EQUITY IN URBAN SERVICE DELIVERY:

AN ANALYSIS OF RESOURCE

ALLOCATION IN THE U.S.

PUBLIC SCHOOLS

By

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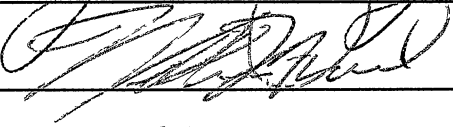the Degree of
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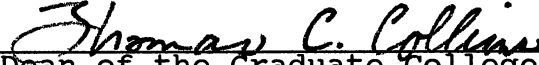AN ANALYSIS OF RESOURCE

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CHAPTER I

INTRODUCTION

Since the early 1960s, academicians, public
administrators, to some extent the judiciary, and average
citizens increased their concerns over local government
service delivery. A large body of research examines the
distribution of community services with regard to various
factors. Some factors studied in service delivery include
the racial or ethnic composition of an area (Boyle and
Jacobs 1982), economic characteristics of a neighborhood
(Mladenka and Hill 1977, 1978), or the degree of power or
powerlessness vis a vis another area of city hall (Berger
and Neuhaus 1977; Warren and Warren 1977).

However, much of the interest is cyclical in nature,
increasing due to extraneous events such as the civil
disturbance in the mid-1960s, but declining after the crisis
passes or interest inevitably decreases. Apparently, such
is the norm, for socioeconomic problems since those most
affected often have the least power to press the issue with
government officials (Berger and Neuhaus 1977).

Undoubtedly, much of the attention in the 1970s
focusing on equity of urban service delivery was a
product of the Hawkins v. Town of Shaw (1971) decision.
In this case the Fifth Circuit Court of Appeals concluded it
was unconstitutional to racially discriminate in the
provision of such public services as streets and lighting,

and subsequently required an equalization of those services. Indeed, a significant amount of the subsequent research clearly is driven by the belief that widespread inequity in services is the norm, and that the situation found in Shaw, Mississippi, is representative of a far greater national problem.

Perhaps surprisingly, even in the most sophisticated studies, researchers do not find substantial incidents of significant service inequity (Levy, Meltsner, and Wildavsky 1974). This may be attributable to the lack of actual inequity. However, Hero (1986) argues that lack of inequity is due to the use of improper variables or methodological problems. Despite these problems, the lack of support for claims of inequity has failed to end the belief of citizens that inequity exists in the delivery of urban services (but see Meier, Stewart, and England 1991).

Research and discussion of the equity issue in urban service delivery is dominated by one or a combination of four themes: first, the examination of the actual situation in a community (Levy, Meltsner, and Wildavsky 1974; Mladenka 1981); second, an attempt to develop normative values to guide future decision makers (Catanese 1984); third, the promulgation of solutions to achieve equity (Boyle and Jacobs 1982; Lineberry and Welch 1974); fourth, research into the decision processes which affect equity (Jones et al. 1978; Lipsky 1980). Each theme, while providing further insight into the equity issue, nonetheless often ignores the others or presents information of limited value.

However, Levy, Meltsner, and Wildavsky (1974) and Lineberry and Welch (1974) seek to go beyond the mere

examination of numbers. Instead, they try to focus on the
policy results. Both studies try to explain what determines
the service distribution in a community. Lineberry and
Welch (1974) argue that what is needed in the study of the
equity issue is a focus on policy objectives, not just the
output measures used in most studies. In other words,
policies ought to be evaluated according to what they set
out to perform.

The present research contends that although the before
mentioned four themes contribute much to our understanding
of the equity issue, they lack two crucial aspects. First,
this study agrees with Lineberry and Welch (1974) that the
typical examination of urban service is overly concerned
with outputs of service delivery. Dollars budgeted and
expended or the miles of adequately paved roads in an area
really do not tell one about policy; at best one can only
make inferences. Thus, this research recognizes that policy
outputs are far easier to measure, but that by themselves
fail to tell the whole story. Moreover, previous service
delivery research is descriptive, providing general
information about urban bureaucratic decision processes and
government (Hero 1986).

Second, this manuscript contends that much previous
research tries to examine an overabundance of services in
the effort to discover inequity. It seems as though many
earlier studies search for a problem, inequity, until they
discover one. Yet, as stated earlier, no widespread
patterns of inequity are found in any of the examined
cities. Therefore, a more appropriate methodology is to
evaluate several cities' services (Lineberry 1977), examine

a single city over a long period of time (Mladenka 1989), or undergo extensive examination of one or two services (Levy, Meltsner, Wildavsky 1974). If a government is providing inequitable service, it is likely a result of patterned behavior which is more likely to be discovered by thorough analysis of one service, rather than by a cursory examination of many services.

The purpose of this paper is to study the U.S. public school system to ascertain its compliance with the equity principle of service delivery. This is achieved through use of the model developed by Levy, Meltsner, and Wildavsky (1974) in their examination of various services in Oakland, California. The paper is organized into three major sections. The first includes an overview of the equity literature, in regard to service delivery. Next, the paper discusses the equity issue as it relates to school funding. Finally, using the Levy, Meltsner, and Wildavsky (1974) model, the distribution of resources in the U.S. public school system is determined and evaluated.

CHAPTER II

EQUITY THEORY LITERATURE

Delivery of Services

A primary task of local government is providing various services to residents of the community (Leach and O'Rourke 1988). Yet, for the most part, a city's services receive little thought by the average citizen. As long as the trash is picked up, the roads are reasonably maintained, and the police force is visible, most residents are essentially satisfied (Morgan 1984; Sharp 1990). It is only when these services are perceived as being poorly performed or inequitably distributed that citizens become agitated and increase demands on their government.

The delivery of local services hinges on the interaction of numerous variables, some of which may not be compatible with others. Demands for service originate with residents or interest groups whose requests may conflict with one another (Lipsky 1980). The demand may lack rationality, obtainability (politically or socially), or economic reality (Burchell and Listokin 1981). All that matters to the person or group making the demand is that quick action is taken.

An excellent example of such a situation was the Community Action Program and its dictum of "maximum feasible participation" during the height of the War on Poverty,

which sought to involve the poor and the service users in designing and delivering urban service programs. The demand by blacks, other minorities, and the service users ran headlong into the counter-demand of the established power centers to retain control of the programs, the desire of the Johnson administration to involve people in daily decision-making processes, and the fear of federal, state, and local bureaucrats that too much participation was dangerous and may cause them to lose their jobs. As a result, no one came away truly believing their interests were represented; thus, causing the program to eventually be all but terminated.

The Courts' Role In The Equity Issue

For the most part, local governments are not bound by legal requirements to provide residents with a specified minimum level of service. Indeed, the courts are rather reluctant in establishing such requirements, only stating that services be provided to all residents in a fair and equitable manner (Lineberry 1977). Even when service patterns are judged unequal, all the courts are willing to do is compel local governments to equalize service delivery (Morgan 1984).

Furthermore since <u>Hawkins</u> v. <u>Shaw</u> (1971), courts have been less willing to find discrimination simply based on the identification of white neighborhoods having better services than black neighborhoods. In addition to showing discriminatory purpose, plaintiffs now have to prove discriminatory intent (Rossum 1980). Thus, courts will allow rules of local governments, even those that have disproportionately negative impacts on racial minorities, to

stand. This occurs because these rules do not necessarily prove discriminatory intent (Sharp 1990).

While the courts are hesitant to interfere with the level of services provided by a local government, they are more explicit in defining the power municipalities may acquire in order to provide services to residents. In "Dillon's Rule," Justice Dillon (as summarized in Harrigan 1985) writes that:

> ...municipal government could exercise only those powers specifically granted to them by state legislatures or those powers indispensable for carrying out the responsibilities that the legislatures have assigned them.

By making local government dependent upon state government, Dillon gives state government the ability to limit a local government's services or to shape them as the state sees fit. A state either by legislative decree or by use of mandates affects the nature of local service for many communities (Buckwater 1982; Harrigan 1988). For instance, in the mid-to-late 1800s, the New York state legislature took action against New York City for its provisions of such services as education and welfare (Allswang 1986; Chudacoff and Smith 1988; Harowitz 1977).

While the courts never fully enforce Dillon's Rule in regard to all local services, state governments use the ruling to limit local government to providing only those services necessary to promote the health, safety, and welfare of city residents (Judd 1984). More recently, state governments use the ruling to address such issues as zoning and school funding. However, beginning in the 1970s the courts began to take an increasing interest in one form of local government --the school district. Some state courts

have shown a willingness to step in and instruct states to pursue more equitable funding schemes and to even regulate school board policies (Dresang and Gosling 1989; Irons 1988).

A common belief of many individuals is that local government is more responsive to the needs of citizens than the national government (Engel 1985; Morlan and Martin 1981). Local service delivery is also argued to be subject to greater citizen control since residents are more apt to know who is in charge and what service they really need (Berger and Neuhaus 1977; Clay and Hollister 1983; Downs 1981; Stone, Whelan, Murin 1986). The equity issue in general and the Hawkins, Serrano, and Hobson decisions in particular raise serious questions about just how responsive local government really is, and the true degree of local control.

More specifically, the Hawkins v. Shaw (1971) case shows that local control leads to a denial of services to minority neighborhoods. This is evident by a lack of sanitary sewers, lighted and paved streets, and large water mains in black-occupied neighborhoods (Lineberry 1977, 9, 15, 130-131). Additionally, in Serrano v. Priests (1971) the California Supreme Court overturned state legislation (local control) which makes education a function of local wealth (Levy, Meltsner, and Wildavsky 1974). The state's "equalization" schemes were ruled ineffective in regard to the inequalities that exist between the school tax rate and educational expenditure. Finally, in Hobson v. Hansen (1967), a case that deals explicitly with discrimination in the allocation of school finances within a particular school

district, Judge Skelly Wright orders equalization of
expenditures to +/- five percent from school to school
(Lineberry 1977, 15). While, these cases suggest that local
control of services leads to inequity, many empirical
studies have not found this to be
the case.

Unfound Inequities

As stated earlier, many researchers believe that the
Hawkins decision is the beginning of countless equity based
lawsuits due to the perceived belief of widespread inequity
in local services. However, numerous communities of varying
size have been examined in the effort to ascertain how great
inequity is in local service delivery. Researchers have
examined the distribution of various services in Oakland,
California (Levy, Meltsner, and Wildavsky 1974), San
Antonio, Texas (Lineberry 1977), Detroit, Michigan (Jones et
al. 1978), Chicago, Illinois (Weicher 1971), New York City,
New York (Blank, Immerman, and Rydell 1969; Boyle and
Jacobs, 1982), Houston, Texas (Mladenka and Hill 1977),
Boston, Massachusetts (Nivola 1978), Philadelphia,
Pennsylvania (Lyon 1970), and Washington D.C. (Bloch 1974),
but no evidence is uncovered supporting the belief of major
inequity. Moreover, the only area where inequity is found
to any degree is in public school funding, which is a result
of unequal financial resources due to disparities in the
property tax.

Efficiency of Service Delivery
and Coproduction

Perhaps as a result of the failure to find widespread inequity in service delivery, other researchers turn their attention to examining the equity issue as related to the principles of efficiency. Aronson and Schwartz (1981) and Harrigan (1988) summarize the problems with the basic forms of revenue for state and local government. They find that most local taxes tend to be regressive. This affects persons with low income levels more than those with high income levels. This is achieved through driving up the "cost" of services for those in lower income levels.

Additionally related to the principles of efficiency and equity is the coproduction or coprovision of services (Sharp 1990). Research by Brudney and England (1983) is often cited as the authority on coproduction, although others--Whitaker (1980), Sharp (1980), Rich (1981), Sundeen (1985, 1988), and Warren, Rosentraub, and Harlow (1984)-- have discussed the concept. Brudney and England (1983) identify four key dimensions of the concept of coproduction. They say that coproduction recognizes: (1) the importance of active citizen participation in service provision; (2) the "positive" constructive nature of their contributions; (3) the role of voluntary, cooperative action in service delivery; and (4) the importance of collective organizations for effectiveness and for coordination with government officials. Simply stated, coproduction is a system in which the consumers of a service contribute to its production or delivery, thereby replacing exclusive government involvement.

