

Chapter 2

Review of Literature

This section provides background on the education movements that precipitated reform in school funding systems in Kentucky and Tennessee. Major reform to state education systems which began in the late 1970s laid the groundwork for the Kentucky Education Reform Act of 1990 and Tennessee's Education Improvement Act of 1992. First, a review of key reforms in the states as early as the 1970s is provided. Second, a discussion of key school finance court cases provides insight into the environment that led to the court decisions in Kentucky and Tennessee which resulted in the reform packages adopted in those states. Third, approaches to school funding reform from the 1970s up to the present are analyzed. Fourth, the link between school funding and student achievement is examined. Finally, the unique situations in Kentucky and Tennessee are described.

2.1 National Attention Focused on Education Reform

The publication of *A Nation at Risk* (1983) focused national attention on the issue of education. This new scrutiny on public schools, based on two decades of research, led policymakers and the public to call for more accountability from school leaders. The response to the report was felt nationwide as 45 states adopted education reform and evaluation programs designed to improve education outcomes and increase accountability (Jennings 1995). The reform programs included increased spending on schools and challenging expectations for students. Competency-based requirements for teachers and principals first emerged in the 1980s as part of the accountability movement. These standards were complemented by a push for increased teacher supervision by administrators. These measures, designed to reform schools from the top-down, were followed by the development of tests to assess levels of student learning (Finn 1988). The tests provided the "outcome" to be achieved by the manager, in this case, the school administrator. These reforms focused on

fundamentally changing the school organization, so it more closely resembled a business model (Murphy 1991). The top-down, centralized approach was expected to produce immediate results and improve schools quickly (Hallinger 1992). However, after several years with the top-down approach, test scores in most areas remained stagnant (Finn 1992).

2.1.1 Implementing Reform in the 1980s and 1990s

The reaction of teachers and administrators to school reform became important information for policymakers when planning continuing change. Policymakers sought input from the building level in order to improve decisions regarding future reform policies (Cohen and Barnes 1993).

Fuhrman et al. (1988) compared the reform initiatives of Arizona, California, Florida, Georgia, Minnesota, and Pennsylvania during the 1980s. The researchers interviewed educators and policymakers in 59 schools representing 24 districts. Fuhrman et al. (1988) chose these states because of their representation of "... a range on particular characteristics we expected to affect the translation of policy into practice: the scope and volume of reform and the instruments used to address policy problems" (p. 238).

Fuhrman et al. (1988) found that in many of the states reform initiatives consisted of a collection of mandates enacted simultaneously while in other states reforms were implemented in increments over several years. In some cases, different initiatives within a state reform package contained diverse strategies for improving student achievement. In most states initiatives dealt mainly with increasing high school graduation requirements and improving teacher training and certification programs. Some states addressed improving standards for all students through yearly assessments, revisiting grade promotion requirements, and developing a statewide curriculum. Outliers in the study included Minnesota, which instituted very few reforms, and Georgia, which enacted the Quality Basic Education Act that mandated incentives for school consolidation and changed the school finance system. Overall, those policies dealing with teacher standards lacked clarity and were difficult for most states to implement.

The researchers found that some districts and states used the atmosphere of change as an opportunity to devise reforms that met other needs. Some states added requirements for students in terms of curriculum or grade advancement. While these seemed like sound ways to improve the system, in many cases, adding requirements actually made improving student achievement more difficult. More stringent graduation requirements and minimum grade point averages (GPA) apparently did little to improve the learning environment for especially at-risk students. The researchers also found that many districts already included the requirements mandated by state initiatives.

Fuhrman et al. (1988) discovered seemingly surprising findings regarding the factors that guided implementation of the new wave of reform policies.

Among them, two factors were shown to be less important in guiding implementation: (a) Implementers of reform need not be involved in designing initiatives in order for those initiatives to be successful, and (b) clarity of the policy was not a critical factor for implementation. The researchers found that two factors critical to the success of reform were the following: (a) district goals had a great impact on the implementation of reforms, and (b) “compliance clearly depends heavily on the extent to which the technical knowledge exists and school personnel feel competent to make the change” (p. 254).

