgewood case in Texas, like Serrano, ruled that equal tax rates must yield equal expenditures. To the extent that this failed to happen through local taxes and the state aid formula, state subsidies would make up the difference. The Texas Supreme Court summed up the problem historically faced by the plaintiff schools: "Property-poor districts must tax high merely to spend low, while property-rich districts can tax low and spend high" (Benson, 1991, p. 10). The Court, of course, has to leave the ultimate remedy to the Texas legislature. The options are not particularly appealing. They include:

1. Assuming sole responsibility for education funding and distribution. This was the option chosen by the Legislature in California after Serrano.

2. Forcing rich districts to surrender the excess revenues they generated (called "recapture").

3. Setting upper limits on revenues per student (i.e., "revenue caps").

4. Consolidating school districts to equalize tax bases (Benson, 1991).

The most likely political result to come from this in Texas is that the Legislature will be compelled to raise taxes because it is less politically painful to redistribute from a larger pie. While this avoids the "leveling down" problem that is likely to drive wealthier parents toward private schools, raising taxes is always difficult--particularly in an economic downturn. In fact, the Texas Legislature has debated for almost ten years (including a 1992 special session called to address only this issue) without coming close to adopting a judicially-acceptable school finance scheme. The Legislature has simply been unwilling to either sharply raise taxes or recapture "excess" funds from wealthy school districts. And while the judge has publicly expressed his continued exasperation with the delay, it is unlikely that a judically-mandated solution is forthcoming. The result is that the courts have maintained jurisdiction in the case and the Legislature continues to struggle for a solution with no definitive end in sight.

A major problem with the fiscal neutrality conception upon which most equity arguments rest is the sometimes weak correlation between a poor school district and the concentration of poor people living in it. In addition, fiscal neutrality fails to account for cost differentials among districts. Ultimately, many argue that "the quality of education is not related in any simple way to tax rates" (Benson, 1991). Given the fact that some empirical studies indicate school funding levels do not play a statistically significant role in determining student achievement, it is unclear what the future holds for more equitable school finance mechanisms.

Summary

As noted above, the battle to equalize school funding has been raging for many years and in many different legislative and judicial forums. Examples of funding inequities are numerous and dramatic as well as infrequent and subtle. The various definitions of equity are complex and not easily comprehended by either voters or policymakers. The often uneasy relationship between state and local governments is further strained by the added involvement of the state in what has traditionally been a local responsibility for common education. Funding equity has further been eroded by the financial woes facing education in almost every state in recent years. But the overriding question in the equity debate is still "Does Money Matter?" when it comes to student achievement. It is to this question that we now turn.

CHAPTER II

LITERATURE REVIEW ON MONEY AND STUDENT ACHIEVEMENT

Research on factors that influence student achievement did not begin in earnest until the famous Equality of Educational Opportunity Survey of over 4000 elementary and secondary schools conducted by James Coleman and Ernest Campbell in the mid-1960's (Hanushek, 1986). The so-called "Coleman Report" was truly a landmark in the history of social science research. Commissioned in response to a mandate of the 1964 Civil Rights Act, it was the first time in U.S. history that the Congress had requested an empirical analysis from academic social scientists as a tool for creating social policy. While social scientists had been doing similar research for years, it had largely been on their own initiative, focused on problems that interested them, and generally without funding by the federal government (Coleman, 1990).

Section 402 of the 1964 Civil Rights Act directed the U.S. Office of Education to carry out a comprehensive survey on the lack of educational opportunity in America. Previous interaction between policymakers and social scientists had consisted of obtaining the advice of "wise men" in policy areas under consideration (Coleman, 1990). It was in breaking this tradition that the Coleman Report made its first contribution. In addition, the Coleman survey data

created a massive statistical base that made it possible for many replications of the study.

The Coleman Report was also the first piece of research to focus not only on school inputs (e.g., pupil expenditure, teacher characteristics, library books) but also on school outputs. The primary output was student learning, and the device used to measure student learning was the student achievement test. This methodological approach, favored particularly by economists, is called the education production function (Hanushek, 1986). This paradigm shift in the research methodology claims to answer the following questions:

> Which school inputs make for differences in school outputs? What difference does the school a child goes to make in the child's achievement? How much do schools overcome the inequalities with which children come to school (Coleman, 1990, p. 2)?

When the results of Coleman's survey were released in July of 1966, the response was swift and emotional, for the major finding proved to be a shock to those liberals who had championed the Civil Rights Act. The research finding, as summarized by the author, was as follows:

> . . . the closest portions of the child's social environment--his family and his fellow students--affect his achievement most, the more distant portion of his social environment--his teachers--affect it next most, and the non-social aspects of his school environment affect it very little (Coleman, 1990, p. 74).

Additional controversy came from Coleman's assertion that the physical or qualitative difference in schools attended by blacks and whites had been dramatically overstated--and in any event those distinctions (including money) did not make much difference in

student achievement anyway. Coleman's major findings sent a mixed message to Great Society liberals: On the one hand, government efforts to minimize qualitative differences between primarily black and white schools were being called into question. However, Coleman himself made it clear that the most effective strategy the U.S. government could use to encourage black student achievement was to accelerate busing as a means of surrounding black students with higher-achieving white students.

Coleman's ultimate conclusions disputed not only the importance of adequate school funding for student learning, but indeed the importance of schooling itself:

> The relatively small amount of school-to-school variation that is not accounted for by differences in family background indicates the small independent effect of variations in school facilities, curriculum, and staff upon achievement. . .
>
> Taking all these results together, one implication stands out above all: That schools bring little influence to bear on a child's achievement that is independent of his background and general social context; and that this very lack of an independent effect means that the inequalities imposed on children by their home, neighborhood, and peer environment are carried along to become the inequalities with which they confront adult life at the end of school. For equality of educational opportunity through the schools must imply a strong effect of schools that is independent of the child's immediate social environment, and that strong independent effect is not present in American schools (Coleman, et al., 1966, p. 325).

Coleman Report Questioned

A whole host of social scientists quickly questioned both the methodology and the interpretation of the Coleman Report. The Office of Education was quick to make the Coleman data widely

available and encouraged everyone who so desired to use them to conduct their own investigation or to replicate Coleman's study. The reaction to such an attack on education as the great social equalizer was predictably hostile. Frederick Mosteller and Daniel Patrick Moynihan convened a Harvard Faculty Seminar in the fall of 1966 to closely examine the implications of the Coleman Report. In the lengthy proceedings of the Seminar, they noted that "the central fact is that its findings were seen as threatening to the political coalition that sponsored it" (Mosteller and Moynihan, 1972, p. 28). Writing in Science magazine, Robert Nichols described the reaction of much of the academic community:

> . . . literally of revolutionary significance. Until these findings are clarified by further research, they stand like a spear pointed at the heart of the cherished American belief that equality of educational opportunity will increase the quality of educational achievement (Mosteller and Moynihan, 1972, p. 29).

Subsequent reanalysis of the Coleman Report has been somewhat contradictory of its conclusions. The Harvard Seminar's purpose was to encourage other researchers to use Coleman's data and re-examine the results. The consensus was that Coleman erred in his methods of analysis. Eric Hanushek and John Kain argued that the findings depended upon the order in which the variables were considered (Hanushek and Kain, 1972, in Mosteller and Moynihan, 1972). The Coleman Report focused on explained variance in student achievement. Its conclusions about school effects were a direct result of adding school variables to a regression equation already containing a number of other inputs.

The resulting explained variance (R squared) was small because the results were sensitive to the order that the inputs were added (Hanushek and Kain, 1972, in Mosteller and Maynihan, 1972).

Christopher Jencks and Marsha Brown found that there were strong interactions among variables in Coleman's regression analysis. Moreover, they argued that cross-sectional data (as opposed to time-series data) tells us little about how dynamic systems have worked in the past. For example, Coleman exaggerated the direct effect of "family" on "achievement" because the stability of "family" results in high final-period correlation with "achievement." The direct effect of "teacher" on "achievement" was underestimated due to the more frequent teacher changes. The influence of school was likewise minimized. In fact, in the "Talent" survey of 98 schools done just prior to the Coleman survey, the direct effect of "family" on "achievement" was slightly smaller than that of "school" and slightly larger than that of "teacher" (Jencks and Brown, 1975).

Does School Funding Matter?

By the mid-1980's, the Coleman Report, while still the most cited analysis of schools, was "commonly held to be seriously flawed" (Hanushek, 1986, p. 1150). More recent studies have found that school "quality" does have some impact on test scores. One of the most frequently-cited studies was by Eric Hanushek, an economist and expert in education finance. Hanushek found that school quality did not seem to reflect variations in expenditures, class sizes, or

other commonly measured school attributes. Rather, quality seemed to be more a function of teacher "skills" that defied detailed description but possibly could be observed directly (Hanushek, 1986). In an earlier 1975 article, Hanushek found that teachers' advanced degrees and experience did not contribute to higher test scores. But at the same time, for white students (but not black or Hispanic), teacher characteristics did explain significant variation in achievement (Hanushek, 1975).

Hanushek has generally concluded that "the constantly rising costs and 'quality' of the inputs of schools appear to be unmatched by improvement in the performance of students" (Hanushek, 1986, p. 1150). One difficulty was that some inputs were controlled by policymakers, while others (e.g., family, friends, innate ability) were not. Another problem was that the educational process was cumulative, while achievement was measured at a discrete point in time (Hanushek, 1986). Of the 147 separate production function analyses in the published literature since the Coleman Report, Professor Hanushek's interpretation was that the "results are consistent in finding no strong evidence that teacher-student ratios, teacher education, or teacher experience have an expected positive effect on student achievement." Likewise, "there appears to be no strong or systemic relationship between school expenditures and student performance" (Hanushek, 1986, p. 1162).

However, others have questioned the validity of the "production function" econometric approach. Betty MacPhail-Wilcox and Richard

King identified a number of serious methodological and philosophical problems:

1. Unlike production in industry, neither the goals nor the most efficient means of achieving them were well specified in public education;

2. In any industrial firm, costs of inputs vary with their quantity and quality, as reflected in market prices. In public education, the prices of employees, the largest resource in educational budgets, were not subject to purely competitive markets;

3. Student performance was a partial function of factors which were not under school control. These factors appear to be proxies for underlying phenomena which may be more directly related to learning than were school resources;

4. There was a general lack of clarity regarding the relationships between student attitudes, school personnel attributes, school-controlled inputs, and cognitive educational outcomes;

5. Because most production function studies were cross-sectional rather than longitudinal, school effects may be underestimated, background effects overestimated, and innate influences overlooked;

6. Most studies have employed ordinary least-squares and step-wise regression in which the order of the variables entered may significantly, and perhaps erroneously, influence findings (MacPhail-Wilcox and King, 1986).