Coproduction includes much (such as citizen involvement on advisory boards) which does not substantially replace government resources for providing demanded public services and goods. Thus, Ferris (1984, 1988) narrows coproduction with his concept of coprovision. Ferris (1984, 1988) says that coprovision concentrates on those voluntary activities which directly reduce demands on governmental resources in order to develop meaningful alternatives to government. As governments at all levels are faced with problems of meeting constant demands for public services, while their revenue bases are declining, coproduction and coprovision of services are increasing (Connelly and Wright 1991). However, the debate over coproduction and its effectiveness or efficiency is unresolved (Percy 1984). Percy (1984) explains that analyzers have not determined how to evaluate the efficiency of coproduction. Additionally, he points out that it is possible for some coproduction strategies to be harmful and inefficient. Similarly, Ferris (1984) finds that in some instance coprovision may add new costs to service delivery (for exceptions see Connelly and Wright 1991; Levine 1984).

Moreover, concerns regarding equity have been raised about coproduction. The problem as Rosentraub and Sharp (1981) argue is that the more affluent individuals and neighborhoods are in better positions to take advantage of coproduction programs. Put differently, some equity analysts believe that some coproduction strategies seem to give an additional advantage to groups having the resources--time, money, physical mobility, and organizational skills--to make investments in quality

services, while ignoring the problems of groups that do not have those resources (Sharp 1990). While evidence of this is not entirely conclusive, some has found that individuals with higher incomes are more likely to be involved in coproduction than those with lower incomes (Warren, Rosentraub, and Harlow 1984).

Coproduction or volunteerism in public schools, as an organized effort to bring parents, businesses, and other professionals into schools as unpaid aides, is a fairly recent growing social movement (Cetron, Soriano, and Gayle 1985; Cetron and Gayle 1991; Jones 1991; Michael 1990). Indeed, in an attempt to gather information on this subject and in conjunction with the promotion of the concept of volunteerism, the U.S. Congress has urged analyses of schools using volunteers (Michael 1990). While findings are preliminary, some suggest that schools in well-to-do areas-- possibly those areas with well-informed or knowledgeable citizens and few minorities--are more likely to use and benefit from volunteers, than schools in poorer areas (Michael 1990).

Politicalized Governments

Another study dealing with the equity issue, albeit somewhat indirectly, is Mladenka's (1981) examination of the affect politicalized governments have on urban service delivery. Much of the literature written before Mladenka's study argues that politicalized local governments deliver service contingent upon loyalty and support of the residents for the government (Allswang 1986; Chudacoff and Smith 1988). Mladenka (1981) examines situations in Houston and

Chicago, and finds that politicalized local governments do
not operate in such a manner. Indeed, Mladenka (1981) finds
that the norm is a bureaucraticized delivery process and
that this is the typical decision mechanism in most American
communities.

Summary

In summary, while there is a long-standing belief that
inequity in city services is the norm, there is little if
any support for such a claim. By all appearances, the
Hawkins and perhaps even the Serrano case are deviations.
However, such a conclusion does not fit with what our senses
reveal and does not mesh with our perceptions of the
situation in many communities. All we need to do is drive
through the "poor part of town" to witness firsthand the
level of inequity in community services, especially in
regard to public education structures and opportunity.
Moreover, Lovrich (1974) finds that blacks and "Mexican
Americans" believe that local agencies should spend more
money in the area of public education, while Anglo voters
are satisfied with the existing levels of expenditure and
even prefer that less money be spent on this area of public
policy. Similarly, Scavo (1990) found vastly differing
political agendas among black and white public
administrators and elected officials. This suggests that
indeed, in regard to education, public school districts are
the one service area where inequity in resources appears to
be an ongoing problem.

CHAPTER III

EQUITY AND PUBLIC SCHOOLS

One of the last remaining policy areas which has not
experienced an extensive infusion of federal domination or
control is the public education system in the United States.
However, federal financial assistance did increase in the
mid-1960s. Additionally, laws requiring education
accessibility for all children regardless of race or
national origin, a standard established in 1954 after the
Brown decision, have expanded to include handicapped status.
This has been achieved through Title I of the Elementary and
Secondary Education Act of 1965, which provided funds to
assist schools attended by children from low-income
families, and the Education of All Handicapped Children Act
of 1975 (Meier, Stewart, and England 1989, 30). While both
conditions, increasing federal assistance and extending
education accessibility, were the norm, the public school
system is still largely the province of state and local
government (Digler 1989; Dye 1988). Moreover, as Kagan
(1989) states, the United States is possibly the only
western or democratic nation still without a national
education policy or governing body, especially since Britain
under the Thatcher government established a national
curriculum in 1988 (Heidenheimer, Heclo, and Adams 1990).
This is despite the fact that education is increasingly seen
by many to be the key to solving such problems as crime,

unemployment, welfare dependency, and other socioeconomic
ills (Burtless 1987; Henig 1985; Kozol 1985; Murray 1984).
Moreover, education is viewed as the major vehicle upon
which a person's life chances--the ability of one to
participate fully in political, social, and economical
issues as measured through high school graduation and
dropout rates (Meier, Stewart, and England 1989)--rest upon
(Heidenheimer, Heclo, and Adams 1990).

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Consequences of No National
Education Policy

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One of the results of not having a national education
policy is that continuous changes in curriculum, teacher
training, and accreditation are monitored in Washington by
only one bureau of the Department of Education
(Heidenheimer, Heclo, and Adams 1990). Moreover, states are
permitted to establish individual policies, which in turn
are interpreted by local school boards (Henig 1985).
However, state education policies are so broad, they might
as well be non-existent. This possibly leads to the 1983
Reagan administration release of a report from the National
Commission on Excellence in Education, entitled A Nation
at Risk (National Commission on Excellence in Education
1983). This report condemns the overall "mediocre" state of
education in the U.S. and claims that had such a state been
imposed by a foreign nation, we would have considered it "an
act of war." The report's authors sound a call for
excellence in U.S. education, describing what they see as
the problems, while offering many possible solutions
(Connelly 1990, 152-153). However, the report may have

directed the education community attention toward
educational excellence and efficiency, but away from equity
concerns (Berne 1988; Colvin 1989; Jones-Wilson 1986; Malen
and Robins 1988; one exception is Valverde 1988). Still,
state education policies, until recently, have remained
broad and ambiguous since many elected state government
officials did not regard public education as primarily a
state responsibility, and accordingly funded elementary and
secondary education at bare minimum levels (Dresang and
Gosling 1989). Nevertheless, state funding of public
education has increased (Cetron, Soriano, and Gayle 1985;
Pelissero and Morgan 1987) and even become a state priority
(Leach and O'Rourke 1988). This was likely due to federal
reductions in education funding, especially Title I funds,
during the Reagan administration, coupled with the message
given by Reagan's first Secretary of Education, Terrel Bell,
that states make education their number-one priority (Bell
1988). Today funding of public education is evolving into a
hot potato between all three branches of state government
and between local and state authorities (Alder and Lane
1985; Kirst 1984).

While the federal government provides slightly over six
percent of the financial support for elementary and
secondary education nationwide, it is unsurprising that the
increasing state interest in funding of public education
varies. Some states pay significant costs, while other
states pay only minimal costs. Additionally, state school
aid per pupil varies, with some states giving high aid,
while other states give low aid (see table 1).
Furthermore, variation in state funding also leads to

substantial variations in other education related areas, such as teacher salaries, student-teacher ratios, and graduation rates (see table 2).

Development of Public Primary Education

To some degree, the history and development of public education in the United States is responsible for the inequity in public education funding, thus, causing differences in service. As early as 1647, the Massachusetts elders encountered difficulty in convincing persons that they should pay a tax used to educate another person's child (Dye 1988). Until the early 1800s, education was held as the responsibility of first, the family, and then private organizations (usually churches) (Leach and O'Rourke 1988). Formal education was viewed by many as a sign of aristocracy; people argued it was not needed, while politicians boasted about their lack of it (Leach and O'Rourke 1988). Unsurprisingly, education became the province of the upper class and those municipalities willing to fund public education.

Starting in the late 1700s, sentiment began to shift toward public support for education. First, the national government, under the Northwest Ordinance of 1787, offered land grants for public schools built in the new territories (Saffell 1984). Second, by 1820, a majority of the existing states wrote into their own constitutions that basic education was a responsibility of the state government (Leach and O'Rourke 1988). Third, in 1842, the New York legislature established a public funded and managed school system in New York City (Engel 1985). This developed into

the pattern in virtually every state for the next one hundred plus years (Dresang and Gosling 1989). On the surface, at least it appeared that state and local government support for elementary and secondary public education was, for all intent and purpose, finally becoming the norm rather than the exception.

However, as Chudacoff and Smith (1988) and Kagan (1989) write, state-local government support for public education was incomplete in some locales, as well as non-existent in others. Many state and local governments possessed no budgets for public schools, the availability of competent teachers was minimal, and the quality of the resulting education students receive was questionable. Funding and resources, even in this period, were recognized as the crucial variables in public education. It was not until the late 1800s that a method is finally found which allows for some stability in funding--the local property tax (Leach and O'Rourke 1988). Ironically, this early solution later becomes the center of the debate concerning inequity in resources.

The Property Tax Debate

Undoubtedly, the local property tax, which every school district relies upon for most of its funds, exemplifies the basic financial equity issue in regard to the funding of elementary and secondary public education. As a source of revenue, the local property tax is "the mainstay of public school finance" (Engel 1985), even though districts are trying to diversify their funding sources. Local property tax advantages for school districts are many. It is

seemingly easy to administer, is subject to some degree of popular control, and, to a large degree, is resistant to all but serve fluctuations in the local economy (Aronson and Schwartz 1981).

For all the apparent advantages, the tax is also criticized. While the tax seems easily administered, the assessment process itself is judged quite arbitrary. Another problem is that since the monies a school district receives are based on the value of assessed property, and it is unlikely any two districts have the same value, the monies raised by the tax can (and often do) vary substantially.

Harrigan (1988) and Leach and O'Rourke (1988) find that the local property tax leads to tremendous variation and disparity in public education funding. Those school districts that contain property of higher assessed value are usually better funded than districts with lesser values of property. Even if a district with an assessed property value of $10,000,000 is to tax its residents at 100 percent of the value, it is never able to approach the money available in a district whose assessed value was $75,000,000, but only taxes its residents at 20 percent. For many individuals and groups, the inequity in school districts is perhaps the best example of inequity in services and is one that is examined by state courts and the U.S. Supreme Court.

Finally, the tax is regressive; thus, families of low incomes actually pay proportionally more out of their income for their children's education than a family with a higher income, even in the same state and district (Aronson and

Schwartz 1981; Dresang and Gosling 1989; Dye 1988). This thesis becomes the central argument in two significant state court cases dealing with inequity in school district funding: <u>Serrano</u> v. <u>Priest</u> (1971), and <u>San Antonio Independent School District</u> v. <u>Rodriguez</u> (1973).

Court Rulings

In <u>Serrano</u> the California Supreme Court agreed with John Anthony Serrano that differential property tax bases, coupled with state "equalization" schemes, which caused unacceptable inequities, could not stand the test of the equal protection clause. The court ruled that the existing school finance system was invalidated and called for a "wealth free" state-aid formula. This allowed the state to raise property taxes in property-rich districts, while giving more aid to the property-poor districts. The <u>Serrano</u> decision, was important in itself, but played only a limited legal impact, since it was a state court ruling and not a federal decision. Its importance lies in states' fears of similar suits. Nevertheless, what was needed to address school funding on a national scale was to show that inequity was a result of differences in the local property tax; thus, causing a violation of one or more clauses in the U.S. Constitution. This is the tactic used by the complainants in the <u>Rodriguez</u> case decided in 1973 by the U.S. Supreme Court.

The <u>Rodriguez</u> case argued that inequity in public school financial support due to differences in the local property tax violated the equal protection clause of the Fourteenth Amendment. A three-judge federal district court

in 1971 concluded that the Texas financing scheme drew
distinctions between groups of citizens depending upon the
wealth of the district in which they live. This created a
disadvantaged class composed of persons living in property-
poor districts. Thus, the variations in the Bexar County,
San Antonio, school districts were unacceptable. Counsel
for the complainants argue that one's educational
opportunity should not rest on the wealth of one district or
area relative to another (Birkby 1983; Irons 1988). This
argument is clearly taken from the Serrano decision.
Nevertheless, in examining the situation between rural and
urban areas that developed in Texas and the applicable state
laws, the U.S. Supreme Court in 1973 ruled that the
complainants failed to prove their claim of discrimination
due to differences in economic resources. The U.S. Supreme
Court ignored evidence which demonstrates that the property
tax structure tends generally to key school resources to
local wealth. Instead, the Court used stray data from
Connecticut showing that the property tax system there does
not necessarily disadvantage poor families. Furthermore,
the ruling states that the economic resources develop
naturally and is outside of the state's control (Birkby
1983). As a result, the Court refused to order Texas to
redesign its funding of public education. Subsequently, no
national standard is promulgated in regard to the use of
local property taxes for support of public education.