These findings suggest that implementation of reform initiatives took place in many states and districts regardless of the involvement of all stakeholders, especially educators, and without a clear understanding of the policies to be implemented. Successful implementation was defined as compliance with the directives and did not necessarily take into account the influence of local factors. Compliance varied across districts within a state which raises the question of how successful implementation should be defined. The question is if the reforms were complied with but student achievement did not improve, can implementation truly be considered successful? Or, is it possible that the policies were successfully implemented and were simply flawed?

While Fuhrman et al. (1988) addressed implementation issues, other research focuses on comprehensive reform efforts and their impact. Specifically, Hertert (1996) provides analysis of how reform efforts in the 1990s evolved based on the experiences of the 1980s’ centralization-based reforms.

Hertert’s (1996) study examined local responses to state reforms. Participants in the study included teachers, superintendents, board members, parents, union representatives, central office administrators, members of the business community, and journalists from 30 districts across 9 states. The data for the study was collected by phone interview with 390 participants.

Upon analyzing the data, the researcher classified the districts into two types, assertive and reactive. Assertive districts exhibited the characteristics of high levels of capacity building and information gathering. Reactive districts did not possess these characteristics. The researcher classified over 80 % of the districts as reactive. These districts lacked the capacity, resources, expertise, and access to state policy-makers to influence reform or protect themselves from its effects. Two areas of great concern for the reactive districts were (a) the lack of compatibility of state reform with local needs, and (b) incoherent reform policies not integrated with previous or current policies. Barriers to the successful implementation of systemic reform in these districts included lack of personnel, information, and time. The reactive districts expressed a need for strong leadership in sustaining the reform over a long period of time. Both assertive and reactive districts—across all states surveyed—perceived that a lack of state funding existed such that the totality of reform called for could not be achieved.

Hertert (1996) concluded that there were some difficulties with implementation in many districts. She suggested, however, that states and districts demonstrated progress toward systemic change. Hertert’s (1996) study indicated that reaction to systemic reform in the 1990s was similar to reaction to the reform movements of the 1980s.

Successful local implementation varied depending on local capacity and the compatibility of state reforms with local needs.

Both Hertert (1996) and Fuhrman et al. (1988) found that local needs influenced the degree to which reform initiatives were implemented at the local level. Although Hertert concluded that reaction to reform in the 1990s was similar to that during the 1980s, differences existed between the studies in terms of the type of reform implemented. Fuhrman concluded that policy implementation could be successful without stakeholder involvement in policy formulation and even without policy clarity. However, during the 1980s—the subject of Fuhrman et al.'s (1988) study—educators engaged in reforms that consisted of separate programs that were not part of a cohesive whole. In other words, the reform chosen by the local district was considered a success as long as it was implemented. By contrast, in the 1990s, educators attempted to implement systemic reform at a state level that consisted of multiple reform pieces designed to function as a cohesive, integrated whole (Hertert 1996). Because local education units might only have implemented a portion of the reform depending on their perceived needs, system-wide success was difficult to achieve. On the other hand, local school boards often did choose to implement at least some reform. As a result, attempts at systemic reform did achieve some positive results.

Hertert (1996) did identify some characteristics that impacted local success in implementing reforms during the 1990s. Those factors included low levels of capacity (both financial and administrative) and low levels of expertise in the reform demanded. One might note that a lack of a system-wide training program could have been a part of the problem, though Hertert does not mention that as a factor. While attempts at reform did not appear to significantly improve educational achievement in the 1980s, it appears that local barriers were even greater during the more comprehensive reforms attempted in the 1990s (Fuhrman et al. 1988; Hertert 1996).

Kirp and Driver (1995) conducted a case study designed to examine local response to education reform. The study analyzed one California school district over a period of 30 years to determine how that district responded to both state and federal reforms. The researchers studied the impact of various reforms on both the district office and the individual schools within the district.