MacPhail-Wilcox and King (1986, p. 215) found that in the over thirty studies they examined, the "evidence of significance and non-significance between student achievement and expenditures per-pupil is about evenly split." However, if factor analysis studies were dropped (which they argue should be excluded because the variables derived from factor analysis are more abstract and subject to wider interpretation), the remaining studies indicated "a significant relationship between fiscal conditions in the educational unit and student achievement level" (MacPhail-Wilcox and King 1986, p. 215). As a result of their review, MacPhail-Wilcox and King made the following recommendation:

> Finally, levels of expenditures are closely related to student achievement. Even when socio-economic status of communities is taken into account, school systems which have funds available to purchase resources which make a difference (i.e. experienced, verbally-able teachers and reduced class size) subsequently have higher achievement levels. Reform proposals must enable all school systems to have the fiscal capacity to attract and retain teachers. In particular, reform efforts must target funds to lower wealth areas to raise salaries and reduce class sizes to keep those experienced and verbally able teachers who are most effective in those settings (MacPhail-Wilcox and King, 1986, p. 222).

Harvard Education Professor Richard Murnane (an economics Ph.D. from Yale) was one of Hanushek's fellow economists who shared little enthusiasm for his production function approach. Murnane argued that such research did not address serious questions of causation. For example, many school districts with high expenditure levels due to the presence of state and federal compensatory funds for educationally disadvantaged students were obviously going to score lower on achievement tests than schools with primarily middle and

upper-class children. These schools get more money precisely **because** they serve children with lower achievement levels. The statistical controls used to account for differing achievement levels were still not adequate in even the best studies (Murnane, 1991).

The logic that money does not matter was not applied to other organizations, Murnane noted. Even private schools, which face intense competitive pressures, rewarded attributes like teacher experience that were not strongly correlated with student performance. Likewise, private business rewarded workers for experience despite evidence that a worker with ten years experience was no more productive than one with four. Economists never argued that these firms were inefficient because they still managed to survive in a competitive marketplace. Rather, they assumed that there must be good, if not obvious reasons, to reward experience. Murnane did not try to argue that all schools spend money wisely. Rather, he contended that it was inappropriate to make judgments about the efficiency of school spending on the basis of education production function studies (Murnane, 1991).

Another meta-analysis (i.e., analysis of analyses) of published research on the relationship between educational expenditures and student achievement found that in the forty-five studies surveyed, "nineteen studies reported no relationship, fourteen studies found a positive relationship, and twelve studies indicated a positive relationship under certain conditions" (Childs and Shakeshaft, 1986, p. 250). Among those conditions were subject matter (money made

more difference in science and math than in the humanities, for example) and how the money was spent (instructional materials vs. buildings, for instance).

The authors concluded that "it cannot, for instance, be said that large expenditures will not result in increased achievement". The study did suggest "a positive relationship between money used for instructional purposes and increased student achievement" (Childs and Shakeshaft, 1986, p. 263). Finally, they stressed that future research needs to "control for the student level of achievement at the beginning of the survey to gauge the academic progress made by students rather than simply the level achieved" (Childs and Shakeshaft, 1986, p. 262).

Does Race Matter?

In the 1990 book Politics, Markets, and America's Schools, John Chubb and Terry Moe estimated a series of linear regression models to determine the separate effects of various influences on student achievement. They found that the school's economic resources do not have a significant, independent effect on achievement gains. More surprisingly, however, they found that individual student achievement gains were virtually unaffected by the percentage of the student body that is black. To quote the authors: "In short, race--at least the black, non-black distinction--has no independent consequence at either the individual or the school level for student achievement" (Chubb and Moe, 1990, p. 127).

The four factors that did explain student academic gains were student ability, family socioeconomic status (SES), school SES, and school organization. The regression coefficients for all of these were several times larger than their standard error and statistically significant. Student ability was the most influential, followed by family SES, school organization (about two-thirds as influential as ability) and finally school SES (about one-third of ability). However, all influences appeared to be small (Chubb and Moe, 1990). Obviously, the family and school SES variables have racial implications, for many minority students come from low-SES families and attend low-SES schools. However, Chubb and Moe emphasize that it was the poverty and not the skin color that explained the diminished achievement. This was a distinction that has not always been made in the studies that found minority status to be strongly associated with low test scores.

Does Family Poverty Matter?

Most studies found that the home environment is an important determinant of student achievement (Ferguson, 1991). This was certainly nothing new in the literature, as James Coleman first found that family background was the strongest predictor of achievement in the mid-1960's. Most of the 147 studies reviewed by Hanushek that examined this factor found it (along with community SES) to be significantly associated with student test scores. However, Ferguson (1991) cautioned that poverty seemed not to matter when the effects of parent education level, female head of

household, and race were included in the analysis. He contended that poverty *per se* was not the critical ingredient in diminished test performance (Ferguson, 1991). It was true, however, that a large percentage of poverty-stricken American families shared one or more of these other characteristics that Ferguson did find related to low test performance.

Do Teacher Characteristics Matter?

The research is very uncertain on the importance of teachers in predicting student achievement. Coleman, Hanushek, and others found little to support the assertion that teacher ability made a measureable difference, although Hanushek was willing to concede the possibility of an observeable (if not measureable) teacher influence. Hanushek likewise found in his extensive literature review that test scores do not seem to vary on the basis of any "commonly measured attributes of schools and teachers" (Hanushek, 1986, pp. 1141-42).

MacPhail-Wilcox and King found that schools which had funds to hire experienced, verbally-able teachers did have significantly higher achievement levels. Ronald Ferguson likewise found in his Texas study involving almost 900 school districts and 2.4 million students that a teacher's score on a literacy competency test was one of the two strongest predictors of student performance on standardized tests. He also identified significant relationships between teacher experience, teachers with master's degrees, and improved student reading scores (Ferguson, 1991). However, he

acknowledged that earlier studies indicated that "evidence of a relationship between teacher competency exam performance and student achievement is scarce and weak" (Ferguson, 1991, p. 468).

An Oklahoma school equity study was recently completed at Oklahoma State University by Tommy Raulston, graduate student in the Department of Economics. Using several additional variables and two multiple regression models, Raulston found that five significant variables explained 38 percent of the variation in test scores. The three variables that exercised a negative effect on test scores were "percent free lunch", "percent minority", and the dropout rate. The significant positive variables were per-pupil expenditures and the percentage of school funds locally supplied. The three variables with the strongest effects were the three proxies for either individual or community wealth: Free Lunch, Minority, and Local Funds (Raulston, 1991). This raised the concern that those communities with many poor residents and the inability to invest in education possess none of the factors that most influenced achievement.

Summary

The review of the student achievement literature is, on balance, divided on the question "Does money matter?" Childs and Shakeshaft (1986) found that higher levels of instructional expenditures did increase test scores. MacPhail-Wilcox and King (1986) found that "those school systems which have funds available to purchase resources which make a difference (e.g., experienced,

highly literate teachers) subsequently have higher achievement levels" (MacPhail-Wilcox and King 1986, p. 222). Chubb and Moe (1990) found that the number of academic courses and the availability of a specialized academic program did have a statistically significant impact on achievement. These factors were obviously dependent on sufficient school revenues.

On the other hand, some studies questioned this effect. Beginning with the Coleman Report of 1966 and including Hanushek's findings, studies have questioned the importance of school resources. However, the Coleman Report has been found to be seriously flawed, and Hanushek's production function methodology and interpretation of the literature has come under increasing attack. Researchers on both sides of the question agreed that it was difficult to determine the effects of increased funding on student achievement because of the presence and variability of so many inadequately-explained factors. The need for continued research on the relationship between school resources and student achievement has been found to be evident by the substantial majority of researchers.

CHAPTER III

THE OKLAHOMA INDICATORS STUDY

Introduction

The data for this study are derived from the Oklahoma Indicators 1989-1990 and 1990-91 (Oklahoma State Department of Education, 1991-92). Each school district in Oklahoma since the 1988-1989 school year has been required to administer the nationally-normed Tests of Achievement and Proficiency in grades 3, 5, 7, 9 and 11. All districts are also required to report a variety of information to the State Department, including school, student, and teacher characteristics. Although this is a secondary data source, the Oklahoma Indicators is the only source for most of the information it contains and there is no practical way to acquire more detailed information from individual school districts.

Research Design

Six characteristics of the over 400 independent (grades K -12) Oklahoma school districts have been selected for their predicted impact on the dependent variable, student test scores. The independent variables for this multiple regression analysis are as follows: (1) "Revenue": Total per-pupil revenue received by the school district from local, state, and federal sources; (2) "Minority": Percentage of racial minority students; (3) "Free

Lunch": Percentage of students participating in federal free and reduced-price lunch programs; (4) "Teacher Salary": Average teacher salary; (5) "Teacher Degree": Percentage of teachers with advanced degrees; and (6) "Teacher Experience": Average years of teacher experience. The dependent variable to be explained in this analysis, student achievement, is operationalized by the use of 11th grade test scores.

Research Hypotheses

The research hypotheses, based on the results of previous studies, are that "Revenue" and "Teacher Salary" are likely to have small to moderately positive effects on student test scores. "Minority" is expected to have small to moderate negative effects, and "Free Lunch" is expected to have moderate to large negative effects. The other two teacher characteristics (Teacher Degree and Teacher Experience) can be expected to have, at best, small positive effects on student test scores. The literature review indicated that the three teacher characteristics are likely to have the most unpredictable effects on student achievement.

The independent variables, the hypothesized sign of their coefficients, and their mean and standard deviations for 1990 are described in Table I.

Selection of Variables

Some explanation is required concerning the selection of variables. While some previous studies have found instructional

TABLE I

HYPOTHESIZED SIGN, MEAN, AND STANDARD DEVIATION OF VARIABLES IN 1990 STUDY

Variable	Hypothesized Sign	Mean	Standard Deviation
Per Pupil Revenue	+	3188.46	608.23
Minority %	-	21.25	16.7
Free Lunch %	-	44.62	17.76
Teach Exper. (Yrs.)	+	11.32	1.96
Teach Salary	+	23024.42	1788.17
Teach Adv. Degree %	+	37.0	14.87
11th Gr. Test Score (Dependent Variable)		50.12	10.77

Source: Oklahoma State Department of Education. Oklahoma Indicators Report. Oklahoma City, OK: Author, 1990.

expenditures to be a better predictor of student success than total revenues, in Oklahoma there is very little uniformity in how instructional expenditures was calculated. Some districts include a variety of expenditures tangentially related to instruction; others do not. The use of the "total expenditures" calculation has somewhat similar methodological problems. The evidence indicates that the most comparable measure of district wealth is per-pupil revenue.