Each of the above cases, while significant,
concentrates on a single output: revenue. More importantly,
the two cases signal a major shift from the previous tactic
of examining school policies which begins with the Brown v.

The <u>Board</u> <u>of</u> <u>Education</u> decision in 1954. In <u>Brown</u> education is determined an opportunity and a right that must be made available to all on equal terms. Thus, the outcomes resulting from past policies are examined. The two <u>Hobson</u> v. <u>Hansen</u> cases (1967 and 1971) are also important attempts by the federal courts and researchers to examine the results of policy. While all three cases are based to a large degree on traditional measures of outputs (dollars expended, number of minority teachers, students per school), the intent is to determine what the eventual policy outcomes become as a result of established policy. Moreover, in the <u>Hobson</u> decisions, the court rules that outcomes are more important than sterile measures of expenditures (Harowitz 1977). Why those preparing and presenting the <u>Rodriguez</u> case before the Supreme Court did not follow the same tactic is somewhat a mystery and might contribute to the Court's eventual decision to reject the claim that inequity in the property tax issue is a violation of the Fourteenth Amendment.

CHAPTER IV

HYPOTHESES

As demonstrated by the previous discussion, research into equity issues is generally driven by a concern for ascertaining quantitative outputs. However, some researchers such as Levy, Meltsner, and Wildavsky (1974) and Lineberry and Welch (1974) argue for the examination of policy outcomes (Meier, Stewart, and England 1991). The idea is to make the study of outcomes relevant to potential change in public policy. Unfortunately, their position is largely ignored by those examining the equity issue.

Perhaps this unmet challenge is most obvious in the aggregate studies which seek to examine equity in the public education system in the United States. Both academic and legal cases examine such outputs as revenue differences, the number of students per teacher, per capita municipal expenditure, average dollars of educational expenditure per child, and dollars spent on texts and supplies. The intent is to determine the degree of inequity in the distribution of resources. Little if any inequity is found to exist. However, these aggregate measures tend to give obscure information and hide substantial differences that actually exist between schools. Still, questions about resource allocation within a district are unanswered.

The thesis here contends that much of the earlier work on equity in public schools is flawed. Furthermore, a

better approach is measuring policy outcomes, especially immediate outcomes, not distant impacts. We argue that the measures developed by Levy, Meltsner, and Wildavsky (1974) offer the best way to determine equity in the distribution of resources within a school district. Many of the traditional measures such as dollars spent per pupil, resource distribution based on the number of minority children per school, and dollars spent on supplies are not, in and of themselves, sufficient indicators of policy. Instead, such measures as student-teacher ratios, the distribution of experienced teachers and their educational levels, teacher transfer policies, and the use of various types of funding (local, state, national) available to the district are more significant indices of policy.

This research also contends that the distribution of property tax revenue is not an important factor in public school equity. Indeed, a movement to improve equity developed in the 1970s as states began to reexamine and redesign their public school funding formulas (Berne 1988; Dresang and Gosling 1989; Fuhram 1982; Harrison 1976; Swinford 1991; Verstegen and Salmon 1989). Additionally, this trend is continuing (Natale 1990; Swinford 1991), but more importantly numerous studies suggest that substantial long-lasting equity improvements did not follow reforms (Berne 1988; Geski 1982; Harrigan 1988; Kearney and Chen 1990; Pelissero and Morgan 1987; Thompson and Camp 1988; Verstegen and Salmon 1989). Furthermore, we argue that inequity in public education resources is not caused by previously established policy, but by the cumulative decisions on where to assign teachers and the distribution

of various funds available to a local school district.

In order to test these overriding hypotheses, many factors are examined. They include the following: the sources of funding (local, county, state, and federal) and their purpose and limits, the distribution of teachers by experience and degree levels, and teacher transfer patterns. The purposes of examining these factors are, to check the restrictions on how funds are allocated, to determine whether schools classified by income and minority percentage have substantially different student-teacher ratios, to ascertain whether these same schools have major differences in the experience and the educational attainment levels of their teachers, and to see who benefits from teacher transfer patterns. We hypothesize that the distributional pattern for teachers forms a U-shaped curve, as found in Oakland by Levy, Meltsner, and Wildavsky (1974). Poor, minority students and rich, white children receive more resources than the near poor, middle class. Alternatively, we might expect a L-shaped curve in which case the poor, minority children receive the most resources. If this is the case, there is a negative relationship between income, percentage white, and benefits. Finally, the possibility exists that we might find a J-shaped curve, in which there is a positive relationship between income, percentage white, and benefits.

CHAPTER V

RESEARCH DESIGN

We base our study on data from a mail survey of school
districts across the United States. Districts surveyed
possess relatively similar demographic characteristics
(e.g., school enrollment size, city population, and location
within a metropolis). Comparing similar districts (the most
similar approach), instead of using contrasting districts
(the most different approach), offers several advantages.
Most importantly, this strategy seems to be the best way to
control for any extraneous factors. Additionally, this
increases the capacity for in-depth analysis, which gives
better insight and clarity. Furthermore, this approach
lessens the likelihood of exaggeration of differences
between extremely contrasting schools.

At this time we are using data from the following
school districts: East Baton Rouge Parish, Louisiana,
Hamilton City, Ohio, Lewiston, Maine, McKeesport,
Pennsylvania, New Rochelle City, New York, and Tuscaloosa
City, Alabama. The schools in these districts draw the bulk
of their enrollment from the immediate neighborhoods.
Because of this, and through the use of census tract data
from 1980, we associate resources in each school with a
particular economic group. This is possible because nearly
every elementary school in these districts lie in a separate
census tract. Furthermore, all the districts provide an

ethnic distribution of pupils by school. Using the data
from the census tracts and from the school districts, each
elementary school is categorized, both by racial and
economic classification. These groupings are important for
the study because no real figures are kept by the districts
(or were made accessible to us by the districts) as to the
economic classification for each school.

The data, from the School Year (SY) 1989-1990, are
limited in several ways. The resources distributed among
the elementary schools represent only a portion of the
overall resources in each school district. The middle
schools and the high schools, serving much larger
neighborhoods than elementary schools, are not included in
our research due to the racial and economic classification
of students being much more difficult. Moreover, if these
schools were included in the research, the impact on
student-teacher ratios by racial and economic classification
would be severely diluted to the point of being useless.
Also by using the elementary schools, we are able to better
measure the impact of the student-teacher ratios. Finally,
by using elementary schools we were able to receive
information on the distribution of teachers by educational
attainment and experience.

CHAPTER VI

FINDINGS

The Financial Environment

The allocation of funds and resources begins with the acquisition of monies. For the school districts examined in this study the process is much like the process found in Oakland (Levy, Meltsner, and Wildavsky 1974). The district must obtain its funds from a number of disparate sources, each with its own restrictions on how its particular portion of the funds allocated is to be used in the school system. The primary source of funds, as mentioned earlier, is the local property tax. It is the search and use of these various sources and their respective restrictions which inevitably exert influence on a school district's allocation of funds and resources to the schools and their programs.

Sources of Funding

In discussing the sources of funding, we utilize the typology provided by Levy, Meltsner, and Wildavsky (1974). Three criteria are employed. First, are funds from each source used for any purpose (open-ended), or are they used for a particular purpose (close-ended)? Second, do the funds have a set limit, either through formula or legal restrictions? Third, do funds for a particular purpose come from one level of government or a combination of the three?

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We use the first two criteria to classify the major sources of funding in each of the six school districts for SY 1989-1990. Next, we group the sources, either by general or special category, by employing the third criteria. This data is found in tables 3, 4, 12, 13, 21, 22, 30, 31, 39, 40, 49, and 50. As indicated in these tables, the two major sources of revenue are local and state funds. In every school district the combined total of local and state funds was at least ninety percent of the district's total sources of funding.

Local Revenue: The Dominance of the Local Property Tax

While our research is limited in regard to specific knowledge on each school district's property tax, it does show that the property tax accounts for between seventeen to seventy-seven percent of each school district's total expenditures. Like most school districts, these six are fiscally independent from the city and thereby can only raise certain portions of its property tax elements by voter approval. While the successfulness of each independent school district in gaining voter approval for increases in various elements of the property tax is not clear, many school districts are unsuccessful.

As Levy, Meltsner, and Wildavsky (1974) argue, fiscal independence for a school district has the result of making education one of the few public services under direct citizen control. Therefore, the school district must link any possible increase in the millage rate to both perceived and actual state cuts in funds for public education, which

cause adverse impacts on the quality of education provided by the school system.

State Revenue: A Disaster in Disguise

State financial aid for public education comes to many school districts in a lump sum of general monies, for the most part, classified as "State Aid to Schools." Some states receive state contributions known as "basic and equalization aid." Unfortunately, the complicated nature of school fund equalization is a wholly separate topic and one which is not addressed in this paper, but lends itself to more research.

In many states the legislature's basic concern is equalization of the state contributions to schools. Additionally, in some states the legislatures are interested in the extent to which local school districts are free from overwhelming dependence on the local property tax base. However, the problem is that the dependence is now shifting to aid provided by the state, with the districts competing for a constantly shrinking revenue source. Furthermore, while most of this aid is determined by district enrollment, non-enrollment aid is not necessarily targeted for needy districts (Pelissero and Morgan 1987). State funding for the school districts examined ranged from seventeen to approximately sixty percent of the district's total budget, with most districts receiving at least fifty percent. Tables 4, 13, 22, 31, 40, and 50 provide the funding breakdown and each category's importance to the overall budget of the district. This dependence has its advantages, some of which help try to alleviate the problems identified earlier in regard to the equity issue in funding. First,

the use of state funds reduces the burden facing the district in regard to general operation needs. As a result, the school district has more money to offer non-essential programs, such as foreign language, college preparatory, and other humanity courses.

On the other hand, dependency on state appropriations has distinct disadvantages. Since the state provides nearly one-half of most district's operating funds, the school system can suffer losses if the state experiences any significant downturns in the economy. This has been and continues to be a problem in many states. Dependency also puts the district at the mercy of state legislators, especially those individuals who hold that education is not a state priority, or those who view the monies given to particular school districts with jealousy.

In sum, there are few or no alternatives to state aid. It is highly doubtful that there will be increases in federal funds. Additionally, there are not any plausible private sources that can provide substantial amounts of money. Therefore, school districts must accept the money.

Federal Revenue

The three largest elements of federal revenue are the education funds received under Title I of the Elementary and Secondary Education Act of 1965 (ESEA), PL 874 (the program to aid federally impacted areas), and EHA-B PL 94-142 (special education). However, the federal funds allocated to the school districts only amount to approximately ten percent of their total funding, even in the highest case.

Distribution of Teachers

When discussing the distribution of teachers and the equity issue, several kinds of data are needed in order to fully address the issue. First, one must examine student-teacher ratios. For this purpose, we counted all teachers in the elementary schools (tables 5, 14, 23, 32, 41, and 51), regardless of the source of funding (district, state, or that done through the Elementary and Secondary Education Act (ESEA)). The assumption is that when one child is in a smaller class, he or she is receiving "something extra," which would be denied to a student in a larger class size.

Second, the distribution of teachers by years of experience (total years taught and years taught only in the individual school system) and educational attainment level is needed (Marcoulides and Heck 1988). In theory, experience and credentials both increase teaching ability. Thus, two schools may have equal student-teacher ratios, but have unequal resources, because one school has experienced teachers with advanced degrees, while the other school does not.

Individual Schools in the Survey

New Rochelle City, New York

Distribution of Teachers. In New Rochelle City, New York (table 7) when schools are categorized by minority percentage, the lowest student-teacher ratios occur in the middle percentage minority schools. The middle (34 to 67 percent) proportion minority schools have student-teacher ratios of about 13:1, while the students in the lowest (0-33

percent) and highest (68 percent and above) minority schools
have ratios of 17:1 and 14.5:1, respectively. When schools
are classified by median income of applicable census tracts,
the results are similar. The lowest student-teacher ratios
are found in the middle income group, about 13:1, while
the lowest and highest income groups have ratios of
14.5:1 and 15.7, respectively. No significant differences
exist between schools based on their income classification
(see table 8). The only statistically significant
difference of student-teacher ratios exists between those
schools with the middle proportion of minorities and those
with the lowest amount of minorities. Thus, the
distributional pattern is an inverted or "upside down" U-
shaped curve, resulting in schools with a medium proportion
of minorities actually having significantly lower student-
teacher ratios than the predominantly white schools.