Kirp and Driver (1995) reported that school reform success was based on communication among all stakeholders rather than through top-down implementation from the state or federal level. The Kirp and Driver study was limited by the fact that it only analyzed one school district. A further limitation was the fact that the study only examined California reforms and not reforms in any other state.

Conley and Goldman (2000) studied local educator reaction to reforms passed at the state level in Oregon. The researchers examined reaction to reform from 1992 to 1995 and again in 1997. 120 schools in Oregon participated in the study.

Conley and Goldman (2000) found that teachers did not express open opposition to reform at its outset. However, over time, teachers seemed to lack true engagement in the reform process. The researchers suggested that initially, teachers were open to reform. Implementation of clear objectives was evident, while those policy directives with less clarity were likely to be ignored or have their implementation delayed. Ultimately, after 5 years, teachers appeared no more engaged in the reform process

than when the reform was started. Lack of policy clarity and lack of planning to obtain teacher buy-in appeared to create the lack of engagement problem.

Hertert's (1996) comprehensive analysis of reforms in the 1990s along with studies of California (Kirp and Driver 1995) and Oregon (Conley and Goldman 2000) indicates that communication among stakeholders and policy clarity are keys to effective implementation of reform. Conley and Goldman (2000) further add that teacher commitment to reform is an essential element of success.

2.2 School Funding Court Decisions

Since the landmark 1971 *Serrano v. Priest* case in California, over half of the states in the country have had their school finance systems challenged in state courts, with the majority of decisions favoring the plaintiffs (Odden and Picus 1992; Enrich 1995). Reforms between 1971 and 1973 primarily challenged finance systems on the basis of state and federal equal protection clauses. After 1973, education finance became a state issue due to the Supreme Court decision—*Rodriguez v. San Antonio School Districts*—that a state's failure to provide equal access to education does not violate the US Constitution. Court cases since then have tended to challenge finance systems based on some education clause in state constitutions. Over the last several decades, the courts have primarily applied a standard of relative equity or wealth neutrality with regard to spending. However, court decisions have often provided vague definitions of equity (Enrich 1995). Additionally, it appears unlikely that school finance litigation will come to an end anytime soon (McCarthy 1994; Walter and Sweetland 2003).

Rural schools have been especially plagued by poor funding due to low property tax collections. Dayton (1998) reports that while states sometimes acknowledge funding disparities (and subsequent achievement gaps) among rich and poor districts, it tends to take a court order to correct the system. In states where property taxes are the primary source of funding for schools, equity across districts is rarely achieved. Additionally, wealthier districts tend to have representatives in government with more clout than those in poor districts. Finally, most legislators are reluctant to adopt funding systems that will result in tax increases. Thus, rural schools in the 1980s and 1990s resorted to litigation in order to force state action.

Ehrenhalt (2005) reports on the success of funding formula reform in Kansas and notes that while lawmakers were able to find funds for schools in response to court action, other states have not had similar success. Ehrenhalt recommends that in states where schools are struggling, local districts work with the Department of Education to quantify needed funding. Too often, lawmakers hear that schools need more money. What they do not hear is why the money is needed and how it will be spent. Ehrenhalt suggests that one possible way to avoid court cases is to show some correlation between increased funds and improved performance. Demonstrating need goes beyond merely discussing standardized test scores. Schools should also focus on class size, adequacy of facilities, support staff, and other indicators to justify funding.

Of course, if these methods fail to grab legislator attention, the effort exerted in obtaining the data can certainly make for compelling testimony in a courtroom.

As a result of education finance court cases, several states, including Kentucky and Tennessee, adopted new school aid formulas in the 1980s and early 1990s that were designed to reduce interdistrict spending inequity (Berne and Stiefel 1984) but also to preserve a great deal of local autonomy. Recent cases (including *Small Schools III*) in Tennessee filed in state courts have alleged that unequal access to education continues despite these earlier reform efforts. Several states have responded to these new cases by adopting school funding systems that significantly reduce reliance on local property taxes. Most notable are Michigan, Wisconsin, and Kansas, which adopted new financing systems that rely on greater levels of state funding, reduce local property taxes, and impose limitations on the maximum level of spending in districts (Fisher and Wassmer 1995; R. Fisher 1996).