Likewise, previous studies have measured student achievement in various ways. While almost all use achievement test scores as a proxy, some use an average test score from all school grades tested. Others have looked at the effects of various influences on student achievement at several different grade levels. This study uses 11th grade scores as the best indicator of the cumulative impact of schooling on student achievement.

As for the other independent variables in this study, previous research has included the same or similar variables. The three teacher characteristics are the only teacher data available, and they are widely reported in the literature. Some studies have found these teacher characteristics (experience, advanced degrees, and salaries) to have significance in varying combinations. Research done by Harvard's Ronald Ferguson suggested that teacher results on a state-administered re-certification test would have been an excellent addition to the research design. However, such testing of existing teachers does not exist in Oklahoma.

The only variable in the model that relates to family socioeconomic status is "Free Lunch." It would obviously be useful to have more complete data on a variable representing what most studies have found to be the most important influence on student achievement. However, no other socioeconomic data are reported in this data set and the relevant 1990 census information is not yet available. Standard social science theories suggested that student outcomes like test scores were products of the combined effects of school, family, and community inputs along with student factors like motivation and innate ability. Community effects and innate ability are not directly measured by any variable in this study. Instead, family, community, and innate ability are subsumed within the "Free Lunch" variable, an admittedly imprecise measure of these effects.

The only other variable available in this data set that would seem intuitively useful in explaining the variation in test scores is the dropout rate. However, due to a serious under-reporting problem in Oklahoma, it is widely believed that the actual dropout rate is indeterminably higher than the reported state average of 3.57%. This figure represents the percentage of all students who dropped out in grades 9-12 <u>during</u> the school year (as opposed to failing to start school at all). Not only is this likely to be an artificially low figure, but there is very little variation reported among most districts in the dropout rate. Moreover, it is perceived by many that some smaller, rural schools significantly under-report dropouts compared to larger districts. For all these reasons, this variable is omitted.

The present study also does not include student-teacher ratio. The Oklahoma Indicators data does not report this statistic, although the total number of students and teachers in the district is reported. While this information would yield an approximate student/teacher ratio, studies done by Ferguson (1991) and others found that this variable was only significantly related to student achievement in primary grades. For this reason it is not included in this study.

Oklahoma Indicators Findings 1989-90

When the independent variables Teacher Salary, Teacher Experience, Teacher Degree, Minority, Free Lunch, and Revenue are included in a multiple regression analysis with the dependent variable Test Scores, the variables Free Lunch, Minority, and Revenue are found to have statistically significant independent effects on test scores when the other variables are controlled (see Table II). Moreover, all three are significant at the .01 level, so there is less than a 1% possibility that each of these three variables could have had a significant effect by chance. All three variables have T values well above the 2.58 needed to be significant at .01, with Revenue ($t = 4.75$) and Free Lunch ($t = -9.44$) much more significant than Minority ($t = -2.85$). These independent variables explain almost 34% of the variation in test scores. When correlation coefficients are computed, the strongest correlation is Free Lunch and Minority at .51. Thus, multi-collinearity is

TABLE II

MULTIPLE REGRESSION EQUATION PREDICTING DEPENDENT VARIABLE STUDENT ACHIEVEMENT OPERATIONALIZED BY 11TH GRADE ACHIEVEMENT TEST SCORES

	Regression Coefficients			
	Standardized		Unstandardized	
School Year	89-90	90-91	89-90	90-91
Independent Var.				
Teacher Salary	.04	.058	.0002	.0003
Minority	-.13**	-.098	-.09**	-.06
Revenue	.20**	.16**	.04**	.027**
Teacher Degree	.06	.057	.04	.042
Teacher Experience	-.008	-.007	-.008	-.03
Free Lunch	-.513**	-.365**	-.311**	-.217**

1989-90		1990-91	
Constant	= 48.24	Constant	= 44.08
F	= 36.86	F	= 15.58
R squared	= .34	R squared	= .18

** variable statistically significant at .01 level of probability

(N=443 in 1989-90; N=436 in 1990-91).

Source: Oklahoma State Department of Education. Oklahoma Indicators Program 1990 & 1991. Oklahoma City, OK: Author, 1991.

not a problem. These three statistically significant variables have effects independent of each other.

These results are not all that surprising based on prior research, with the exception of the strong positive effect that total per-pupil revenue has on test scores. A few studies have found money to have a small positive effect, but more have found no statistical significance. So, the fact that Revenue is significant at the 99% confidence interval, and that 34% of the variation is explained by only three variables, make this finding rather noteworthy. In Oklahoma, it is likely that as school revenues increase, test scores will also rise. The discovery that Minority and Free Lunch have a significant negative effect on test scores is not unusual. It should be noted that Minority has a much lesser effect than Revenue or Free Lunch. Many studies have found that as the number of minority students increased (when the minorities were blacks and Native Americans), test scores declined moderately. However, a recent study has shown little, if any, effect of student minority status on test scores when the effects of poverty were controlled (Chubb and Moe, 1990).

The three non-significant teacher characteristics also hold some surprises. Teacher Salary is usually the strongest of these three, but in this study it has even less impact than the weak positive effect of Teacher Degree. Also, it is a little disconcerting that as Teacher Experience increased, test scores slightly decreased. This is not due to the presence of large numbers of experienced teachers in schools dominated by impoverished

or minority students, as the correlation between "teacher experience" and "minority" and "free lunch" is very small (see Table III). Although many studies likewise show little effect from these three variables, teacher unions would argue that teacher characteristics do impact student performance, pointing to studies reviewed in Chapter II. All in all, it does not appear that most school districts are paying for teacher characteristics that significantly influence student achievement:

> The present set of hiring practices leads to an inefficient allocation of resources. The analysis indicates that teaching experience and graduate education do not contribute to gains in student achievement scores. Moreover, the characteristics that do matter are not highly correlated with these factors. Yet these attributes are being purchased by the school district (Hanushek, 1971, p. 288).

The 1990-91 Oklahoma Indicators Findings

In order to validate the 1989-90 findings, the same variables were used for 1990-91. Although a total of 445 independent school districts existed in Oklahoma in this school year, only 436 reported 11th-grade test scores. The State Department of Education waived the testing requirement for those schools with fewer than six students in attendance on the day the test was administered, and this was the case for nine small districts. In addition, any student absent on the day the test was administered was not required to make it up and thus not included in the school's results. The independent variables are listed in Table IV below with their hypothesized sign, mean, and standard deviation reported.

TABLE III

PEARSON CORRELATION COEFFICIENTS FOR VARIABLES IN 1989-90 STUDY

	Rev.	Scores	Lunch	Minor	Tchexp	Tchdeg	Tchsal
Rev.	----	.0163	.327**	.103*	.0866	.0926	-.201**
Scores	.0163	-----	-.529**	-.372**	.0705	.0651	.215**
Lunch	.327**	-.529**	-----	.512**	-.0533	.0258	-.399**
Minor	.103*	-.372**	.512**	-----	.0681	.0719	.0247
Tchexp	.0866	.0705	-.0533	.0681	-----	.420**	.477**
Tchdeg	.0926	.0651	.0258	.0719	.420**	----	.349**
Tchsal	-.201**	.215**	-.399**	.0247	.478**	.349**	-----

*significant at .05 **significant at .01

Source: Oklahoma State Department of Education. Oklahoma Indicators Data 1990. Oklahoma City, OK: Author, 1990.

TABLE IV

HYPOTHESIZED SIGN, MEAN, AND STANDARD DEVIATION OF 1991 STUDY

Independent Variable	Hypothesized Sign	Mean	Standard Deviation
Per-Pupil Revenue	+	3308.56	700.02
Minority %	-	22.57	16.88
Free Lunch %	-	44.26	18.47
Teach Exp. (Yrs.)	+	12.51	2.75
Teach Salary	+	4313.62	1926.30
Teach Adv. Deg. %	+	36.30	14.32
11th Gr. Test Score (Depend. Var.)		50.92	10.72

Source: Oklahoma State Department of Education. Oklahoma Indicators Data 1991. Oklahoma City, OK: Author, 1991.

School Revenue and Achievement

These results contrast in several interesting ways with the previous year's findings. With one important exception, the same variables are significant at the same levels. Per-student revenue is once again the only positive factor in the model influencing tests scores, and the magnitude of its effect is almost ten times stronger in 1991 (see Table II above). In fact, a $100 increase in per-student funding could expect to generate a 2.7 point increase in the test score of the average student. That is a profound impact, and there is less than a one percent chance that this relationship exists by chance. This fact makes it all the more surprising to discover, however, that there is virtually no difference (exactly $5.47) in average revenue per-student between the 50 highest-scoring Oklahoma school districts and the 50 lowest-scoring on 11th-grade achievement tests. Even more surprising is that the 50 lowest-funded districts outscored the 50 highest-funded districts by over 2 points in a composite average. A possible explanation is the availability of compensatory federal and state funds for low-SES schools (see Table V).