The Distribution of Experience and Degree Levels. In
table 9 we present the distribution of teachers by their
total years taught in all schools (overall) and by the
number of years taught only in the New Rochelle City
schools. When overall experience is considered, teachers
who have the greatest experience are more commonly found in
the lowest and highest minority schools and in the lowest
and highest income schools. Thus, the schools with the
lowest student-teacher ratios (the middle income and middle
minority percentage schools) have teachers with less
experience than the other schools. The results are the same
when teaching experience only in New Rochelle City schools
is considered. The lowest and highest percent minority and
the lowest and highest income schools have more experience,

although the lowest percent minority and highest income schools have a slight advantage over the highest minority and lowest income schools. Therefore, the distributional pattern is a U-shaped curve.

Table 10 indicates the distribution of teachers by educational attainment. As found earlier, schools with the greatest and lowest proportion of minorities and the lowest and highest incomes have teachers with the highest levels of education. For instance, in schools with middle income and middle minority percentage students, only 82 and 85 percent of the teachers have Masters or Doctorates, while almost 90 percent of the teachers have Masters or Doctorates in all the other groups. Again, this distribution produces a U-shaped curve.

Overall, there is not a clear curve in the New Rochelle City elementary schools. The resulting distributional pattern of experience and degree level for teachers in the New Rochelle City school system indicates an U-shaped curve. The poor, minority students and the rich, white children have better qualified teachers than those found in the middle income and middle minority percentage schools. However, this pattern is tempered due to the inverted or "upside down" U-curve found regarding student-teacher ratios, in which middle income and middle minority percentage schools have lower student-teacher ratios than the poorer, higher minority and the higher income and lower minority schools.

Furthermore, teacher transfers do not seem to have a great effect on the distribution of teachers since only one teacher transfer occurred in SY 1989-1990 (see table 11).

While, this transfer was within the same minority percentage (middle), it was from a middle to a low income school.

Lewiston, Maine

Distribution of Teachers. In Lewiston (table 16) when schools are categorized by minority percentage and median income of applicable census tracts, the lowest student-teacher ratios (20.7:1) occur in the low minority, high income schools. However, the high minority, low income schools have comparable student-teacher ratios of 21:1. Obviously, no significant differences emerge between these schools (see table 17). Thus, the distributional pattern is a slight J-shaped curve, since the highest income and lowest minority schools have only marginal advantages over the poor, minority schools.

The Distribution of Experience and Degree Levels. In table 18 we present the distribution of teachers by their total years taught in all schools (overall) and by the number of years taught only in the Lewiston schools. When overall experience is considered, teachers who have the greatest experience are found in the lowest minority, highest income schools. The results are the same when teaching experience only in Lewiston schools is considered. The predominantly white, highest income schools have teachers with more experience, than the poor, minority schools. Again, the distributional pattern is a J-shaped curve.

Table 19 indicates the distribution of teachers by educational attainment. As found earlier, schools with the lowest proportion of minorities and the highest incomes have

teachers with the highest levels of education. For example, in these schools (high income, white) 19 percent of the teachers have Masters degrees, while only 16 percent of the teachers in poor, minority schools have Masters degrees. Therefore, this distribution pattern indicates a J-shaped curve. In sum, the Lewiston elementary schools have a J-shaped curve in regard to the distribution of teachers and the distribution of teacher experience and degree levels.

McKeesport, Pennsylvania

Distribution of Teachers. In McKeesport (table 25) when schools are categorized by minority percentage and the median income of applicable census tracts, the lowest student-teacher ratios (24.7:1) occur in the low minority, high income schools. However, the high minority, low income schools have comparable student-teacher ratios of 25.3:1. Obviously, no significant differences emerge between these schools (see table 26). Thus, the distributional pattern is a slight J-shaped curve, since the highest income and lowest minority schools have only marginal advantages.

The Distribution of Experience and Degree Levels. In table 27 we present the distribution of teachers by their total years taught in all schools (overall) and by the number of years taught only in the McKeesport schools. When overall experience is considered, teachers who have the greatest experience are found in the high minority, low income schools. The results are the same when teaching experience only in McKeesport schools is considered. The predominantly minority, low income schools have teachers with more experience, than the rich, white schools. Now,

the distributional pattern is a L-shaped curve, in which the rich, white schools receive less experienced teachers.

Table 28 indicates the distribution of teachers by educational attainment. Teachers with the highest levels of education are located in schools with the lowest proportion of minorities and the highest incomes. In these schools (high income, white) about 38 percent of the teachers have Masters degrees, while only 35 percent of the teachers in poor, minority schools have Masters degrees. Similar to the student-teacher ratios, this distribution pattern indicates a J-shaped curve with benefits increasing as percent white and income increase.

In sum, minority children in lower income schools have more experienced, but less educated teachers, and slightly higher student-teacher ratios. In contrast, white students in high income schools have lower student-teacher ratios, and teachers with a higher degree of educational attainment, but less experience. In general, the results suggest a J-shaped curve for student-teacher ratios and teacher educational attainment, although this is qualified somewhat by the L-shaped pattern found for teacher experience.

Hamilton City, Ohio

Distribution of Teachers. In Hamilton City (table 34) when schools are categorized by minority percentage, the lowest student-teacher ratios occur in the highest percentage minority schools. These schools have student-teacher ratios of 16:1, while the students in the lowest and middle minority schools have ratios of about 24:1 and 23:1, respectively. Significant differences exist between the

student-teacher ratios of the highest minority schools and
both of the lower minority filled schools (see table 35),
although the difference between both of these lower minority
schools is not significant.

When schools are classified by median income of the
applicable census tracts, the results are similar. The
lowest student-teacher ratios are found in the lowest income
group, about 19:1, while the highest and middle income
groups have ratios of about 25:1 and 23:1, respectively.
Again, significant differences exist between the student-
teacher ratios of the lowest income schools and both of the
higher income schools, although they are strongest between
the lowest and highest income groups (see table 35).
However, none of these differences are as statistically
significant as the differences found when schools were
categorized by race and as in the racial comparison, the
differences were not substantial between the middle and
highest income schools. Thus, the resulting distributional
pattern is a L-shaped curve, where the lowest income and
highest minority schools have the lowest student-teacher
ratios, followed by the middle income and middle level
minority schools, and lastly by the highest income and
lowest minority schools.

The Distribution of Experience and Degree Levels. In
table 36 we present the distribution of teachers by their
total years taught in all schools (overall). Hamilton City
did not provide teacher experience for only their schools.
When overall experience is examined, teachers who have the
greatest experience are more commonly found in the lowest
minority schools and in the highest income schools. Schools

with the lowest student-teacher ratios (the lowest income and the highest minority percentage schools) have slightly less experienced teachers. Consequently, the distributional pattern of experience is most like a J-shaped curve.

Table 37 indicates the distribution of teachers by educational attainment. Schools with the greatest proportion of minorities and the lowest incomes (the same schools that have the lowest student-teacher ratios) have teachers with the highest levels of education. The lowest minority and highest income schools have the teachers with the lowest levels of education. For instance, in these schools approximately 45 and 42 percent, respectively, of the teachers have Masters degrees. On the other hand, in the highest minority and lowest income schools, approximately 51 and 46 percent, respectively, of the teachers have Masters degrees. The middle income and middle minority percentage schools were between all the other schools. Similar to the curve found for student-teacher ratios, this distribution generates a L-shaped curve.

In conclusion, the poor, minority schools have the lowest student-teacher ratios and teachers with the most education (both L-shaped distributions). Conversely, the rich, white schools have the highest student-teacher ratios, teachers with the least education, although they have teachers with the most experience.

East Baton Rouge Parish, Louisiana

Distribution of Teachers. In Baton Rouge (table 44) when schools are categorized by minority percentage, the lowest student-teacher ratios occur in the highest

percentage minority schools. These schools have student-
teacher ratios about 16:1, while the students in the lowest
and middle minority schools have ratios of about 19:1 and
16:1, respectively. Significant differences exist between
the student-teacher ratios of the lowest minority schools
and both of the higher minority filled schools (see table
45), although the difference between both of these higher
minority schools is not significant.

When schools are classified by median income of the
applicable census tracts, the pattern is somewhat different.
Still, the lowest student-teacher ratios are found in the
lowest income group, about 15:1, but the three other income
groups all have relatively close ratios of around 16.5:1.
Significant differences do not exist between the groups of
schools when classified by income, despite small
differences. Nevertheless, as indicated in classification
by race, the resulting distributional pattern is a L-shaped
curve, where the lowest income and highest minority schools
have the lowest student-teacher ratios, followed by the
middle income and middle level minority schools, and lastly
by the highest income and lowest minority schools.

The Distribution of Experience and Degree Levels. In
table 46 we present the distribution of teachers by their
total years taught in all schools (overall). Baton Rouge
did not provide teacher experience for only their schools.
When overall experience is examined, teachers who have the
greatest experience are found in the lowest minority
schools. This suggests a J-shaped curve in regard to
teacher experience. However, when teacher experience is
analyzed for the impact of income, all schools are virtually

the same. The range of experience between the group of
schools is 13.7 to 14.3 years. Subsequently, schools with
the highest student-teacher ratios (the highest income and
the lowest minority percentage schools) have somewhat more
experienced teachers, especially when considering the impact
of race. Thus, the distributional pattern of experience is
a J-shaped curve when minority percentages are considered,
while no curve is indicated when examining income.

Table 47 indicates the distribution of teachers by
educational attainment. In regard to race, schools with the
greatest and the lowest proportion of minorities have
teachers with slightly lower levels of education, than the
middle percentage of minorities. In the lowest
and highest minority schools around 54 and 52 percent,
respectively, of the teachers have Masters or Doctorate
degrees. In contrast, 57 percent of the teachers in the
middle minority schools have Masters or Doctorate degrees.
Thus, there may be a slight tendency toward an inverted or
"upside down" U-shaped curve. Yet, when examining
educational attainment for the impact of income, it is the
lowest and highest income schools which have the highest
educated teachers. This may suggest a U-shaped curve, in
which the middle income schools do not receive the benefits
of the highest educated teachers.

In sum, the most conclusive distributional pattern was
the L-shaped curve indicated by the identification that the
lowest income and the highest minority schools have the
lowest student-teacher ratios. In general, the distribution
of teacher experience and degree levels was roughly equal,
without any particular income or minority group having

substantial benefits over the other (although there were some differences, as previously noted).

Tuscaloosa City, Alabama

Distribution of Teachers. In Tuscaloosa City (table 53) when schools are categorized by minority percentage and median income of the applicable census tracts, the lowest student-teacher ratios occur in the highest percentage minority, lowest income schools. These schools have student-teacher ratios of 12:1, while the students in the lowest minority, highest income schools and the middle minority, middle income schools have ratios of about 17:1 and 14:1, respectively. Significant differences exist between the student-teacher ratios of the lowest minority, highest income schools and both of the higher minority, lower income schools (see table 54), although the difference between both of these schools is not significant. Therefore, the resulting distributional pattern is a L-shaped curve, where the lowest income and highest minority schools have the lowest student-teacher ratios, followed by the middle income and middle level minority schools, and lastly by the highest income and lowest minority schools.

The Distribution of Experience and Degree Levels. In table 55 we present the distribution of teachers by their total years taught in all schools (overall). Tuscaloosa City did not provide teacher experience for only their schools. When overall experience is examined, teachers who have the greatest experience are found in the middle minority, middle income schools. This suggests a slight tendency toward an inverted U-shaped curve in regard to

teacher experience. However, the range (11.2 to 11.6 years) of experience between the group of schools is not substantial.

Table 56 indicates the distribution of teachers by educational attainment. Teachers with the highest levels of education are located in schools with the lowest number of minorities and the highest incomes. In these schools 68 percent of the teachers have Masters or Doctorate degrees. In schools with a medium level of minorities and middle incomes 63 percent of the teachers have Masters or Doctorate degrees, while about 62 percent of the teachers in the highest minority, lowest income schools have such degrees. Thus, there is a J-shaped curve, although once again the differences are not tremendous.

In sum, the most conclusive distributional pattern was the L-shaped curve indicated by the identification that the lowest income and the highest minority schools have the lowest student-teacher ratios. Generally the distribution of teacher experience and degree levels was roughly equal, without any particular income or minority group having substantial benefits over the other (although there were some differences, as previously noted).