2.2.1 Results of Court Decisions

As a result of these court decisions and the subsequent reforms, states are playing a larger role in education funding. In 1991, 40 % of total local government spending in the USA was dedicated to elementary and secondary education, by far the largest share of local budgets. However, the local role in financing education has dropped steadily in the last several decades. In 1960, local governments provided 59 % of total nonfederal public school funds, with states supplying 41 %. By 1992, the local share had dropped to 50 % of nonfederal funds, with the other half provided by the states (R. Fisher 1996). Thus, the financing balance between state and local governments has been altered considerably, with states assuming increasing fiscal responsibility for public elementary and secondary education (Duncombe and Yinger 1997). In most states, the impetus for these changes has stemmed from court cases challenging the equity of local financing, and the rise of tax revolts particularly focused on local property taxes.

Howell and Miller (1997) offer insight into how schools are funded from district to district. The authors note that while wealthy districts can supplement state appropriations, poor districts do not have that capacity and remain dependent on state and federal funds to support programs. Because state and federal funds are often tied to specific programs, poor districts are limited in the options for spending the money, and the gap in resources among rich and poor districts continues to widen.

Mintrom (1993) adds support to Howell and Miller's (1997) argument by noting that reform passed in New Jersey as a response to a court order to achieve equalization of funding across districts failed. Mintrom (1993) notes that the disparities in local supplements prevented state funding from closing the gap between rich and poor districts and impeded the achievement of equalization. Because New Jersey's system still allowed local property taxes to be the primary source of funding, the equalization scheme did not achieve its intended result.

2.2.2 *What Is Equity?*

In order to determine if equity has been achieved, a standard for equity needs to be established. The education finance literature has outlined several key questions that need to be answered in defining an equity standard for a school finance system (Berne and Stiefel 1984; Monk 1990). First, what should be equalized—expenditures, resources, or outcomes? Most school reforms and court litigation have focused on expenditures as the object of equalization. However, expenditures, which mix input prices with input quantity, provide a poor measure of the underlying resources used by a school district or the outcomes of the process. Moving from expenditures to resources or outcomes requires accounting for cost differences that arise either from input prices (teachers' salaries) or from factors affecting the learning environment and capacity of students, such as family background and student characteristics (Duncombe et al. 1996).

Besides identifying the object of equalization, we need to define a standard or benchmark for assessing the progress in achieving equity goals. In practice, the implicit standard behind the most common state school aid formula—the foundation formula—is an absolute standard. This standard is consistent with the notion that certain basic skills are of broader interest to the public and thus justify public subsidy of a minimum level of resources or outcome level. Educational equity could also be defined in terms of achievement of some relative standard of equity where differences in resources or outcomes between school districts are kept within certain parameters.

Another equity standard proposed for school finance is wealth neutrality, defined by Feldstein (1975) as the “precise rule that the elasticity of local educational spending per pupil with respect to the value of local taxable property per pupil be zero” (p. 77). The standard could be modified to apply to resources, outcomes, or other measures of fiscal capacity such as income. Wealth neutrality is an appealing standard because it declares that a child's education should not depend on the wealth of her district, over which she has no control.

These equity standards vary not only in how they define the state equity interest, but also in what they imply about restrictions on local control. An absolute standard defines a floor for district resources (and often defines a minimum local tax effort), but does not impose any constraints on the spending level of districts above the standard. A wealth neutrality standard is also consistent with variations in local preferences for education as long as they are not systematically related to district wealth. The one standard that implies significant restrictions on local preferences is the relative equity standard since it imposes a ceiling on the resources provided by districts. Even if such restrictions can be imposed on local spending, it is difficult to prevent parents or Parent Teacher Organizations from providing resources directly to schools or to prevent parents from using private schools.