TABLE V

MEAN VALUES OF ALL OKLAHOMA SCHOOL DISTRICT VARIABLES AMONG THE HIGHEST 50 AND LOWEST 50 CASES WITHIN EACH VARIABLE (1990-91)

Variable (Mean; S.D.)	50 Lowest Dists.		50 Highest Dists.	
11th grade Test Scores (LE 39th %ile, N=49; GE 64th %ile, N=53)				
Statewide Mean District 11th Grade Test Score: 51.2 (nationally normed)				
Free Lunch	59.0;	13.7	30.2;	15.8
Minority	31.4;	19.0	14.4;	14.9
Tch Exp	12.1;	2.7	12.7;	2.8
Tch Adv Deg	34.0;	13.3	36.5;	14.0
Revenue	3415;	486	3409;	1085
Tch Sal	23537;	1694	24892;	1935
Free Lunch (LE to 22.2%; GE to 66.5%)				
Statewide Mean District Free Lunch Percentage: 44.3%				
Test Scores	58.4;	8.9	46.2;	9.3
Minority	13.1;	14.9	38.0;	19.5
Tch Exp	12.3;	2.8	12.4;	3.1
Tch Adv Deg	33.4;	12.5	36.0;	12.8
Revenue	3409;	1085	3795;	612
Tch Sal	24892;	1935	22594;	1323
Minority (LE 3.1%, N=33; GE 50.3%, N=32) 1990-91 Figures				
Statewide Mean District Minority Percentage: 22.6%				
Test Scores	57.4;	11.3	49.3;	10.8
Free Lunch	31.5;	11.4	61.5;	18.7
Tch Exp	13.3;	3.1	12.7;	2.6
Tch Adv Deg	36.0;	15.7	35.9;	15.4
Revenue	3791;	1030	3803;	1297
Tch Sal	24151;	1348	24100;	2175
Minority (LE to 2.6, GE to 50.1; N=31) 1989-90 Figures				
Statewide Mean District Minority Percentage: 21.3%				
Test Scores	59.7;	12.1	42.4;	11.4
Free Lunch	31.0;	10.9	65.3;	17.2
Tch Exp	12.1;	2.1	11.6;	1.6
Tch Adv Deg	39.2;	15.2	40.3;	14.8
Revenue	3660;	883	3528;	637
Tch Sal	23062;	1667	22664;	1646

TABLE V (Continued)

Variable (Mean; S.D.)	50 Lowest Dists.		50 Highest Dists.	
Teacher Experience (LE to 9; GE to 15.8)				
Statewide District Mean Teacher Experience: 12.5 Yrs.				
Test Scores	48.5;	10.1	50.9;	10.3
Free Lunch	45.1;	19.0	45.2;	17.5
Minority	18.4;	13.4	20.0;	16.7
Tch Adv Deg	24.6;	11.0	42.6;	16.2
Revenue	3294;	528	3435;	543
Tch Sal	22632;	1229	24537;	1469
% Teachers with Advanced Degrees (LE to 20.0; GE 54.3)				
Statewide Mean Percentage of Teachers with Advanced Degrees: 36.3				
Test Scores	50.3;	10.6	52.2;	10.6
Free Lunch	46.0;	18.6	44.1;	14.1
Minority	20.5;	16.6	21.1;	15.1
Tch Exp	10.6;	2.7	13.9;	2.6
Revenue	3344;	531	3427;	638
Tch Sal	22849;	1208	24926;	1789
School Revenue Per-Pupil (LE to 2743; GE to 4015)				
Statewide District Mean Revenue Per-Pupil: $3,309				
Test Scores	54.7;	8.4	52.3;	11.9
Free Lunch	23.8;	11.0	54.1;	25.9
Minority	14.0;	8.8	25.4;	25.1
Tch Exp	11.5;	2.0	12.8;	3.0
Tch Adv Deg	32.8;	10.1	37.1;	14.7
Tch Sal	25236;	1705	23430;	1793
Teacher Salary (LE to 22119; GE to 26773)				
Statewide District Mean Teacher Salary: $24,314				
Test Scores	48.6;	10.4	55.3;	7.8
Free Lunch	59.6;	22.4	32.1;	13.2
Minority	24.3;	19.0	24.6;	14.7
Tch Exp	9.9;	2.4	13.5;	1.7
Tch Adv Deg	27.3;	11.1	45.6;	13.2
Revenue	3650;	586	3070;	421

Source: Oklahoma Department of Education. Oklahoma Indicators Report. Oklahoma City, OK: Author, 1992.

Family Poverty and Achievement

The percentage of students eligible for the federal free lunch program is by far the strongest predictor of low test performance. It is again significant at .01, and a ten percent increase in a district's participation in the program corresponds with a 2.1 point drop in its test score average for 11th graders (see Table II). This regression equation predicted that a school with no "free lunch" students will outscore one with all such students by twenty-one points. Although a fairly wide gap, this represents a ten point drop in the magnitude of the disparity over 1990 figures. It is not surprising to find that the fifty wealthiest districts in terms of family socioeconomic status (as measured by free lunch eligibility) outscored the fifty poorest such districts by over twelve points on 11th-grade achievement tests (see Table 5).

Race and Achievement

The surprising finding in 1991, as compared to 1990, was the declining significance of race in school achievement. The percentage of minority students was a significant negative predictor of student achievement in 1990, with a ten percent increase in minority students coinciding with a 0.8 point decline in scores. While not a large drop, the relationship was significant at the .01 level of probability. In 1991, the percentage of minority students was not a significant variable even at the.05 level of probability (see Table 1). The sudden unimportance of this effect likely

accounted for much of the drop in test score variation explained by all the variables in the model. These six variables explained only 18% of the variance in 1991, compared with 34% in 1990.

Further examination of the data indicates that a school's minority composition is virtually unrelated to its test performance. The composite test score of the 32 independent districts in Oklahoma with over 50% minority student enrollment was at the 49th percentile nationally for all 11th-graders taking the Tests of Achievement and Proficiency (see Table V). This was about two points below the composite average of the 404 white-majority districts in Oklahoma. In 1990, the 31 districts with a majority of minority students had a mean 11th-grade test score of only 42.4. This difference in the means between 1990 and 1991 for "majority minority" districts was significant at the .01 level of probability.

In fact, the average test score of the 31 Oklahoma school districts with the **least** number of minority students (in excess of 97% white students) fell by two points between 1990 and 1991, while the average test scores of the 32 districts with the **highest** minority concentrations increased by seven points. As a result, the average 1991 11th-grade test score differential between those virtually all-white districts and those that were fewer than 50% white was only eight points, as compared to 17 points in 1990. This finding is tremendously encouraging, and may reflect in part the increased funding and emphasis placed on Oklahoma's "at-risk" schools (i.e. those with very low school-wide test scores) mandated by Oklahoma's HB 1017 reforms. Most "at-risk" schools are

overwhelmingly "minority" schools in the inner city of Tulsa and Oklahoma City, and they risk closure if they fail to improve their school-wide test performance. Conversely, it may also be true that schools are beginning to make a more concerted effort to "teach to the test."

Teacher Influences and Achievement

Once again in 1991, the effects of the three teacher variables appeared to be negligible. As is the case in many achievement studies that use teacher variables, the salary, experience, and degree status of teachers appeared not to be significantly related to student achievement (see Hanushek, Coleman, et. al.). While it is admittedly difficult to determine the influence of good teaching on test scores, or even the characteristics necessary to teaching success, it does appear that school districts pay for teacher attributes that may have had little to do with student success. In fact, data from both years suggested a negative effect of teacher experience on test scores. As reported earlier, however, those experienced teachers with advanced literacy skills, as indicated by a state-mandated test, are a solid predictor of student acheivement. More work needs to be done on the implications of this finding.

In examining the top fifty and bottom fifty districts in average teaching experience and in the percentage of teachers with advanced degrees, it is interesting to note that there is essentially no difference between the mean test scores of these two groups of districts (see Table V). There is, however, a seven point

increase in the mean test score between the bottom fifty and top fifty districts when they are ranked on the basis of average teacher salary. It is also interesting to note that the fifty districts paying the **lowest** teacher salaries in Oklahoma receive on average almost $600 **more** in per-pupil revenue dollars than those 50 districts with the highest teacher salaries in Oklahoma. Surprisingly, this would imply an inverse relationship between school revenues and teacher salaries. The Pearson correlation coefficient of -.1913, significant at the .01 level of probability, confirms the inverse relationship.

Summary

What does this model indicate about factors that influence student achievement in Oklahoma during the past two school years? Clearly, it tells us that money DOES matter. It matters for parents, and it matters for school districts. Also, it tells us that the racial composition of the student body is not significantly tied to achievement except when it is also accompanied by low socioeconomic status. When this factor is controlled, race seemes to matter very little. It was truly stunning to see race statistically significant at the 99% confidence interval in 1990, and then turn up insignificant at even the 95% level only a year later. A seven point improvement in the mean 11th grade test score by those thirty-two "majority minority" districts in only one year was equally remarkable. Few citizens or legislators would believe that the school districts with the largest racial minority concentrations would be reporting 11th-grade test scores virtually indistinguishable from the national and state averages. This result cannot be trumpeted too

loudly, for it completely negates the stereotypical perception that minority districts are disproportionately filled with low achievers.

The study might have turned out differently had additional or alternate variables been used to account for family socioeconomic status. These might have explained more variation and even lessened the significance of school revenues. Also, additional measures of school wealth should be examined. This study looked only at operational expenditures, yet it is the building fund, and the quality facilities that these funds can purchase, that are the most unequal in Oklahoma. The impact of poor facilities on student learning is a potentially important, yet largely unexplored, variable in student achievement. The detrimental effect of substandard facilities is an argument explored very persuasively in Jonathan Kozol's bestseller Savage Inequalities.

Likewise, a consistent calculation of instructional expenditure per-pupil would be somewhat preferable to total revenue or total expenditure per-pupil. All in all, however, the percentage of children participating in the federal free and reduced-price lunch program is a reasonably good approximation of the extent of family poverty in a school district. And, total per-pupil revenue is an accurate measure of the dollars that support each child's education. So, this study is important in the sense that it indicates (at least in Oklahoma) that when it comes to improving test scores, family and school money matters and race does not.

CHAPTER IV

SCHOOL FINANCE EQUITY IN OKLAHOMA

In the state of Oklahoma, a school district's revenue comes from four major sources: the state legislative appropriation (51% of total), state dedicated revenues (12%), local ad valorem taxes (30%), and federal funds (7%). Historically, both local and federal revenues were higher and the state appropriation was lower. In the past fifteen years or so the contribution rate has shifted toward a greater state government share of the education finance burden (Crown, 1992). This shift toward reliance on state aid was due to the state constitutional limitations on local school levies and increased fixed costs due to education reforms. While this reduced the overall amount of money available to schools, it has allowed Oklahoma to make funding more equitable as more school dollars are equalized through the state funding formula (Johnson, 1991).

Vertical Equity

The Oklahoma system of school finance is built upon the premises of fiscal neutrality and vertical equity. As defined earlier, fiscal neutrality attempts to place the same number of dollars behind each child, regardless of whether that child lived in a wealthy or poor neighborhood or school district. Vertical equity in Oklahoma provides "weights" to allow more state funding for

students or districts whose special needs make educational provision more costly. For example, special education, gifted, and economically disadvantaged students are counted as more than one student for funding purposes (e.g., since a gifted student is weighted at 1.25, four gifted students receive the same state revenue as five "regular" students). Likewise, those school districts with less than 500 total students receive a small school weight, and those that are relatively isolated geographically (and thus not good candidates for consolidation) receive an isolation weight (Crown, 1992). While there are several other factors that are also assigned weights, all these weights are essentially an additional state subsidy based on differential educational costs.