CHAPTER VII

CONCLUSIONS

New Rochelle City, New York

Overall, the distributional pattern is not conclusive.
The distributional pattern of experience and degree level
for teachers in the New Rochelle City school system
indicates an U-shaped curve. The poor, minority students
and the rich, white children have better qualified teachers
than those found in the middle income and middle minority
percentage schools. Nevertheless, this pattern is tempered
due to the inverted or "upside down" U-curve found regarding
student-teacher ratios, in which middle income and middle
minority percentage schools have the lowest student-teacher
ratios.

Why the J-shaped Curve in Lewiston, Maine
and McKeesport, Pennsylvania?

One possible explanation for the occurrence may be the
deliberate or unintended substitution of federal funds.
Since compensatory funds are supposed to be pure supplements
to the district, funding substitution occurs (see Baron 1971
as an example where substitution does not occur) if the
district cuts back its own personnel in those schools
receiving compensatory personnel. In other words, federal
funds go to eligible children, while the district reduces

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its own funds for those children (for an excellent explanation of this problem see Murphy 1971; Nathan and Doolittle 1985; Nice 1987). However, in order to check for substitution, teachers must be classified into district-funded and compensatory-funded. Both Lewiston and McKeesport failed to make this categorization.

Another possibility is that state aid to the district may not be targeted for needy schools. Additionally, conventional wisdom suggests that affluent citizens are more likely to make their demands known, be involved, and have greater access to the system. Thus, there is the possibility that the superintendent as a result of such pressure, deliberately tried to satisfy rich, white parents, who wanted higher quality education and made more demands than poor, minority parents.

It does not seem that the Lewiston school district's transfer policy caused the J-shaped curve. Indeed, of the three transfers, none were from the poor, minority schools to the rich, white schools (see table 20). Conversely, the McKeesport school district's teacher transfer policy does seem to reinforce the J-shaped pattern of distribution. This policy appears to give advantages to the rich, white schools. Table 29 shows that 25 percent of the teachers transferred went from high minority, low income schools to low minority, high income schools, while the other 75 percent of the transfers remained within the same classification. Although, this is only one year of data, similar data in additional years would make, what appears to be minor inequities, worse. Last, although less likely, the J-shaped curve may be the result of pure chance (a topic for

further research).

Why the L-shaped Curve in Hamilton City,
Ohio, Baton Rouge, Louisiana, and
Tuscaloosa City, Alabama?

One explanation for the L-shaped curve may be that these school districts correctly assign personnel from federally funded compensatory programs (or even state funded equalization programs) to low income and high minority schools. This is in contrast to many school districts which engage in substitution (as mentioned before and described by Murphy 1971; Nathan and Doolittle 1985; Nice 1987). However, neither district classified their teachers as district-funded or compensatory-funded, which is required in order to actually test this explanation.

Another conceivable explanation for the L-shaped curve may be the deliberate or unintended goals of the districts to ensure a rough equality of opportunity and education. It may be deliberate in the hope of avoiding litigation. Thus, it would be the result of unwritten district policy or the result of the whims of the superintendent and his staff. These possibilities are somewhat counter-intuitive, given the history of education in regard to minorities, especially in the southern part of the United States.

An additional, explanation is that the L-shaped curve is a deliberate policy designed to control wild or rambunctious students. Conventional wisdom suggests that minority, lower class students are often difficult to handle. To control such students, the districts may want the lowest student-teacher ratios in schools having the

largest numbers of each category in their enrollment. Furthermore, the district may want the lowest student-teacher ratios, or even the most educated teachers (in the Hamilton City schools) in poor, minority schools, since it is generally assumed that these students require better quality education than rich, white students, in order to have equal opportunities in life.

One factor that may have been expected to help explain the L-shaped curve were these district's teacher transfer policies. Somewhat surprisingly, none of the district's policy helped in this endeavor. The Hamilton City school district's teacher transfer policy (see table 38) allowed nearly 37 percent of its transfers to move from low to higher income schools, while only 26 percent of the transfers went from high to lower income schools. When minority percentage is considered, 42 percent of the transfers went from low to higher minority schools, and 42 percent of the transfers went from high to lower minority schools. While these transfers only include one year, they could change Hamilton City's L-shaped curve, especially when considering income.

Similarly, the data on the Baton Rouge teacher transfers (see table 48) do not suggest that they bring about the L-shaped curve. The data are not conclusive since Baton Rouge did not tell us where each teacher transferred from or to. Instead, they provided how many teachers transferred in or out of each school. Still, it seems that transfers benefit the middle and low minority schools, at the expense of the highest minority schools. Likewise, when the transfers are analyzed in regard to income, the highest

income schools appear to profit at the loss of all the lower
income schools. While these data only highlight one year,
prolonged transfers may cut down the differences that exist
between schools, in regard to student-teacher ratios, as
well as changing the distribution of teacher experience and
degree levels. Consequently, Baton Rouge's L-shaped curve
may be in jeopardy.

Additionally, data on the Tuscaloosa City teacher
transfers (see table 57) do not explain the L-shaped
curve. Conversely, in Tuscaloosa City 50 percent of the
transfers were from high minority, low income schools to
lower minority, higher income schools. Only 12 or 13
percent of the transfers went from high income, low minority
schools to lower income, higher minority schools.
Subsequently, we expect that Tuscaloosa City's L-shaped
curve may be changing.

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APPENDIX

TABLES

TABLE 1

PERCENT OF REVENUE FOR PUBLIC ELEMENTARY & SECONDARY SCHOOLS
AND STATE SCHOOL AID PER PUPIL (ADA), 1988-1989

State	Percent of Revenue			State School Aid Per Pupil Amount ($)
	State	Local	Federal	
Hawaii	91.9	0.1	8.0	4,256
New Mexico	76.6	14.7	8.7	3,330
Washington	72.8	21.3	5.9	3,561
Kentucky	69.9	20.1	10.0	2,706
California	69.1	23.5	7.4	3,262
Alabama	68.6	18.4	13.0	2,217
Delaware	68.1	23.9	8.0	4,010
North Carolina	64.9	28.2	6.9	2,675
Alaska	63.6	27.5	8.9	4,672
West Virginia	63.3	28.0	8.7	2,693
Oklahoma	62.4	28.2	9.4	2,080
Arkansas	60.9	29.8	9.3	2,009
Indiana	60.6	35.3	4.1	2,651
Idaho	60.2	32.8	7.0	1,961
Georgia	59.7	33.2	7.1	2,610
Utah	56.6	37.2	6.2	1,671
Minnesota	56.1	39.5	4.3	2,866
Louisiana	54.9	34.1	11.0	1,934
Mississippi	54.4	30.5	15.0	1,695
South Carolina	53.9	38.1	8.0	2,201
Florida	53.8	40.0	6.3	2,892
Maine	53.5	39.7	6.8	2,693
Wyoming	51.8	43.6	4.6	3,114
Arizona	50.7	45.4	3.9	2,072
North Dakota	50.4	42.2	7.3	1,976
Tennessee	49.7	40.7	9.6	1,714
Montana	48.6	43.1	8.3	2,486
Ohio	47.8	47.2	5.0	2,050
Pennsylvania	46.6	49.0	4.5	2,869
Iowa	46.2	48.2	5.6	2,029
Rhode Island	45.5	50.4	4.1	2,831
Connecticut	45.1	50.9	4.0	3,485
New York	44.0	51.1	5.0	3,537
New Jersey	43.6	52.4	4.0	3,526
Texas	43.4	48.6	8.0	1,898
Kansas	43.2	51.5	5.3	2,142
Massachusetts	41.7	53.8	4.6	2,775
Vermont	41.4	52.8	5.8	2,392
Missouri	40.6	54.0	5.5	1,896
Wisconsin	40.0	55.6	4.5	2,166
Nevada	39.5	56.2	4.3	1,770
Maryland	39.4	55.4	4.6	2,327

TABLE 1 (Continued)

State	Percent of Revenue			State School Aid Per Pupil Amount ($)
	State	Local	Federal	
Colorado	38.6	56.7	4.8	2,004
Illinois	36.7	55.2	8.2	1,910
Michigan	36.3	59.8	3.9	1,808
Virginia	34.7	60.6	4.7	1,732
South Dakota	28.0	63.2	8.8	1,040
Oregon	26.7	67.1	6.3	1,381
Nebraska	24.6	70.3	5.2	982
New Hampshire	7.2	90.0	2.9	326
National Avg.	50.0	43.7	6.3	2,500

Source: <u>States</u> <u>In</u> <u>Profile</u>: <u>The</u> <u>State</u> <u>Policy</u> <u>Reference</u> <u>Book</u>,
        <u>1990</u>.

TABLE 2

NUMBER OF OPERATING PUBLIC SCHOOL DISTRICTS, AVERAGE TEACHER
SALARIES, PUPIL/TEACHER RATIOS, AND HIGH SCHOOL GRADUATION
RATES IN 1988-1989 (EXCEPT GRADUATION RATES)

State	Number of Districts	Teacher Salaries	Pupil/Teacher Ratio	Graduation Rates, 1987-88
Texas	1,071	26,513	17.3	65.1
California	1,018	35,285	22.9	66.1
Illinois	972	31,145	17.2	75.7
Nebraska	834	23,845	15.1	86.7
New York	718	36,654	15.2	62.9
Oklahoma	636	22,000	16.9	72.6
Ohio	612	29,671	18.0	82.8
New Jersey	591	33,037	14.0	77.2
Michigan	562	34,419	20.1	62.4
Missouri	545	25,981	16.2	74.4
Montana	537	24,414	15.8	86.2
Pennsylvania	500	31,248	16.2	78.7
Iowa	433	25,884	15.6	86.4
Minnesota	433	30,660	17.1	90.6
Wisconsin	430	30,779	16.2	84.4
Massachusetts	362	31,909	13.9	76.5
Arkansas	329	21,692	17.1	77.5
Kansas	304	27,360	15.4	82.1
Indiana	302	29,295	17.9	73.7
Oregon	302	29,390	18.3	72.8
Washington	296	29,176	20.2	77.8
Vermont	277	26,861	13.4	78.0
North Dakota	276	22,249	15.6	88.4
Maine	233	24,938	14.9	79.3
Arizona	218	28,684	18.6	64.4
South Dakota	191	20,525	15.5	79.7
Georgia	186	28,038	18.7	62.5
Kentucky	177	24,932	18.2	67.4
Colorado	176	29,550	18.0	73.7
Connecticut	166	37,343	13.3	80.5
New Hampshire	159	26,702	16.0	72.7
Mississippi	152	22,579	18.8	64.8
N. Carolina	140	25,646	18.2	67.8
Tennessee	140	25,619	19.6	67.8
Virginia	138	29,056	16.3	74.0
Alabama	130	25,190	19.3	70.2
Idaho	115	22,734	20.7	78.8
S. Carolina	93	25,498	17.2	66.9
New Mexico	88	25,139	18.9	71.7
Florida	67	26,974	17.4	58.6
Louisiana	66	22,470	18.5	60.1
Alaska	56	41,754	17.3	66.7

TABLE 2 (Continued)

State	Number of Districts	Teacher Salaries	Pupil/Teacher Ratio	Graduation Rates, 1987-88
West Virginia	55	21,094	15.2	76.2
Wyoming	49	27,685	14.5	89.3
Utah	40	22,828	24.7	80.6
Rhode Island	37	34,233	15.0	69.4
Maryland	24	33,700	17.1	74.5
Delaware	19	31,585	16.1	70.1
Nevada	17	28,840	20.2	72.1
Hawaii	1	30,778	21.6	70.8
U.S. Total	15,274			
National Average		29,648	17.6	71.1

Source: <u>States</u> <u>In</u> <u>Profile</u>: <u>The</u> <u>State</u> <u>Policy</u> <u>Reference</u> <u>Book</u>, <u>1990</u>.