Besides the political difficulty of restricting local behavior, potential efficiency losses may be generated as well. In addition to the efficiency benefits of local provision, more decentralized financing of services enhances opportunities and

incentives for citizens to monitor and put pressure on local school officials for greater performance. There is mounting evidence of a positive relationship between the level of state aid distributed to a school district and the extent of productive inefficiency (Silkman and Young 1982; Duncombe and Yinger 1997). Thus, states attempting to reform their school finance systems must balance different objectives and their consequent implications for allocative and productive efficiency.

Building on Berne and Stiefel's (1984) definition of horizontal equity, Moser and Rubenstein (2002) analyze funding equality across school districts in 49 states for fiscal years 1992 and 1995. Berne and Stiefel (1984) define horizontal equity as "equal treatment of equals" and this measure is designed to "examine the dispersion of per pupil resources across districts or schools" (p. 65). Moser and Rubenstein (2002) perform their horizontal equity analysis to determine if state-level reforms aimed at achieving equity have achieved their goals.

Moser and Rubenstein (2002) use NCES data at the district level for the 1991–1992 and 1994–1995 school years to conduct their study. Additionally, they index the dispersion statistics relative to the national average in order to facilitate comparisons across states. To further examine the relationship between factors controlled by state policymakers and funding equality among districts, Moser and Rubenstein (2002) use weighted least squares regression analysis.

The findings of the study conducted by Moser and Rubenstein (2002) indicate that from 1992 to 1995, overall intrastate funding equality improved only slightly. Additionally, most states did not see a change in ranking from 1992 to 1995. Perhaps the most significant finding for those states attempting to achieve funding equality among districts is that states that provided higher proportions of total per pupil revenues generally showed a more equal distribution of resources than those states where local revenues were the primary source of funding.

While Moser and Rubenstein (2002) provide some interesting analysis regarding funding equality among districts in 49 states, there are some limitations. First, the study covers a relatively short period of time. A study covering even 5 years rather than 3 may provide greater insight into the impact of funding reforms in the states. States like Kentucky and Tennessee, for example, implemented significant funding reforms in the early 1990s. These reforms may not have been fully in force by the conclusion of the study, so their full impact was likely not indicated in the study's results. Additionally, the study only examines horizontal equity, and leaves out Berne and Stiefel's (1984) other two types of equity. Finally, the study does not provide or even seek to provide any data or analysis relative to the impact of funding equity on student achievement.

Another dimension in the equity debate is adequacy. That is, are schools receiving adequate funding to meet the needs of the communities served? Funding equity can be achieved while simultaneously funding all schools at a poor level. Therefore, Augenblick et al. (1997) recommend that prior to implementing funding formula reform states review successful districts and develop suggested spending models to help each district achieve the most with its education dollars. The authors conducted case studies of several states which enacted reforms following court decisions. They found that while funding formulas were developed with a focus on equity, they

did not always result in adequate funding across districts. Some districts need more money than others because of the nature of their student population. Additionally, not all districts manage their money well (Slavin 1994). This article points to the many complexities involved in devising a funding formula that meets the goals often outlined in court decisions. In short, it is extremely difficult to narrow the gap between wealthy and poor school districts—especially without significant state control.

2.3 School Funding Reform

States responded to various court orders by attempting to create school funding systems focused on equity. Varying methods were used in an attempt to achieve funding balance among districts within states. Essentially, most states assumed a greater role in funding public education and state dollars began to augment and in some cases replace local dollars (R. Fisher 1996).

Since most court decisions regarding school funding seek to resolve wealth disparities among districts, it is important to understand what kinds of districts are “poor” districts. What characteristics do these districts who have filed lawsuits share? What can be learned from their common traits?

Goertz (1994) offers an analysis of the poor school districts that often find their only relief in state court. First, she defines poor districts as “those communities that lack a sufficient property tax base to support an adequate level of education spending” (1994, p. 74). Goertz then goes on to note that suburbanization has left both rural and urban districts in tenuous financial situations. Because working professionals who used to live in the cities now pay property taxes in the suburbs, big city school systems are suffering revenue loss. Rural districts have traditionally been among the poorer districts, and that remains true today.

Goertz (1994) further points out that students in poverty tend to have the greatest educational needs. Thus, those students with the most need tend to be highly concentrated in school districts with the least ability to meet those needs. In fact, those same districts are likely struggling to provide even the basics to the students they serve.