This concept of "vertical equity" is not without its detractors. By assigning weights to different categories of students in the state funding mechanism, the state runs the risk of exacerbating existing inequalities. For example, in the Oklahoma mechanism, "gifted" students generate $1.25 for their school in state aid for every $1.00 generated by regular students. Obviously, for those wealthy districts with a significant number of gifted students, the extra 25% in state aid received for those gifted students is somewhat disequalizing. Since affluent districts are considerably more likely to have gifted students, it is a case of the rich getting richer. Those schools with only a few gifted students do not receive enough state aid to provide gifted programs, while those with many gifted students can operate quality programs and sometimes still funnel excess money generated by gifted students

into the general school budget.

While few question the need to allow for funding differences that account for the variable costs faced by school districts, there are still concerns about vertical equity. The decision about which student or school district characteristics to reward with larger weights is an intensely political one. For example, small rural schools, with disproportionately large legislative clout, have recently been given either a "small school" or an "isolation" weight (whichever is larger). It has been argued that these weights subsidize inefficiency and make it less likely for school consolidation to occur. Oklahoma City and Tulsa area legislators successfully pushed for the approval of weights for "economically disadvantaged" students prevalent in those metropolitan districts. House of Representatives staff member, Debbie Terlip, notes that some suburban legislators complain that their districts are being shortchanged, for there are no weights specifically geared toward the types of students they educate (Terlip interview).

A committee of school superintendents has studied the system of weights at the Legislature's behest to see if further modifications are warranted. The assistant director of the Oklahoma State Senate Fiscal Staff, Jerry Johnson, has closely examined the formula for the determination of student "weights" and believes that the theoretical and empirical basis behind it should be re-examined. He also notes that there is concern in some quarters that the school superintendents studying the weights will have difficulty separating what will be good for their individual districts from what will be

good for the state as a whole (Johnson interview).

With the exception of mid-term adjustments that compensate rapidly-growing districts with extra funds in the middle of the school year, the state aid formula does not appear to be particularly advantageous toward suburban schools. Yet, House Education Committee Chair, Carolyn Thompson, observes that it is precisely these schools that have among the most severe capital concerns as they struggle to build classrooms to accomodate their rapidly-expanding student bodies (Thompson interview). However, in Oklahoma, capital costs remain solely the responsibility of the local district, with absolutely no state financial support. Oklahoma is one of only ten states that is not providing any financial support to local districts for their capital or building needs (Kozol, 1991).

Sources of Operational Funding Inequity

The State Aid Formula attempts to achieve fiscal neutrality per weighted student by using state funds as an equalizing supplement to local funding. Most local ad valorem taxes (property taxes which remain in the school district of origin) and state dedicated revenue (gross production and motor vehicles taxes which remain in the county of origin) are "charged" against (i.e., deducted from) a district's calculation of need based on the state aid formula. However, 26 school districts in Oklahoma (e.g. Oologah-Talala, Frontier, Konawa, etc.) generate more local and dedicated revenue than they would otherwise be entitled to under the state formula.

These "excess" funds are exclusively the result of public service property wealth in these districts (Johnson, 1991). Extremely valuable property and a small number of students create a situation in which a school district generates excess local funds and thus receives no Foundation or Salary Incentive Aid. Foundation and Salary Incentive Aid are the two largest equalizing components of state appropriated revenues, and state appropriations now make up 51% of all school revenues in Oklahoma (Crown 1992). School districts that fully participated in the formula received exactly 100% of their determined need per weighted child (for the 1990-91 school year this was $1,953.80).

Another way in which some school districts receive funds above their determined eligibility is through the Hold Harmless Supplement. When the current school funding formula was adopted in 1981, a transitional funding provision (a hold harmless clause) was included to eliminate the short-term negative effects on districts that were losing students faster than they could cut costs. Although significantly modified, this provision still exists in the present school funding formula. In 1990-91, 32 districts received supplemental funds totaling almost 2.5 million dollars (Johnson, 1991).

However, it is important to note that changes in the Hold Harmless provision adopted by the Legislature for the 1988-89 school year have reduced dramatically the cost of this supplement. In 1985-86, 251 districts received over 66 million "Hold Harmless" dollars (Johnson, 1991). Oklahoma Senate staff expert, Jerry

Johnson, anticipated that the Hold Harmless costs would continue to decrease until it is no longer a source of school funding inequities.

In 1990-91 there were a total of 41 Oklahoma school districts that received a total of 5.13 million dollars in "excess" revenues from the two sources outlined above. The average funding for these districts per weighted ADM (Average Daily Membership) was $2,252.88 (115% of the guaranteed formula level). These excess revenues represent a mere 0.3% of the operational funding for schools from state, local, and dedicated monies. The students from these districts also represent only 1.9% of all Oklahoma school children. If all excess funds were redistributed equally throughout the state, each of Oklahoma's 593 districts in 1990-91 would receive merely an extra $6.40 per weighted child (Johnson, 1991). When these inequities are put into perspective, it is clear that public service property and the Hold Harmless Supplement are not the major sources of funding inequity in the Oklahoma school finance mechanism. This is contrary to the perception of many citizens and even some public officials.

Another relatively minor source of inequity in the Oklahoma school finance scheme is the county four-mill levy. Thirty-eight of the 39 operational mills are equalized through the formula, with the one unequalized mill coming from the county four-mill levy. Revenues from this levy are kept within the county of origin and ditributed to the schools within the county on a per-pupil basis. Section 9, Article X of the Oklahoma Constitution prohibits the

Legislature from making this last mill "chargeable" under the state formula. Of all operational school funds, revenue from this one mill accounts for only 0.6% of the total. District revenues per weighted ADM from this mill range from $2.33 to $43.14, with the state average being $12.97 (Johnson, 1991).

Allowing schools to generate additional local revenues through higher local effort is another source of funding that is not equalized. Oklahoma's Constitution forbids school district patrons from increasing the operational support for their school by increasing the number of mills levied. The only way for a district to increase the funds generated through property taxes (without changing the value of the property assessed) is to convince its assessor to raise the county assessment ratio. The assessed value of property by which mill levies are applied is the fair cash value multiplied by the assessment ratio. The State Board of Equalization has decreed that the ratio in each county must fall between 11% and 14% (Johnson, 1991).

The Legislature has statutorily established that ad valorem revenues generated from that portion of the ratio above 11% are nonchargeable against the state formula. While this provides an incentive for counties to raise their assessment ratios and thus bring additional revenues into the county's schools, it is also a source of inequity in the finance mechanism. Total revenue generated from this "leeway" funding statewide in 1990-91 was 6.6 million dollars, or 0.4% of the total. Funding per weighted child ranged from zero (for all school districts in counties with an 11%

ratio) to $209.44 (Johnson, 1991).

With all the sources of operational inequity that have just been detailed, it is vital that the magnitude of the disparity be kept in perspective. In 1990-91, the wealthiest Oklahoma independent school district received $9,664 in per-pupil revenue but only $4,480.70 per **weighted** pupil, while the poorest received $2,505 in per-pupil revenue or $1,956.13 per weighted pupil. While this represented a variance of 129% per weighted pupil, the variance in non-weighted per-pupil revenue was almost 400%. But rather than consider the range of spending, it is more revealing to consider the funding level for the majority of students. The wealthiest 25% of the school districts in Oklahoma in 1990-91 had an average weighted funding level of $2,016.68; the second wealthiest quartile was $1,974.83; the third wealthiest quartile was $1,969.78; and the poorest quartile was $1,962.65. Thus, the funding disparity between the poorest and wealthiest quartiles was only 2.7% (Johnson, 1991). Clearly, operational funding inequities in Oklahoma are far less significant than in those states discussed in Chapter I that have had successful court challenges to their school finance system.

Capital Funding Inequities

The discussion so far has concentrated solely on operational funds. School districts also have available to them monies from building fund levies (up to 5 mills) and from sinking fund levies (up to 10% of the district's total assessed valuation). Nearly all districts levy at least a portion of the building fund millage and

over half use the sinking fund levy. The funding formula does nothing to equalize the disparties that exist in monies that are available to school districts from these sources (Johnson, 1991). Because the value of taxable property varies considerably between districts, and because building and sinking funds are in no way equalized, the ability of local districts to build, maintain, and equip facilities varies greatly.

The district with the greatest property wealth in Oklahoma could generate $1,070 per child in 1990-91 from a five-mill building levy, while the poorest could only generate $8.19 per child. The top 10% could generate $188.33 per child, while the poorest decile could only generate $35.94 (Johnson, 1991). The disparity in the sinking fund is of similar magnitude, meaning that many districts are forbidden to even consider a bond issue because they have reached their 10% indebtedness ceiling. The magnitude of these inequities are far greater than any operational inequities, for there is absolutely no relationship between capital needs and the ability to raise capital.

Judicial and Legislative Attempts at Equity

Clearly, Oklahoma has made successful efforts in recent years to increase both the adequacy and the equity of state appropriations for operational expenditures. The political impetus for the 1981 revision in the State Aid Formula that has increased operational funding equity stemmed in part from an unsuccessful 1980 court

challenge to Oklahoma's school funding mechanism by a coalition of 38 Oklahoma school districts. In that case, the Oklahoma Supreme Court in 1987 ruled 5-3 that the Oklahoma system was constitutional, with Justice Marian Opala writing for the majority that "we find that neither the United States nor the Oklahoma Constitution requires the school funding regime to guarantee equal expenditures per child, at least where there is no claim that the system denies any child a basic, adequate education . . ." (Johnson, 1991, p. 5). In 1990 the Fair School Finance Council (with the same plaintiffs as in 1980) went back to state court, this time claiming that Oklahoma failed to provide the "adequate" funding that Justice Opala wrote was constitutionally required. This case is still pending, although its prospects are not considered bright (Johnson interview).

In Oklahoma's titanic struggle to pass HB 1017 (a comprehensive education reform bill with an accompanying $230 million dollar tax increase), the issue of finance equity was high on the agenda. After the failure of a 1989 special legislative session called by the Governor to enact education reform, a blue-ribbon commission called Task Force 2000 held public hearings throughout the state before proposing the legislation's contents amid great fanfare. After a prolonged legislative fight that dominated the 1990 legislative session and with the persistent urging of the bill's passage by Republican Governor Henry Bellmon, an unprecedented statewide teacher walkout and massive capitol demonstration in mid-April 1990 seemed to provide the final impetus. HB 1017 was passed in late April, 1990 with the necessary 2/3 majority to make it take

effect immediately and pre-empt a possible voter challenge. The legislation subsequently survived an emotional statewide referendum (by a 54% to 46% margin) in October, 1991 that would have repealed the tax increase and all of the bill's reform provisions.