TABLE 3

A CLASSIFICATION OF SOURCES OF FUNDING BY PURPOSE
AND LIMIT IN THE NEW ROCHELLE CITY, NEW YORK
PUBLIC SCHOOLS: 1989-1990

Close-Ended	Open-Ended
General Monies: State Aid Local Aid (Including Property Taxes) $63,418,330 (91.5% of Total Expenditures)	N/A
Special Monies: State Aid (including Textbook/Library aid, asbestos inspection, computer software aid, and employment preparatory aid) Federal Aid $5,860,570 (8.5% of Total Expenditures)	N/A
TOTAL EXPENDITURES: $69,278,900	

TABLE 4

SOURCES OF FUNDING AND THEIR RELATIVE IMPORTANCE:
NEW ROCHELLE CITY, NEW YORK, 1989-1990

Name of Source	Dollar Amount	Approximate % of Expenditure
LOCAL SOURCES: General Monies (including property taxes, charges for services, sale of property, investments)	51,994,417	75.1
STATE SOURCES: Basic Aid	11,810,765	17.0
FEDERAL SOURCES:	5,473,718	7.9
TOTAL:	69,278,900	100.0

TABLE 5

BREAKDOWN OF NEW ROCHELLE CITY, NEW YORK ELEMENTARY
SCHOOLS BY THE NUMBER OF TEACHERS, THEIR DEGREES,
AND THE TOTAL NUMBER OF STUDENTS
PER SCHOOL: 1989-1990

Elementary School	Total N of Teachers	N of Students	Educational Attainment of Teachers		
			BS	MS	PhD
Columbus	31	448	3	28	0
Davis	43	615	3	39	1
Jefferson	41	549	7	32	2
Trinity	47	720	10	36	1
Ward	47	799	6	40	1
Webster	47	414	6	34	1
TOTAL	250	3,545	35	209	6

TABLE 6

STUDENT/TEACHER RATIOS IN THE NEW ROCHELLE CITY, NEW YORK
ELEMENTARY SCHOOLS: 1989-1990

MINORITY PERCENTAGE					
0-33		34-67		68-100	
Ward	17.0	Davis	14.3	Columbus	14.5
		Jefferson	13.4		
		Trinity	15.3		
		Webster	10.1		

INCOME CLASSIFICATION					
$30,000 and Above		$15-29,999		$0-14,999	
Davis	14.3	Jefferson	13.4	Columbus	14.5
Ward	17.0	Trinity	15.3		
		Webster	10.1		

TABLE 7

RATIOS OF STUDENTS TO ALL TEACHERS IN NEW ROCHELLE CITY,
NEW YORK ELEMENTARY SCHOOLS: 1989-1990

Schools Classified by Percentage of Minority Students		
	0-33	34-67	68-100
Mean Ratio of Students to All Teachers in Group	17.1	13.3	14.5
Standard Deviation of Mean Ratio	0.0	1.95	0.0
	(N=1)	(N=4)	(N=1)

Schools Classified by Income Class of Surrounding Census Tract (1980 data)		
	$30,000	15-29,999	0-14,999
Mean Ratio of Students to All Teachers in Group	15.7	12.9	14.5
Standard Deviation of Mean Ratio	1.35	2.15	0.0
	(N=2)	(N=3)	(N=1)

TABLE 8

STATISTICAL TEST OF HYPOTHESIS OF DIFFERENCES IN
STUDENT/TEACHER RATIOS: NEW ROCHELLE
CITY, NEW YORK 1989-1990

Matrix of Student's t-statistic for Elementary Schools by
Percent Minority

	0-33	34-67	68-100
0-33	--	3.89*	No t-test possible.
34-67	--	--	-1.23
68-100	--	--	--

Matrix of Student's t-statistic for Elementary Schools
Classified by Income

	$30,000 and Above	$15-29,999	$0-14,999
$30,000 and Above	--	-1.78	-1.26
$15-29,999	--	--	1.29
$0-14,999	--	--	--

One Tail Test of Significance
p < .025 = *

TABLE 9

AVERAGE YEARS OF TEACHER EXPERIENCE IN NEW ROCHELLE CITY,
NEW YORK ELEMENTARY SCHOOLS: 1989-1990

	Overall	New Rochelle City Only
All Schools	17.0	13.8
Minority Percentage		
0-33	19.2	17.0
34-67	16.0	13.0
68-100	18.9	14.0
Income		
$30,000 and Above	18.5	16.0
$15-29,999	15.4	12.3
$0-14,999	18.9	14.0

TABLE 10

TEACHER EDUCATIONAL ATTAINMENT IN NEW ROCHELLE CITY, NEW
YORK ELEMENTARY SCHOOLS: 1989-1990 (IN PERCENT)

	4 Year Degrees	Masters	Ph.D.	Total
All Schools	14.0	83.6	2.4	100.0
Minority Percentage				
0-33	12.8	85.1	2.1	100.0
34-67	14.9	82.2	2.9	100.0
68-100	9.7	90.3	0.0	100.0
Income				
$30,000 and Above	9.8	88.0	2.2	100.0
$15-29,999	17.7	79.2	3.1	100.0
$0-14,999	9.7	90.3	0.0	100.0

TABLE 11

TEACHER TRANSFERS IN THE NEW ROCHELLE CITY, NEW YORK ELEMENTARY SCHOOLS: 1989-1990

Minority Percentage in School Transferred From:	Minority Percentage in School Transferred To:		
	0-33	34-67	68-100
0-33	--	--	--
34-67	--	1	--
68-100	--	--	--

Income Class in School Transferred From:	Income Class in School Transferred To:		
	$30,000 and Above	$15-29,999	$0-14,999
$30,000 and Above	--	--	--
$15-29,999	--	--	1
$0-14,999	--	--	--

TABLE 12

A CLASSIFICATION OF SOURCES OF FUNDING BY PURPOSE
AND LIMIT IN THE LEWISTON, MAINE
PUBLIC SCHOOLS: 1989-1990

Close-Ended	Open-Ended
General Monies: State Aid Local Aid (Including Property Taxes) $21,028,846 (93.3% of Total Expenditures)	N/A
Special Monies: Federal Aid (Including Compensatory Aid under the Elementary and Secondary Education Act--Chapter 1, Chapter 2, PL94-142 (special education), and other programs) $1,517,936 (6.7% of Total Expenditures)	N/A
TOTAL EXPENDITURES: $22,546,782	

TABLE 13

SOURCES OF FUNDING AND THEIR RELATIVE IMPORTANCE:
LEWISTON, MAINE, 1989-1990

Name of Source	Dollar Amount	Approximate % of Expenditure
LOCAL SOURCES: General Monies (including property taxes, rentals)	8,478,551	37.6
STATE SOURCES: (Income and Sales taxes)	12,550,295	55.7
FEDERAL SOURCES: ESEA 688,978 PL94-142 182,524 (special education) Pre-School 229,404 Handicapped Project Adult Education 49,357 Others 367,673	1,517,936	6.7
TOTAL:	22,546,782	100.0

TABLE 14

BREAKDOWN OF LEWISTON, MAINE ELEMENTARY SCHOOLS BY THE
NUMBER OF TEACHERS, THEIR DEGREES, AND THE TOTAL
NUMBER OF STUDENTS PER SCHOOL: 1989-1990

Elementary School	Total N of Teachers	N of Students	Educational Attainment of Teachers		
			BS	MS	PhD
Farwell	17	354	15	2	0
Longley	15	303	13	2	0
Martel	16	351	15	1	0
McMahon	28	567	21	7	0
Montello	49	941	45	4	0
Pettingill	16	364	11	5	0
Wallace	7	147	5	2	0
TOTAL	148	3,027	125	23	0

TABLE 15

STUDENT/TEACHER RATIOS IN THE LEWISTON, MAINE
ELEMENTARY SCHOOLS: 1989-1990

	0-2.9	3 and Above
Minority Percentage		
Income Classification	$15,000 and Above	$0-14,999
	Farwell 20.8	Longley 20.2
	McMahon 20.3	Martel 21.9
	Montello 19.2	Wallace 21.0
	Pettingill 22.8	

TABLE 16

RATIOS OF STUDENTS TO ALL TEACHERS IN LEWISTON, MAINE
ELEMENTARY SCHOOLS: 1989-1990

Schools Classified by Percentage of Minority Students		
	0-2.9	3 and Above
Schools Classified by Income of Surrounding Census Tract (1980 data)		
	$15,000 and Above	$0-14,999
Mean Ratio of Students to All Teachers in Group	20.7	21.0
Standard Deviation of Mean Ratio	1.60	.70
	(N=4)	(N=3)

TABLE 17

STATISTICAL TEST OF HYPOTHESIS OF DIFFERENCES IN
STUDENT/TEACHER RATIOS: LEWISTON,
MAINE, 1989-1990

Matrix of Student's t-statistic for Elementary Schools by
Percent Minority and Income Classification

	0-2.9% $15,000 and Above	3% and Above $0-14,999
0-2.9% $15,000 and Above	--	-.33
3% and Above $0-14,999	--	--

TABLE 18

AVERAGE YEARS OF TEACHER EXPERIENCE IN LEWISTON, MAINE
ELEMENTARY SCHOOLS: 1989-1990

		Overall	Lewiston Only
All Schools		17.0	15.1
Minority Percentage And Income Classification			
0-2.9%	$15,000 and Above	17.6	15.7
3% and Above	$0-14,999	16.2	14.3

TABLE 19

TEACHER EDUCATIONAL ATTAINMENT IN LEWISTON, MAINE
ELEMENTARY SCHOOLS: 1989-1990 (IN PERCENT)

	4 Year Degrees	Masters	Ph.D.	Total
All Schools	84.5	15.5	0.0	100.0

Minority Percentage
And
Income Classification

		4 Year Degrees	Masters	Ph.D.	Total
0-2.9%	$15,000 and Above	80.9	19.1	0.0	100.0
3% and Above	$0-14,999	84.0	16.0	0.0	100.0

TABLE 20

TEACHER TRANSFERS IN THE LEWISTON, MAINE
ELEMENTARY SCHOOLS: 1989-1990

Minority Percentage and Income Classification in School Transferred From:	Minority Percentage and Income Classification in School Transferred To:	
	0-2.9% $15,000 and Above	3% and Above $0-14,999
0-2.9% $15,000 and Above	2	1
3% and Above $0-14,999	--	--

TABLE 21

A CLASSIFICATION OF SOURCES OF FUNDING BY PURPOSE
AND LIMIT IN THE McKEESPORT, PENNSYLVANIA
PUBLIC SCHOOLS: 1989-1990

Close-Ended	Open-Ended
General Monies: State Aid Local Aid (Including Property Taxes) $22,799,184 (85.0% of Total Expenditures)	Delinquent Taxes $921,563 (3.4% of Total Expenditures)
Special Monies: State Aid (Including reimbursements, and revenue for Social Security) Federal Aid (Including Compensatory Aid under the Elementary and Secondary Education Act--Chapter 1, Chapter 11, and other programs) $3,100,973 (11.6% of Total Expenditures)	N/A
TOTAL EXPENDITURES: $26,821,720	

TABLE 22

SOURCES OF FUNDING AND THEIR RELATIVE IMPORTANCE:
McKEESPORT, PENNSYLVANIA, 1989-1990

Name of Source		Dollar Amount	Approximate % of Expenditure
LOCAL SOURCES: (including property taxes, and delinquent taxes,)		14,435,572	53.8
STATE SOURCES: (basic instructional subsidy)		11,142,787	41.6
FEDERAL SOURCES: ESEA Others	884,856 358,505	1,243,361	4.6
TOTAL:		26,821,720	100.0

TABLE 23

BREAKDOWN OF McKEESPORT, PENNSYLVANIA ELEMENTARY SCHOOLS BY
THE NUMBER OF TEACHERS, THEIR DEGREES, AND THE TOTAL
NUMBER OF STUDENTS PER SCHOOL: 1989-1990

Elementary School	Total N of Teachers	N of Students	Educational Attainment of Teachers		
			BS	MS	PhD
Centennial	29	734	20	9	0
George Washington	26.5	671	14.5	12	0
White Oak	25.5	629	16.5	9	0
TOTAL	81	2,034	51	30	0

TABLE 24

STUDENT/TEACHER RATIOS IN THE McKEESPORT, PENNSYLVANIA
ELEMENTARY SCHOOLS: 1989-1990

Minority Percentage	0-24.9%		25% and Above	
Income Classification	$15,000 and Above		$0-14,999	
	White Oak	24.7	Centennial	25.3
			George Washington	25.3

TABLE 25

RATIOS OF STUDENTS TO ALL TEACHERS IN McKEESPORT,
PENNSYLVANIA ELEMENTARY SCHOOLS: 1989-1990

	Schools Classified by Percentage of Minority Students	
	0-24.9%	25% and Above
Schools Classified by Income of Surrounding Census Tract (1980 data)		
	$15,000 and Above	$0-14,999
Mean Ratio of Students to All Teachers in Group	24.7	25.3
Standard Deviation of Mean Ratio	0.0	0.0
	(N=1)	(N=2)