Finally, Goertz (1994) reports that policymakers are often reluctant to provide additional funding to poor districts because they fear that the money will be misused. These fears have been realized after reforms in both Kentucky and New Jersey found some districts grossly mismanaging their new state dollars. Policymakers typically seek to reward those districts that are performing well—which are the very districts that already have adequate resources to meet or exceed the educational needs of their students.

Archer (2005) offers analysis supporting Goertz’s (1994) report that increased funding can lead to misuse of resources. Archer notes that because of school funding disparities across districts, schools with a wide range of students may end up with the same level of funding. For example, a high school with 1,200 students in a wealthy district may have the same total budget as a school with 1,800 students in a poorer district. One way to combat this is to adopt the Average Daily Membership

model such as the one used in Tennessee. In order for this to work, however, states must completely control education funding—any local supplement would lead to a recurrence of funding disparities. Additionally, Archer (2005) suggests that district administrators who are not accustomed to managing finances need training to ensure that they make the best use of additional state dollars when funding formulas change.

Archer's (2005) suggestions raise the question of whether or not states should assume complete control of education funding. Writing 25 years earlier, Guthrie (1980) argues against this idea for several key reasons. Guthrie identified four risks of complete state control of education funding. They include (1) economic, (2) political, (3) public alienation, and (4) local autonomy.

First, should all education funding come from the state, local schools would be dependent on the state economy to maintain needed funding. Under systems with shared local-state responsibility, an area with a strong economy in a state trending downward could conceivably tap into local resources to make up for state funding deficiencies.

Spreading the burden across both state and local government allows for shared resources and can have benefits that impact districts all across a state.

Second, complete state control would make the funding process even more political. Those areas of the state with the most political clout would likely get the most funding regardless of needs across the state. Additionally, a state-local shared system diffuses the politics. Local governments can fund projects not deemed warranted by state representatives. As such, funding would not be dependent on appeasing a few political leaders who may not live in the local area where the funds are to be spent.

Third, if the state assumes control, the local public may feel alienated from the process. Under a local-state system, local residents can contact their school board members and other local elected officials in order to express their views on school funding issues. Changing to a funding system based solely on state funds would put the decision makers further away from the people who are impacted. Because of this, the public at large may become apathetic about education funding, feeling powerless to affect any real change.

Finally, local governments would lose autonomy. A favored program that seems to be working in one district may not be funded because it is viewed unfavorably by leaders at the state level. A shared system allows local entities to maintain autonomy while providing the state the opportunity to influence policy choices through increased funding.

Guthrie (1980) makes a compelling case against complete state funding of public schools. While the complexities involved in developing funding systems that are fair and positively impact student achievement are many, maintaining a local-state shared system of education funding has several distinct advantages over complete state control.

Farrow and Joe (1992) suggest that in addition to requesting additional education funding from the state, school systems should build community support to fund educational programs. The authors note that while state funding to education experienced some increase in response to court cases, states also face other funding challenges such as the growth of Medicaid expenditures. When communities can

show that state dollars will be matched with community dollars, those communities are more likely to receive positive results from requests for state funds. Hess (2005) and Manafo (2006) support these claims by noting that numerous philanthropic sources are available for school funding. Additionally, both suggest building school funds by raising money from private sources.

While Farrow and Joe (1992) suggest building partnerships, it is important to note that not all communities have the same private resources available. Indeed, it is likely that those communities with low property tax collections also lack community leaders and businesses with sufficient capital to match potential state dollars. The idea behind Farrow and Joe's (1992) suggestion seems like a good one, but the practical implications seem to be that those districts with solid resources will end up pulling down the most state dollars under a system such as the one they recommend.