According to House Education Committee Chairperson Carolyn Thompson, HB 1017 and its massive infusion of new money into the public schools has taken Oklahoma closer toward operational funding equity than any other single factor (Thompson interview).

But because much of the HB 1017 discussion involved funding inequities among school districts that would not be eliminated by the legislation, a companion measure to HB 1017 (HJR 1005) was put on the statewide ballot in June, 1990 to allow the voters of Oklahoma to pass judgment on two constitutional amendments aimed at reducing these inequities. Passage of the proposed state questions would have activated a Common School Fund that would gradually equalize the excess ad valorem revenues generated by public service property, equalize the building and sinking funds, and equalize the last mill of the county four mill levy.

After a campaign fraught with voter misinformation (opponents successfully persuaded many voters that the state questions were really a "backdoor" property tax increase) and a decided lack of enthusiasm by public officials in trying to sell the proposals to the voters, the state questions went down to a resounding defeat. School finance equity has been largely a dead issue in Oklahoma ever since. The belief of House Speaker Glen Johnson is that the voters have spoken on these equity issues in rejecting the state questions.

However, he does not disagree with the assertion that many voters mistakenly believed that the state questions would raise property taxes and that the proposals were not aggressively sold to the public (Johnson interview). This was due in part to the fact that the election came immediately on the heels of the Legislature's adjournment for the year, giving legislators little time to campaign for the proposals. Also, proponents raised insufficient funds to launch the necesssary media blitz needed to conduct a successful campaign (G. Johnson interview). The bottom line, according to Speaker Johnson, is that the voters have spoken on this aspect of Oklahoma school finance equity. The Legislature has no real desire to reopen the issue and risk demonstrating a lack of respect for the initiative petition process (G. Johnson interview).

Summary

Oklahoma has long had extreme disparities in the financial conditions of its public school districts. The state has always had more school districts than states of similar size (593 in 1990-91) and they have for most of Oklahoma's history been heavily reliant on the local property tax and thus funded at quite variable levels. This has raised questions of fairness and has been an obstacle in generating political support for education reform. Oklahoma's State Senate Fiscal Staff Associate Director Jerry Johnson, an authority on Oklahoma education finance, puts the importance of school finance equity this way:

> The denial of an adequate education to any of Oklahoma's 550,000 elementary or secondary school children because of an inappropriate funding scheme will have serious implications for the future opportunities of those students and for the credibility of the state's educational system. . . . The perception of fairness is a crucial element in generating support for education. If legislators, taxpayers, or school patrons view the system as being unfair, they will be less likely to provide their needed support. Much of the discussion surrounding the recent tax increase for education (HB 1017) centered on the fairness issue. In many instances, support from the press, constituent groups, and individual legislators was given based upon the perception that the equity issue was being addressed (Johnson, 1991, p. 2).

However, in the face of the two recently-failed statewide referendums that would have removed barriers to greater school equity, attention must be paid to those equity reforms that are politically achievable. It is to those concerns that we now turn.

CHAPTER V

CONCLUSION

Restatement of Research Questions

There were two closely-related questions proposed in this research: (1) to examine the relationship between school funding and student achievement nationally and, through a multiple regression analysis, test that relationship in Oklahoma; and, (2) to examine the implications of the funding/achievement relationship for school finance equity throughout the nation and, more specifically, the implications of the Oklahoma findings for its own system of school finance.

Question Number One Answered:

Oklahoma Indicators Findings

As we have seen, there is substantial evidence nationally from a variety of studies that higher school funding is a statistically significant predictor of higher student test scores. However, the evidence is far from unanimous that this relationship exists. The multiple regression analysis of the Oklahoma data from 1990 and 1991 confirmed that achievement test scores tend to rise when school funding was increased, even when the effects of such important factors as the student's race, the family socioeconomic status, and

selected teacher characteristics (i.e., teacher experience, education level, and salary) were held constant. Moreover, these relationships were statistically significant at the .01 level in both years, meaning that there was less than one chance in one hundred that the relationship occurred by chance. The model explained 34% of the variance in test scores in 1990, but only 18% in 1991. Based on this two-year study of every independent school district in Oklahoma, the most plausible answer to the question "Does Money Matter?" is simply "Yes, it does."

The other major finding of the Oklahoma statistical analysis was that the racial composition of the student body has suddenly become statistically insignificant in Oklahoma. The minority status of students was not significant even at the .05 level in 1991 after being significant at the .01 level in 1990. This suggests that minority students, particularly schools with many such students, are performing better on the Oklahoma 11th-grade achievement test. Further analysis of the data indicated that the 32 school districts with a majority of minority students improved their mean test score from the 42nd to the 49th percentile on the nationally-normed Test of Achievement and Proficiency between 1990 and 1991. This improvement placed these schools within two points of the statewide average, and the seven-point increase was statistically significant at the .01 level. The sudden insignificance of race also likely accounts for much of the drop in the variance explained by the model (from .34 to .18) between 1990 and 1991.

Question Number Two Answered: School Finance Equity Evaluation

As we have seen, school finance is an area of tremendous inequity throughout the United States. Many states have failed to even remotely achieve equity in either operational or capital funding. By contrast, Oklahoma, with the few notable exceptions previously discussed, has achieved substantial equity in operational funding. Ninety-eight percent (98%) of all Oklahoma school children attend a school operationally funded at between 97.5% and 102.5% of the state average per weighted student (Johnson, 1991). However, the capital funding side of the Oklahoma school finance equation is still inequitably determined by the wealth of the local school district. Many school districts in Oklahoma and throughout the nation are thus unable to finance capital projects, particularly the construction and maintenance of classroom facilities. Moreover, Oklahoma is one of only ten states that fails to provide any assistance to local districts for their building needs (Kozol, 1991). This obviously has an adverse effect on their ability to deliver an adequate educational product.

Spending Money on "Inputs that Matter"

Several studies referred to in this research speak to the necessity of spending additional school revenues on "inputs that matter" if there is to be a solid link between funding increases and greater student achievement. Examples of such inputs outlined are more verbally-able teachers, lower class sizes, and higher

teacher standards (see Ferguson, 1991 and MacPhail-Wilcox and King, 1986). But, while education reforms like Oklahoma's House Bill 1017 (and before it House Bill 1706 in 1983) addressed these standard inputs, improving test scores of chronic underachievers means bolder and more aggressive steps than just increasing teacher salaries, buying better instructional aids, or building nicer buildings. These are **necessary but not sufficient** conditions for improving the only school output that really matters: student learning.

Such spending should be particularly targeted for those schools and students that are most "at risk" of falling behind in school. Oklahoma City and Tulsa, Oklahoma's only large metropolitan areas, have implemented ambitious programs in schools that have low collective test scores. Funding has been increased through the "economically disadvantaged" weight added to the state funding formula as well as the Chapter I federal money that has been available for many years (although Chapter I funding has remained static throughout the 1980's and early 1990's). These at-risk schools, including middle and high schools as well as elementary schools, are subject to closure under HB 1017 unless their test scores show marked improvement. A good example of a federally-funded program to improve such "at-risk" schools is the Tulsa Public Schools' IMPACT Program.

Six Tulsa inner city elementary schools and one middle school have initiated "homework hotlines" that parents can use to get their child's homework assignments and other school information. Each school has also hired "parental involvement facilitators" to

coordinate programs for parents, while allocating money to bus teachers and administrators to area housing projects for parent/teacher conferences. The schools also offer parenting classes designed to better prepare parents to get their children three years and under prepared for school. These schools have from 77% to 94% low-income pupils, and their yearly per-pupil spending to finance this program will increase between $88.34 and $204.25. Class size averages about fifteen students, well below the new lower class size of twenty-one mandated by Oklahoma's HB 1017 (Tulsa World, July 14, 1992).

Public Support Necessary for Equity

Some taxpayers question any attempts at school finance reform because they point to highly-publicized examples of waste and abuse in school spending. It is undeniably true that some well-funded schools foolishly squander their resources on such non-essentials as inflated administrative salaries, elaborate athletic facilities, imposing classroom buildings, and a variety of other expenditures not central to their educational mission. The Education Committee Chair of the Oklahoma House of Representatives, Representative Carolyn Thompson (a former long-time Oklahoma teacher herself), stressed that a school's administration is a critically important factor in whether money is spent on resources that make a difference in student learning, and she made it clear that it is an area in which Oklahoma must continue to improve (Thompson interview). However, examples of administrative waste and abuse hardly justify

the up to tenfold difference in operational funding per-student that has persisted in Texas and some other states for decades. In fact, it is logical to assume that waste would go down as wealthy schools have less excess revenues for these frills.

Certainly, public skepticism of a school's fiscal prudence does not justify the fact that 41 school districts in Oklahoma are allocated "excess" operational funding by the state aid formula of up to 226% of the state average per weighted pupil. Rather than use waste as an excuse for inequitable or inadequate school funding, efficiency and accountability as well as equity should be expected from our tax-supported schools. That is precisely the direction that Oklahoma has headed with HB 1017 reforms that forced school districts to regularly measure and report to taxpayers student performance on achievement and writing tests at six different grade levels, school dropout rates, the level and category of revenues and expenditures, and other characteristics. All of this is compiled in The Oklahoma Indicators, published annually since 1988 by the Oklahoma State Department of Education.

All of these data are presented in a format that compares the district standard in each category to other similar districts as well as to the state average. The Oklahoma media has reported on the release of the Indicators with increasing fanfare each year. In fact, for the first time in 1992 the data are broken down to the individual school site level in every category. Consequently, there is less reason than ever for an interested citizen to claim ignorance of how their schools are performing. In addition, the

more detailed financial records of school districts are largely matters of public record and increasingly the subject of media reports. It is up to the taxpayer to care enough to pay attention to how their local schools are administered and to act responsibly with the information provided.