TABLE 26

STATISTICAL TEST OF HYPOTHESIS OF DIFFERENCES IN
STUDENT/TEACHER RATIOS: McKEESPORT,
PENNSYLVANIA, 1989-1990

Matrix of Student's t-statistic for Elementary Schools by
Percent Minority and Income Classification

	0-24.9% $15,000 and Above	25% and Above $0-14,999
0-24.9% $15,000 and Above	--	T-test not possible due 0.0 standard deviation.
25 and Above $0-14,999	--	--

TABLE 27

AVERAGE YEARS OF TEACHER EXPERIENCE IN McKEESPORT,
PENNSYLVANIA, ELEMENTARY SCHOOLS: 1989-1990

	Overall	McKeesport Only
All Schools	19.9	19.5
Minority Percentage And Income Classification		
0-24.9% $15,000 and Above	18.4	18.2
25% and $0-14,999 Above	22.9	22.1

TABLE 28

TEACHER EDUCATIONAL ATTAINMENT IN McKEESPORT,
PENNSYLVANIA ELEMENTARY SCHOOLS:
1989-1990 (IN PERCENT)

		4 Year Degrees	Masters	Ph.D.	Total
All Schools		63.0	37.0	0.0	100.0
Minority Percentage And Income Classification					
0-24.9%	$15,000 and Above	62.2	37.8	0.0	100.0
25% and Above	$0-14,999	64.7	35.3	0.0	100.0

TABLE 29

TEACHER TRANSFERS IN THE McKEESPORT, PENNSYLVANIA
ELEMENTARY SCHOOLS: 1989-1990

Minority Percentage and Income Classification in School Transferred From:	Minority Percentage and Income Classification in School Transferred To:	
	0-24.9% $15,000 and Above	25% and Above $0-14,999
0-24.9% and Above	--	--$15,000
25% and Above $0-14,999	1	3

TABLE 30

A CLASSIFICATION OF SOURCES OF FUNDING BY PURPOSE
AND LIMIT IN THE HAMILTON CITY, OHIO
PUBLIC SCHOOLS: 1989-1990

Close-Ended	Open-Ended
General Monies: State Aid Local Aid (Including Property Taxes) $24,501,059 (68.7% of Total Expenditures)	Investment Earnings, and Other $519,525 (1.5% of Total Expenditures)
Special Monies: State Aid (Equalization & Grants) Federal Aid $10,638,146 (29.8% of Total Expenditures)	
TOTAL EXPENDITURES: $35,658,730	

TABLE 31

SOURCES OF FUNDING AND THEIR RELATIVE IMPORTANCE:
HAMILTON CITY, OHIO, 1989-1990

Name of Source	Dollar Amount	Approximate % of Expenditure
LOCAL SOURCES: General Monies (including property taxes, and investments)	14,403,893	40.4
STATE SOURCES: Basic Aid and Equalization	21,233,383	59.5
FEDERAL SOURCES:	21,454	0.1
TOTAL:	35,658,730	100.0

TABLE 32

BREAKDOWN OF HAMILTON CITY, OHIO ELEMENTARY SCHOOLS BY THE
NUMBER OF TEACHERS, THEIR DEGREES, AND THE TOTAL
NUMBER OF STUDENTS PER SCHOOL: 1989-1990

Elementary School	Total N of Teachers	N of Students	Educational Attainment of Teachers		
			BS	MS	PhD
Adams	24.75	544	8.00	16.75	0
Buchanan	18.00	376	7.00	11.0	0
Cleveland	22.70	549	14.00	8.7	0
Fillmore	27.20	673	16.00	11.2	0
Grant	9.50	230	3.50	6.0	0
Harrison	31.00	472	15.00	16.0	0
Hayes	16.30	423	8.00	8.3	0
Jefferson	30.00	505	15.00	15.0	0
Lincoln	28.00	658	17.00	11.0	0
Madison	23.00	458	12.00	11.0	0
Monroe	15.30	385	10.00	5.3	0
Pierce	22.50	497	13.00	9.5	0
Van Buren	22.50	472	12.00	10.5	0
TOTAL	290.75	6,242	150.5	140.25	0

TABLE 33

STUDENT/TEACHER RATIOS IN THE HAMILTON CITY, OHIO
ELEMENTARY SCHOOLS: 1989-1990

MINORITY PERCENTAGE

0-3		4-9.9		10% and Above	
Fillmore	24.7	Adams	21.9	Harrison	15.2
Grant	24.2	Buchanan	20.8	Jefferson	16.8
Hayes	25.9	Cleveland	24.1		
Lincoln	23.5	Monroe	25.1		
Madison	19.9	Pierce	22.0		
		Van Buren	20.9		

INCOME CLASSIFICATION

$19,000 and Above		$15-18,999		$0-14,999	
Cleveland	24.1	Hayes	25.9	Adams	21.9
Fillmore	24.7	Lincoln	23.5	Buchanan	20.8
Grant	24.2	Pierce	22.0	Harrison	15.2
Monroe	25.1	Van Buren	20.9	Jefferson	16.8
				Madison	19.9

TABLE 34

RATIOS OF STUDENTS TO ALL TEACHERS IN HAMILTON CITY, OHIO
ELEMENTARY SCHOOLS: 1989-1990

Schools Classified by Percentage of Minority Students			
	0-3	4-9.9	10 and Above
Mean Ratio of Students to All Teachers in Group	23.6	22.5	16.0
Standard Deviation of Mean Ratio	2.02	1.60	.80
	(N=5)	(N=6)	(N=2)

Schools Classified by Income Class of Surrounding Census Tract (1980 data)			
	$19,000 and Above	15-18,999	0-14,999
Mean Ratio of Students to All Teachers in Group	24.5	23.1	18.9
Standard Deviation of Mean Ratio	.40	1.87	2.51
	(N=4)	(N=4)	(N=5)

TABLE 35

STATISTICAL TEST OF HYPOTHESIS OF DIFFERENCES IN
STUDENT/TEACHER RATIOS: HAMILTON
CITY, OHIO 1989-1990

Matrix of Student's t-statistic for Elementary Schools by
Percent Minority

	0-3	4-9.9	10 and Above
0-3	--	.98	7.13***
4-9.9	--	--	7.52***
10 and Above	--	--	--

Matrix of Student's t-statistic for Elementary Schools
Classified by Income

	$19,000 and Above	$15-18,999	$0-14,999
$19,000 and Above	--	-1.46	-4.91**
$15-18,999	--	--	-2.87*
$0-14,999	--	--	--

One Tail Test of Significance

p < .025 = *
p < .005 = **
p < .0005 = ***

TABLE 36

AVERAGE YEARS OF OVERALL TEACHER EXPERIENCE IN HAMILTON
CITY, OHIO ELEMENTARY SCHOOLS: 1989-1990

All Schools	15.1
Minority Percentage	
0-3	15.7
4-9.9	15.3
10 and Above	13.0
Income	
$19,000 and Above	16.0
$15-18,999	15.2
$0-14,999	14.3

TABLE 37

TEACHER EDUCATIONAL ATTAINMENT IN HAMILTON CITY, OHIO
ELEMENTARY SCHOOLS: 1989-1990 (IN PERCENT)

	4 Year Degrees	Masters	Ph.D.	Total
All Schools	51.8	48.2	0.0	100.0
Minority Percentage				
0-3	54.3	45.7	0.0	100.0
4-9.9	50.9	49.1	0.0	100.0
10 and Above	49.2	50.8	0.0	100.0
Income				
$19,000 and Above	58.2	41.8	0.0	100.0
$15-18,999	56.0	44.0	0.0	100.0
$0-14,999	54.2	45.8	0.0	100.0

TABLE 38

TEACHER TRANSFERS IN THE HAMILTON CITY,
OHIO ELEMENTARY SCHOOLS: 1989-1990

Minority Percentage in School Transferred From:	Minority Percentage in School Transferred To:		
	0-3	4-9.9	10 and Above
0-3	1	2	1
4-9.9	4	2	5
10 and Above	--	4	--

Income Class in School Transferred From:	Income Class in School Transferred To:		
	$19,000 and Above	$15-18,999	$0-14,999
$19,000 and Above	--	--	2
$15-18,999	1	6	3
$0-14,999	4	2	1

TABLE 39

A CLASSIFICATION OF SOURCES OF FUNDING BY PURPOSE
AND LIMIT IN THE BATON ROUGE, LOUISIANA
PUBLIC SCHOOLS: 1989-1990

Close-Ended	Open-Ended
General Monies: State Aid (Including equalization funds, and revenue sharing) Local Aid (Including Property Taxes) Federal Aid (Grant) $170,539,153(75.0% of Total Expenditures)	Investment Earnings and Sales and Use Tax $44,187,271 (19.4% of Total Expenditures)
Special Monies: Local Aid (Percentage of Property Taxes) State Aid (Grant) Federal Aid $12,734,221 (5.6% of Total Expenditures)	N/A
TOTAL EXPENDITURES: $227,460,645	

TABLE 40

SOURCES OF FUNDING AND THEIR RELATIVE IMPORTANCE:
BATON ROUGE, LOUISIANA, 1989-1990

Name of Source	Dollar Amount	Approximate % of Expenditure
LOCAL SOURCES: (including property taxes, Sales and Use taxes, and investments)	83,727,910	36.8
STATE SOURCES: (Basic Aid, Equalization, and Revenue sharing)	131,659,320	57.9
FEDERAL SOURCES:	12,182,285	5.3
TOTAL:	227,460,645	100.0

TABLE 41

BREAKDOWN OF BATON ROUGE, LOUISIANA ELEMENTARY SCHOOLS BY
THE NUMBER OF TEACHERS, THEIR DEGREES,
AND THE TOTAL NUMBER OF STUDENTS
PER SCHOOL: 1989-1990

Elementary School	Total N of Teachers	N of Students	Educational Attainment of Teachers		
			BS	MS	PhD
Audubon	31	634	14	17	0
Baker	26	416	8	18	0
Bakerfield	34	740	22	12	0
Banks	27	453	10	16	1
Beechwood	21	277	8	13	0
Belfair	20	389	7	13	0
Bellingrath	29	546	8	21	0
Bernard	26	358	11	14	1
Broadmoor	29	520	14	15	0
Brookstown	34	524	16	17	1
Brownfields	30	653	14	16	0
Buchanan	33	448	8	25	0
Cedarcrest	27	508	8	19	0
Claiborne	27	469	12	15	0
Crestworth	24	373	11	13	0
Dalton	28	336	12	16	0
Delmont	33	588	16	17	0
Dufrocq	26	402	13	12	1
Eden Park	25	426	12	13	0
Forest	25	373	15	10	0
Glen Oaks	25	411	12	13	0
Goodwood	24	311	11	13	0
Greenbrier	25	481	13	12	0
Greenville	34	467	15	19	0
Harding	17	270	7	10	0
Highland	24	332	5	19	0
Howell	24	380	14	10	0
Jefferson	36	666	19	17	0
La Belle Aire	40	589	20	20	0
Lanier	26	460	8	18	0
La Salle	28	421	8	20	0
Magnolia Woods	32	465	17	15	0
Mayfair	21	390	9	12	0
Melrose	28	482	18	10	0
Merrydale	33	440	13	19	1
Nicholson	26	325	12	14	0
North Highlands	25	503	12	13	0
Northest	55	1136	35	20	0
Northwestern	28	604	15	13	0
Park	32	508	15	16	1
Park Forest	34	477	14	20	0
Parkridge	32	461	15	17	0
Parkview	31	514	15	15	1
Polk	21	310	10	11	0
Progress	22	370	15	6	1
Red Oaks	30	468	18	12	0

TABLE 41 (Continued)

Elementary School	Total N of Teachers	N of Students	Educational Attainment of Teachers		
			BS	MS	PhD
Riveroaks	24	401	11	13	0
Ryan	26	421	14	11	1
Sharon Hills	28	477	12	16	0
Shenandoah	28	518	7	20	1
South Boulevard	18	288	5	13	0
Tanglewood	26	520	14	12	0
Twin Oaks	31	496	10	21	0
University	29	608	15	14	0
Villa del Ray	28	394	12	16	0
Walnut Hills	32	397	8	24	0
Wedgewood	36	670	12	23	1
Westdale	30	300	14	16	0
Westminster	29	427	9	20	0
White Hills	21	326	6	14	1
Wildwood	36	511	17	18	1
Winbourne	24	407	16	8	0
Zachary	41	816	23	18	0
TOTAL	1,767	29,651	819	935	13