Oklahoma Equity Reform Proposals

Now that Oklahoma has, for the time being, addressed the problem of an historically inadequate education funding base with the infusion of $230 million new dollars per year in state aid as a result of HB 1017, the focus of its education reform effort should be on even more equitable financing of public education. There are several steps that could take Oklahoma much closer toward the elusive goal of fiscal neutrality, which of course means that the quality of a child's education is completely a function of the state's wealth as a whole, rather than of the family, neighborhood, school district, county, or region in which the student lives. Toward that end, the state of Oklahoma should implement the following proposals: 1) County assessors should be appointed rather than elected. So long as assessors are elected, there will continue to be a political incentive to dramatically undervalue property because low assessments translate into re-election of the assessor (Crown, 1992). A recent Oklahoma Supreme Court decision involving the controversial assessment practices of Tulsa County Assessor Cheryl Clay has made it clear that there is no judicial remedy to the wide latitude granted to assessors in determining

property assessment procedures (Wood et al., 1989) The Legislature has certainly not succeeded in forcing assessors to appraise property at fair market value, and it seems unlikely that such will ever be the case until the incentive to undervalue is eliminated. That likely requires making the office appointive rather than elective. 2) Equalize the last mill of the county four-mill levy. This would require an amendment to the Oklahoma Constitution, but it is necessary if the goal of fiscal neutrality is to be reached. Failure to do so means that 25% of a county's four-mill levy contribution to the funding of its schools is tied directly to the wealth of the county. While this is less than one percent of all state education revenues, it is still a necessary reform if the equity principle is to be consistently applied. 3) Activate the Common School Fund or use some other mechanism to equalize "excess" funds. The Common School Fund is already provided for in the Oklahoma Constitution, although it has never been activated by the Legislature. This was a key provision in the failed state questions of 1990, for it would have removed the most glaring and galling inequity in the Oklahoma formula. It bothers many citizens as a matter of principle that a district which happens to have a huge utility plant can be fabulously wealthy, while its neighbors wallow in poverty. While the total amount of this equalization will only benefit all districts by $6.40 per weighted child, it is simply a matter of fairness that this be done.

Moreover, one look at the incredible facilities in most of these districts makes it clear that most literally have more money

than they know what to do with. When the small, rural Frontier district in north central Oklahoma (with a nearby OG&E power plant making it the wealthiest independent district in the state) builds an indoor swimming pool and a lighted football stadium (a particularly interesting use of funds considering the school is too small to even have a football team) to accompany its already-extravagant physical plant, something must be done. It is an affront to all those districts making do with dilapidated, statehood-era classrooms and broken-down school buses. Such incredible wealth disparities simply cannot be justified in a state that has an overall school spending level that historically ranks in the bottom ten nationally. However, in light of new HB 1017 revenue, Oklahoma now ranks 37th nationally with state and local education spending equal to $938 of per capita income (Brizius and Foster, 1990). 4) Appoint a task force to study the problem of intra-district equity. Many larger districts in Oklahoma have obvious disparities in the way they distribute funds within their districts. This is a nationwide phenomenon that has only recently attracted attention from researchers. Wright and Hirlinger (1992) examined twenty-five school districts nationally and in the majority found "U" or "J" shaped revenue curves in which school districts filled with many students of both the very poor and the wealthy were receiving the most combined local/state/federal aid, while the middle-class districts received proportionately less. This replicated the finding of Levy, Meltsner, and Wildavsky (1974) in their classic study of the Oakland, California schools.

However, if the equity principle is to be consistently applied, it is intolerable for schools in wealthy neighborhoods to have far nicer facilities and greater operational funding than those in poorer neighborhoods within the same school district. In Oklahoma, an obvious example is the Putnam City school district on the northwest side of Oklahoma City. The quality of facilities and program offerings at Putnam City High School, Putnam West, and Putnam North reflect the working class, middle class, and upper class characteristics, respectively, of the neighborhoods that surround these high schools. It is no more proper for schools within a district to be constructed and funded at significantly different levels than it is for entire districts to be so funded.

5) Equalize "leeway funding." While there is nothing wrong with rewarding those counties which have chosen to support their schools with higher than the state minimum 11% assessment ratio, two counties with identical assessment ratios should be able to generate identical revenues on the same dollar amount of assessed property for their local schools. The "power equalizing" formula of Coons, Clune, and Sugarman discussed earlier, and upon which the Oklahoma state aid formula for operational funding is already based, could be utilized to equalize these funds without removing the incentive for counties to tax themselves at higher rates in support of their local schools. As it currently stands, some districts are generating over $200 per weighted student from these leeway funds while others generate nothing (Johnson, 1991). 6) Equalize the Building and Sinking Funds. This is the most necessary Oklahoma equity reform

because it is the area of greatest inequity. There are a variety of possible reforms, but they all have to do with the state using its power to more closely equalize funds that are now based solely on the amount of local property wealth. Many districts with needed building projects have already hit the 10% indebtedness ceiling allowed by the Oklahoma Constitution. These districts cannot even propose a bond issue for their patrons to consider. In response to these problems, some states have provided matching grants for capital projects, recaptured "excess" funds from wealthy districts for distribution to poorer districts, or even collected all property taxes at the state level and distributed them on a weighted, per-pupil basis for both operational and building expenditures. California, Alaska, and Hawaii are all currently using this last and most intrusive method (Johnson 1991). While some object to the further loss of local control, the presiding judge in the Texas Edgewood case made it clear in rejecting that argument that local control has long since given way to detailed state regulation of the public schools all over the United States (Gendler and Wise, 1989).

Oklahoma should move toward one of these local capital-enhancement methods because it is facing three factors that all contribute to a looming crisis for districts that are unable to meet their capital needs. First, a great many districts have major classroom facilities that are many decades old and simply beyond repair. Second, HB 1017 has imposed strict class-size requirements that will force each district in Oklahoma to get class sizes down to the low-twenties in elementary schools and the mid-twenties in

secondary schools by 1994. Finally, there is a continual migration of the state's population from rural to urban and suburban school districts (Crown, 1991 and 1992). Some of these urban and suburban districts are at their indebtedness ceiling and are thus forced to use makeshift portable classrooms, violate HB 1017 class-size requirements (and be subjected to the loss of substantial state funds for doing so), or both. House Education Committee Chairperson Carolyn Thompson and Senate and House Fiscal Staff school finance experts Jerry Johnson and Pat Crown all agree that the state must address this looming crisis in the building and sinking funds as an urgent priority.

Recommendations for further research

There is much that still needs to be done in the area of school finance equity--both nationally and in Oklahoma. There is a tremendous need for longitudinal studies of school districts and even individual school sites to more precisely measure the impact of funding increases on student achievement over time. Cross-sectional studies such as the author's are measurements of achievement at one moment in time rather than a measure of the change over time. In Oklahoma this means districts must retain detailed records much longer than the current five years required by the State Department. The author's attempt to conduct such a longitudinal study of the fifty largest districts was frustrated by the failure of all but one of the fifteen respondents to maintain such records over the past twenty years.

There is always a need to find new variables, or better operationalize old ones, in order to explain more of the variation in test scores. Most student achievement studies, the present one included, leave the substantial majority of the variance unexplained. The Oklahoma study needs to be done with neighborhood 1990 census data (as soon as it becomes available) to more adequately operationalize the family socioeconomic status. Perhaps more importantly, a "parental involvement" variable needs to be included in the model to measure the degree of parental motivation, effort, and involvement in supporting their child's education. This is a vitally important factor that is either left out, or inadequately accounted for, in virtually every one of these studies.

Another study that should be done is an examination of the effect of antiquated or substandard facilities on student achievement. A recent survey by the American Association of School Administrators indicated that "74% of our nation's school buildings were built prior to World War II or during the 1950's/1960's era of cheap construction to meet "Baby Boom" needs" (AASA, 1991). The study also indicated that "one child in eight attends a school that is structurally unsound, environmentally unsafe, or both." This figure drops to one in six for the southeast region, of which Oklahoma is a part. Moreover, a 1988 Carnegie Foundation report found that "student attitudes about learning are a direct reflection of their learning environment." Finally, an independent study by the Washington D.C. school district in 1991 concluded that "student achievement as measured by standardized test scores would be five to

eleven percent higher if the physical condition of their schools improved" (AASA, 1991). With this evidence and the problem of inadequate facilities that state experts have already acknowledged, it is time that Oklahoma do an in-depth study of the state's school facilities along with an analysis of how the neediest schools will be able to finance the new construction.

Concluding Discussion: The Case for Equity

Given the evidence presented herein, it should be clear to policymakers in Oklahoma and every other state that it is simply a matter of fairness and social justice to move toward the goal of school funding equity. This is not to imply that the studies are unanimous that funding and achievement are statistically linked. The Coleman Report (1966) and the economic production function studies of Hanushek (1986) and others continue to question the importance of money for achievement, but given the weaknesses exposed in these studies the preponderance of the evidence still indicates a statistically significant linkage. This confirms what most of us know from our own experience to be true: additional money <u>generally</u> means higher teacher salaries, better instructional equipment and curricular support, a quality physical plant with an atmosphere more conducive to learning, and the like. It logically follows, and the data indicates (Ferguson, 1991), that such schools attract and retain better teachers and <u>are more likely</u> to provide the overall environment most conducive to student achievement.

Some critics reply to this argument by noting that the United States accepts inequities in all aspects of life--both public and private--with no obligation for the government to step in and level the playing field. What makes education funding fundamentally different? The answer, of course, is that education is the common denominator that largely determines how level the playing field will be for the rest of one's life. Is it enough to eliminate *de jure* discrimination while tolerating the *de facto* discrimination that inevitably results from grossly unequal educational offerings? Is it not a cruel joke for the government to advocate a color-blind meritocracy while at the same time it strongly influences which children receive the best opportunity to develop meritorious skills? Is it not exactly backwards from the American creed of equal opportunity when the children who start out with the advantage of literate, affluent parents typically attend the best-funded schools? How can the children of the poor or the working class ever expect to close the gap? The answer, of course, is that they seldom do.

The school finance system that is most commonly found all over America is effectively rigged to stack the deck against the disadvantaged. Busing is no longer a viable solution to the equity problem because the districts with the money are in the suburbs, and the U.S. Supreme Court made it clear in Milliken v. Bradley (1975) that busing cannot occur across district lines. Inner city districts are left with an eroding property tax base and student bodies made up increasingly of poor and working-class whites, minorities, and the handicapped. As the presiding judge said in the

Texas Edgewood case, these districts are forced to "tax high just to spend low." Suburban schools can, of course, do just the opposite.

But at the same time, we also know that some poorly-financed schools overcome these hurdles and outperform wealthier schools. We can all be grateful that money is not the whole story of student achievement; dedicated teachers and administrators can sometimes motivate students from disdvantaged backgrounds to excel in even the bleakest surroundings. But with inadequate funding the job is made tougher than it need be, and the odds of success are certainly diminished. In fact, many would argue that those schools facing the biggest challenges should have the **most** resources if we are to take seriously the American dream of equal opportunity. And while there is limited federal money (Chapter 1 funding has steadily declined both in real dollars and as a percentage of the overall federal education budget throughout the 1980's and early 1990's) and even small amounts of additional state money (the new "educationally disadvantaged" weight in the Oklahoma aid formula, for instance) going to schools with students from low-income families, the overall picture nationally is that the children of the poor still attend the poorest schools in terms of both resources and quality (Kozol 1991).

Anyone who has read Jonathan Kozol's Savage Inequalities knows that the gap between the "have" and the "have not" schools is quite dramatic in school jurisdictions all over this country. In talking with the teachers and administrators in these severely under-funded schools, it became clear to Kozol how the bleak surroundings contributed to bitterness and low morale among the staff. Many

talked of how they felt badly for the students because they saw the effect it had on them. Most teachers looked for every opportunity to escape those surroundings, and administrators talked candidly of getting stuck with the worst teachers in the district because of the rotting facilities and non-existent teaching aids (Kozol, 1991). Yet, it only stands to reason that many good teachers would accept and even request the challenge of working with the most challenging students if they are given the tools to do their job properly and the chance to have a decent quality of life in the environment in which they will spend their days. This means buildings that are habitable.

In talking with students in the over thirty school districts he visited from coast to coast, Jonathan Kozol used their own words to vividly illustrate how they perceived that their lives are valued less than other children's by our society. In this age of mobility for even the poorest children, these kids know only too well what kind of schools other kids attend. They ride their bicycles or drive by beautiful schools that are frequently only a few blocks or miles away. They see beautiful facilities and first-class equipment at academic and athletic competitions hosted by affluent schools, and they likely see nice "real-life" schools on television news and documentary programs. They understand very clearly how their lives count for so much less when they attend an overcrowded, dilapidated school. Finally, they wonder if they can ever hope to compete for admission to good colleges or get a chance to compete for good jobs.

The sad truth is, of course, that they will not be very competitive in these most competitive of all American pursuits. The middle and upper classes will explain their inevitable underachievement by saying these kids are unmotivated and lazy, and that it is unlikely that they would succeed in even the richest schools. That is obviously an unfair and untrue generalization, and it begs the larger question that they should at least be allowed to try. It is certainly difficult for any child to be optimistic about the future or to be motivated to work hard in school when the chances of a payoff seem so remote. The solution is not to write off these children as not having the necessary ingredients for success. Rather, it is to intervene with innovative, well-funded programs like Tulsa's IMPACT that give them and their parent(s) the training, motivation, and vision that make academic success possible. Ultimately, it is the public school that is left with the primary responsibility to help these students overcome the inherent disadvantages of their family and social environment. The *least* that state and local governments can do is give the teachers and administrators of these schools, largely populated by the children of the under-class and working-class, the necessary resources to do their jobs well.

The ultimate answer to the "excellence vs. equity" debate which began this dissertation is that we must achieve both. Every other nation that pursues educational excellence does so very inequitably. Japan, Great Britain, Germany, and every other country that has supposedly "surpassed" the United States in educational excellence

has a two-tiered system that typically tracks the children of the lower classes into vocational or "practical" training. This allows them to concentrate their resources on the few children of the elite who, not surprisingly, achieve at a high level. America does not, and should not, follow their lead.

The promise of America requires equality of educational opportunity. Such equality is not possible with the current system of education finance that prevails in America. Fairness is the word most synonomous with equity, and it is not fair that the upper classes are often allowed to virtually "pass" wealthy schools on to their children as some sort of inheritance. Instead, funding should be based on the expense involved in **properly** educating the children who attend a school. This standard of fairness requires the radical overhaul of an American system that more often than not produces and reproduces the "savage inequalities" so poignantly detailed by Jonathan Kozol.

BIBLIOGRAPHY

Benson, C. (1991). "Definitions of Equity in School Finance in Texas, New Jersey, and Kentucky." Harvard Journal on Legislation, 28, 401-422.

Camp. W., Thompson, D., and Crain, J. (1990). "Within District Equity: Desegregation and Microeconomic Analysis." The Impact of Litigation and Legislation on Public School Finance: Adequacy, Equity, and Excellence. Deborah Verstegen and Julie Underwood, Eds., New York, NY: Ballinger.

Childs, T. S. and Shakeshaft, C. (1986). "A Meta-Analysis of Research on the Relationship Between Educational Expenditures and Student Achievement." Journal of Education Finance, 12, 191-222.

Chubb, J. and Moe, T. (1990). Politics, Markets, and American Schools. Washington, DC: The Brookings Institute.

Coleman, J. S. (1966). Equality of Educational Opportunity. Washington, DC: U.S. Department of Health, Education and Welfare.

Coleman, J. S. (1990). Equality and Achievement in Education. Boulder, CO: Westview Press.

Coons, J., Clune, W., and Sugerman, S. (1970). Private Wealth and Public Education. Cambridge, MA: Harvard University Press.

Crown, P. (1991, October). Oklahoma House of Representatives Fiscal Staff. Memorandum to the author.

Crown, P. (1992, May). Oklahoma House of Representatives Fiscal Staff. Memorandum to the author.

Ferguson, R. (1991). "Paying for Public Education: New Evidence on How and Why Money Matters." Harvard Journal on Legislation, 28, 465-498.

Flygare, T. (1983). "School Finance A Decade After Rodriguez." Phi Delta Kappan, 64, 477-78.

Guthrie, J., Garms, W., and Pierce, L. (1988). School Finance and Education Policy. Englewood Cliffs, NJ: Prentice Hall.

Hanushek, E. (1986). "The Economics of Schooling." Journal of Economic Literature, 24, 1141-1177.

Hanushek, E. and Kain, J. (1972). "On the Value of Equality of Educational Opportunity." On Equality of Educational Opportunity. Frederick Mosteller and Daniel Moynihan, Eds. New York, NY: Vintage Books, A Division of Random House.

Hanushek, E. (1975). "Teacher Characteristics and Gains in Student Achievement: Estimation Using Micro-Data." American Economic Review, 61, 280-292.

Jencks, C. and Brown, M. (1975). "Effects of High Schools on Their Students." Harvard Educational Review, 45, 273-324.

Johnson, G. (1992). Personal Interview. Oklahoma City, Oklahoma, June.

Johnson, J. (1991). "A Review and Measurement of School Finance Equity in Oklahoma." (Unpub. Class Paper, University of Oklahoma.)

Johnson, J. (1991). Personal Interview. Oklahoma City, Oklahoma, October.

Kozol, J. (1991). Savage Inequalities. New York, NY: Crown.

Long, D. (1983). "Rodriguez: The State Courts Respond." Phi Delta Kappan, 64, 481-84.

MacPhail-Wilcox, B. and King, R. (1986). "Production Functions Revisited in the Context of Educational Reform." Journal of Education Finance, 12, 191-222.

Mosteller, F. and Moynihan, D. P. (1972). On Equality of Educational Opportunity. New York, NY: Vintage Books, A Division of Random House.

Murnane, R. "Interpreting the Evidence on 'Does Money Matter?'" Harvard Journal on Legislation, 28, 457-464.

Natale, J. A. (1990). "Just Desserts." American School Board Journal. 20-25, 42.

Raulston, T. (1991). "Student Achievement in Oklahoma: An Analysis." (Unpub. Creative Component, Oklahoma State University.)

Sachs, J. (1990). "Shaping Education Behind the Scenes." American School Board Journal, 23-25.

Salmon, R. and Alexander, M. D. (1990). "State Legislative Responses." The Impact of Litigation and Legislation on Public School Finance: Adequacy, Equity, and Excellence. Deborah Verstegen and Julie Underwood, Eds. New York, NY: Ballinger.

Sparkman, W. (1990). "School Finance Challenges in State Courts." The Impact of Litigation and Legislation on Public School Finance: Adequacy, Equity, and Excellence. Deborah Verstegen and Julie Underwood, Eds. New York, NY: Ballinger.

Terlip, D. (1991). Personal Interview. Oklahoma City, Oklahoma, October.

Thompson, C. (1992). Personal Interview. Oklahoma City, Oklahoma, December.

Verstegen, D. and Underwood, J. Eds. (1990). The Impact of Litigation and Legislation on Public School Finance: Adequacy, Equity, and Excellence. New York, NY: Ballinger.

Wall Street Journal. (1991). "Teacher Quality Rises with Improved Pay, Concern for Schools." 5 December.

Wise, A. (1968). Rich Schools, Poor Schools: The Promise of Equal Educational Opportunity. Chicago, IL: University of Chicago Press.

Wise, A. and Gendler, T. (1989). "Rich Schools, Poor Schools: The Persistence of Unequal Education." The College Board Review, 12-17, and 36-37.

Wood, R. C., Bass, G., Camp, W. and Thompson, D. (1989). "Recent School Finance Litigation in California, Kentucky, Louisiana, Oklahoma, and Texas." School Business Affairs, 55, 32-36.

Wright, D. E. III, and Hirlinger, M. (1992). "Equity in Urban Service Delivery: An Analysis of Resource Allocation in the U. S. Public Schools." (Paper presented at the 1992 Southwestern Political Science Association Meeting, Austin, Texas, March.)

VITA

Kenneth Ellinger

Candidate for the Degree of

Doctor of Education

Thesis: FUNDING, ACHIEVEMENT AND EQUITY IN OKLAHOMA'S PUBLIC SCHOOLS: DOES MONEY MATTER?

Major Field: Higher Education

Area of Specialization: Political Science College Teaching

Biographical:

Personal Data: Born in Pauls Valley, Oklahoma on February 11, 1959, the son of Wayne and Jeanne Ellinger. Engaged to be married to Vanessa Borges in the Summer of 1993.

Education: Graduated from Weatherford High School in Weatherford, Oklahoma in May, 1977; received Bachelor of Arts degrees in Government and History from East Central University in May, 1981; received Master of Arts degree in Political Science from Vanderbilt University in December, 1986; completed requirements for the Doctor of Education degree in Political Science College Teaching at Oklahoma State University in December, 1992.

Professional Experience: Taught government and history and coached boys and girls tennis at Ardmore High School, Ardmore, Oklahoma from 1982-1983 and at Midwest City Carl Albert High School, Midwest City, Oklahoma from 1990-1991; Taught political science at East Central University in Ada, Oklahoma from 1986-1987; taught political science and history at Murray State College in Tishomingo, Oklahoma from 1987-1990. Taught political science at Oklahoma Junior College in Oklahoma City, Oklahoma in 1992; Assistant Professor of Political Science at Jarvis Christian College in Hawkins, Texas from 1992-1993.