TABLE 42

STUDENT/TEACHER RATIOS IN THE BATON ROUGE, LOUISIANA
ELEMENTARY SCHOOLS: 1989-1990

MINORITY PERCENTAGE

0-33		34-67		68 and Above	
Bellingrath	18.8	Audubon	20.5	Banks	16.8
Jefferson	18.5	Baker	16.0	Beechwood	13.2
Northeast	20.7	Bakerfield	21.8	Belfair	19.5
Northwestern	21.6	Bernard	13.8	Brookstown	15.4
Parkview	16.6	Broadmoor	17.9	Claiborne	17.4
Riveroaks	16.7	Brownfields	21.8	Crestworth	15.5
Shenandoah	18.5	Buchanan	13.6	Dalton	12.0
Wedgewood	18.6	Cedarcrest	18.8	Delmont	17.8
		Goodwood	13.0	Dufrocq	15.5
		Greenbrier	19.2	Eden Park	17.0
		Highland	14.7	Forest	14.9
		La Belle A.	14.7	Glen Oaks	16.4
		La Salle	15.0	Greenville	13.7
		Magnolia W.	14.5	Harding	15.9
		Mayfair	18.6	Howell	15.8
		Park Forest	14.0	Lanier	17.7
		Parkridge	14.4	Melrose	17.2
		Red Oaks	15.6	Merrydale	13.3
		Sharon Hills	17.0	Nicholson	12.5
		S.Boulevard	16.0	N.Highlands	20.1
		Tanglewood	20.0	Park	15.9
		Twin Oaks	16.0	Polk	14.7
		Villa del R.	14.1	Progress	16.8
		Walnut H.	12.4	Ryan	16.2
		Westminster	14.7	University	21.0
		White Hills	15.5	Westdale	10.0
		Wildwood	14.2	Winbourne	17.0
		Zachary	19.9		

TABLE 43

STUDENT/TEACHER RATIOS IN THE BATON ROUGE, LOUISIANA
ELEMENTARY SCHOOLS: 1989-1990

INCOME CLASSIFICATION

$20,000 and Above		$16-19,999		$10-15,999		$0-9,999	
Audubon	20.5	Bakerfield	21.8	Banks	16.8	Buchanan	13.6
Baker	16.0	Brookstown	15.4	Belfair	19.5	Crestw.	15.5
Beechw.	13.2	Forest	14.9	Bernard	13.8	Greenv.	13.7
Belling.	18.8	Glen Oaks	16.4	Claibor.	17.4	Harding	15.9
Broadm.	17.9	Highland	14.7	Dalton	12.0	Nicholson	12.5
Brownf.	21.8	Howell	15.8	Delmont	17.8	Polk	14.7
Cedarcr.	18.8	Lanier	17.7	Dufrocq	15.5	S.Blvd.	16.0
Goodwood	13.0	Merrydale	13.3	EdenPark	17.0	University	21.0
Greenbr.	19.2	Northeast	20.7	Melrose	17.2		
Jeffers.	18.5	Progress	16.8	N.Highl.	20.1		
La Belle	14.7	Red Oaks	15.6	Park	15.9		
La Salle	15.0	Walnut H.	12.4	Ryan	16.2		
Magnolia	14.5			Winbour.	17.0		
Mayfair	18.6						
NWern	21.6						
Park F.	14.0						
Parkrid.	14.4						
Parkview	16.6						
Riveroak	16.7						
SharonH.	17.0						
Shenand.	18.5						
Tanglew.	20.0						
Twin O.	16.0						
Villa d.	14.1						
Wedgew.	18.6						
Westdale	10.0						
White H.	15.5						
Wildwood	14.2						
Zachary	19.9						

TABLE 44

RATIOS OF STUDENTS TO ALL TEACHERS IN BATON ROUGE,
LOUISIANA ELEMENTARY SCHOOLS: 1989-1990

Schools Classified by Percentage of Minority Students			
	0-33	34-67	68 and Above
Mean Ratio of Students to All Teachers in Group	18.8	16.3	15.9
Standard Deviation of Mean Ratio	1.61	1.50	2.39
	(N=8)	(N=28)	(N=27)

Schools Classified by Income Class of Surrounding Census Tract (1980 data)				
	$20,000 and Above	16-19,999	10-15,999	0-9,999
Mean Ratio of Students to All Teachers in Group	16.7	16.3	16.6	15.3
Standard Deviation of Mean Ratio	3.89	2.61	2.04	2.42
	(N=30	(N=12)	(N=13)	(N=8)

TABLE 45

STATISTICAL TEST OF HYPOTHESIS OF DIFFERENCES IN
STUDENT/TEACHER RATIOS: BATON ROUGE,
LOUISIANA 1989-1990

Matrix of Student's t-statistic for Elementary Schools by
Percent Minority

	0-33	34-67	68 and Above
0-33	--	3.93***	3.96***
34-67	--	--	.74
68 and Above	--	--	--

Matrix of Student's t-statistic for Elementary Schools
Classified by Income

	$20,000 and Above	16-19,999	10-15,999	0-9,999
$20,000 and Above	--	-.38	-.11	-1.27
$16-19,999	--	--	.31	-.86
$10-15,999	--	--	--	-1.27
$0-9,999	--	--	--	--

One Tail Test of Significance

$p < .0005 = ***$

TABLE 46

AVERAGE YEARS OF OVERALL TEACHER EXPERIENCE IN BATON ROUGE,
LOUISIANA ELEMENTARY SCHOOLS: 1989-1990

All Schools	14.3
Minority Percentage	
0-33	15.4
34-67	14.4
68 and Above	14.0
Income	
$20,000 and Above	14.3
$16-19,999	14.0
$10-15,999	13.7
$0-9,999	14.3

TABLE 47

TEACHER EDUCATIONAL ATTAINMENT IN BATON ROUGE, LOUISIANA
ELEMENTARY SCHOOLS: 1989-1990 (IN PERCENT)

	4 Year Degrees	Masters	Ph.D.	Total
All Schools	46.4	52.9	0.7	100.0
Minority Percentage				
0-33	45.7	53.2	1.1	100.0
34-67	42.6	57.0	0.4	100.0
68 and Above	48.0	51.0	1.0	100.0
Income				
$20,000 and Above	43.1	56.3	0.6	100.0
$16-19,999	52.5	46.7	0.8	100.0
$10-15,999	48.5	50.1	1.4	100.0
$0-9,999	41.9	58.1	0.0	100.0

TABLE 48

TEACHER TRANSFERS IN THE BATON ROUGE, LOUISIANA ELEMENTARY SCHOOLS: 1989-1990

	Net Result (Gain/Loss) After Teacher Transfers
<u>Minority Percentage</u>	
0-33	+ 6
34-67	+17
68 and Above	-23
<u>Income</u>	
$20,000 and Above	+19
$16-19,999	- 4
$10-15,999	-10
$0-9,999	- 5

TABLE 49

A CLASSIFICATION OF SOURCES OF FUNDING BY PURPOSE
AND LIMIT IN THE TUSCALOOSA CITY, ALABAMA
PUBLIC SCHOOLS: 1989-1990

Close-Ended	Open-Ended
General Monies: Local Aid (Including Property Taxes) County Aid (Property and Sales Taxes) $11,814,472 (27.9% of Total Expenditures)	N/A
Special Monies: State Aid (Including Basic and Capital Projects) Federal Aid (Including Compensatory Aid under the Elementary and Secondary Education Act--Chapter 1, Capital Projects and other programs) $30,608,212 (72.1% of Total Expenditures)	N/A
TOTAL EXPENDITURES: $42,422,684	

TABLE 50

SOURCES OF FUNDING AND THEIR RELATIVE IMPORTANCE:
TUSCALOOSA CITY, ALABAMA, 1989-1990

Name of Source	Dollar Amount	Approximate % of Expenditure
LOCAL SOURCES: (including property taxes)	10,540,676	24.8
COUNTY SOURCES: (property and sales taxes)	5,219,796	12.3
STATE SOURCES: (basic aid and capital projects)	22,539,790	53.2
FEDERAL SOURCES: (ESEA, EHA-B PL 94-142 special education, other)	4,122,422	9.7
TOTAL:	42,422,684	100.0

TABLE 51

BREAKDOWN OF TUSCALOOSA CITY, ALABAMA ELEMENTARY SCHOOLS BY
THE NUMBER OF TEACHERS, THEIR DEGREES, AND THE TOTAL
NUMBER OF STUDENTS PER SCHOOL: 1989-1990

Elementary School	Total N of Teachers	N of Students	Educational Attainment of Teachers		
			BS	MS	PhD
Alberta	29	388	13	14	2
Arcadia	24	376	6	13	5
Central	16	135	9	5	2
Martin L. King,Jr.	41	493	5	30	6
Northington	42	536	14	22	6
Oakdale	16	223	10	5	1
Skyland	39	642	13	21	5
Stafford	34	489	13	18	3
Stillman	36	430	18	17	1
University	28	340	11	16	1
Verner	48	831	18	26	4
Woodland	32	598	9	20	3
TOTAL	385	5,481	139	207	39

TABLE 52

STUDENT/TEACHER RATIOS IN THE TUSCALOOSA CITY, ALABAMA
ELEMENTARY SCHOOLS: 1989-1990

Minority Percentage	0-33%	34-73%	74% and Above
Income Class	$19,000 and Above	$10-18,999	$0-9,999

| | Arcadia 15.7
Verner 17.3
Woodland 18.7 | Alberta 13.4
Northington 12.8
Skyland 16.5
University 12.1 | Central 8.4
M.L.K.Jr 12.0
Oakdale 13.9
Stafford 14.4
Stillman 11.9 |

TABLE 53

RATIOS OF STUDENTS TO ALL TEACHERS IN
TUSCALOOSA CITY, ALABAMA ELEMENTARY
SCHOOLS: 1989-1990

Schools Classified by Percentage of Minority Students		
0-33%	34-73%	74% and Above

Schools Classified by
Income of Surrounding
Census Tract (1980 data)

$19,000 and Above	$10-18,999	$0-9,999

	0-33%	34-73%	74% and Above
Mean Ratio of Students to All Teachers in Group	17.2	13.7	12.1
Standard Deviation of Mean Ratio	1.22	1.68	2.11
	(N=3)	(N=4)	(N=5)

TABLE 54

STATISTICAL TEST OF HYPOTHESIS OF DIFFERENCES IN
STUDENT/TEACHER RATIOS: TUSCALOOSA
CITY, ALABAMA, 1989-1990

Matrix of Student's t-statistic for Elementary Schools by
Percent Minority and Income Classification

	0-33% $19,000 and Above	34-73% $10-18,999	74% and Above $0-9,999
0-33% $19,000 and Above	--	3.19*	4.33**
34-73% $10-18,999	--	--	1.26
74% and Above $0-9,999	--	--	--

One Tail Test of Significance

p < .025 = *
p < .005 = **

TABLE 55

AVERAGE YEARS OF OVERALL TEACHER EXPERIENCE IN
TUSCALOOSA CITY, ALABAMA ELEMENTARY
SCHOOLS: 1989-1990

All Schools		11.4

Minority Percentage
And
Income Classification

0-33%	$19,000 & Above	11.5
34-73%	$10-18,999	11.6
74% & Above	$0-9,999	11.2

TABLE 56

TEACHER EDUCATIONAL ATTAINMENT IN TUSCALOOSA CITY, ALABAMA
ELEMENTARY SCHOOLS: 1989-1990 (IN PERCENT)

		4 Year Degrees	Masters	Ph.D.	Total
All Schools		36.1	53.8	10.1	100.0
Minority Percentage And Income Classification					
0-33%	$19,000 & Above	31.8	56.7	11.5	100.0
34-73%	$10-18,999	37.0	52.9	10.1	100.0
74% & Above	$0-9,999	38.4	52.5	9.1	100.0

TABLE 57

TEACHER TRANSFERS IN THE TUSCALOOSA CITY, ALABAMA
ELEMENTARY SCHOOLS: 1989-1990

Minority Percentage and Income Classification in School Transferred From:	Minority Percentage and Income Classification in School Transferred To:		
	0-33% $19,000 Above	34-73% $10-18,999	74% & Above $0-9,999 &
0-33% $19,000 & Above	--	1	--
34-73% $10-18,999	--	1	--
74% & Above $0-9,999	2	2	2

VITA

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