2.3.1 Approaches to Funding Reform

Michigan and Illinois took opposite approaches to funding equity reform in the 1970s. Despite the significant difference in approaches, both states failed in their efforts to achieve equity (Addonizio and Phelps 1983; Chaudhari et al. 1983). While Michigan capped the reimbursable amount of local tax dollars, Illinois offered a plan that provided greater state funding for those districts with higher tax rates. The Michigan plan was designed to encourage districts to maintain tax rates and funding at similar levels (Addonizio and Phelps 1983). Illinois attempted to provide incentives to districts to assess adequate tax rates by basing state allocation on "local effort" (Chaudhari et al. 1983, p. 21). Changes in the economy led to the downfall of both reforms as state funding allocations were unable to keep up with the goals of the reform.

Michigan attempted financial reform again in the 1990s when legislation eliminating the property tax as a source of education funding was signed into law in 1993 (Vergari 1995). This forced the legislature to completely overhaul the school funding formula and the state assumed 70 % of school funding. Because of this change, disparities among districts were significantly reduced (Vergari 1995).

Florida enacted the Florida Educational Finance Program in 1974 to address funding equity among the state's 67 public school districts (Alexander and Shiver 1983). The program was designed to equalize educational offerings such that students in one district would have the same or similar educational opportunities as those in any other district in the state. Alexander and Shiver (1983) analyzed the impact of the plan by examining school funding changes from the 1970–1971 academic year to the 1980–1981 academic year. The study found no significant change in equity among districts. That is, Florida's plan failed to achieve its stated goal.

Both Virginia and Pennsylvania enacted reforms in the mid-1970s that involved complex financing formulas and shared revenue schemes (Cronk and Johnson 1983; Jones and Salmon 1985). While both reforms were intended to close the funding gap among the wealthiest and poorest districts, in both states, the reforms were unsuccessful and disparities persisted. Virginia's plan actually resulted in a reduction of state dollars spent on education (Jones and Salmon 1985).

Pennsylvania's reform demonstrated an unequal distribution of the "shared" revenue. In both cases, wealthier districts maintained a higher level of education spending than other districts.

Massachusetts passed school finance reform legislation in 1978 to address funding equity (Morgan 1985). While the reform resulted in an increase of state funding from 35 to 50 %, equity actually decreased in the state. The decrease in equity among districts was the result in a change in the funding formula from a per pupil to a per capita valuation (Morgan 1985). Because Massachusetts continued to rely heavily on local funds and because the funding formula exacerbated the equity gap, the reform effort in that state actually made the problem worse.

Ohio made several attempts to achieve funding equity in the late 1970s and 1980s. The state moved from a foundation funding plan to a power-equalizing plan and back to a foundation plan (Erekson and Mitroff 1988). A variety of problems, not least of which was lack of commitment to reform, plagued Ohio's efforts. Equity improvement was noted at varying times, but was not consistent.

A 9-year study (1977–1986) of Louisiana's public school finance program analyzed that state's attempt to obtain funding neutrality among districts (Geske and LaCost 1990). The program found that while the fiscal capacity gap actually widened over time, actual spending per pupil became more equal. The authors suggest that the closing of the spending gap resulted because of Louisiana's formula which allotted money on a per unit basis to all pupils of the state (Geske and LaCost 1990).

Ko (2006) reports on Missouri's Outstanding Schools Act which passed in 1993. The article provides information that indicates that after careful implementation of a new funding formula, school finance equity has improved in the state. That is, funding across districts now appears significantly more equal than it did prior to the passage of the law. The lesson from Missouri is that with time and careful monitoring, real differences in funding equity can be achieved.

Oregon passed an education financing plan in 1991 designed to bring about wholesale change in public schools in the state (Weber 1995). The Oregon plan was based on reduced property taxes and increased state responsibility for education decision making. The formula equalized school spending per student among districts. The results of the Oregon plan were significant increases in educational outcome in some districts and declines in others, raising questions about the effectiveness of increased spending on educational outcomes (Weber 1995).

2.4 The Impact of Funding on Student Achievement

While it is clear from the literature and the various court decisions that significant funding disparities exist among school districts in most states, what is not as clear is whether additional funding actually improves student achievement. The research on this issue is mixed. Some studies show a trend toward improvement in student achievement when funding is increased. Others indicate that funding has no significant impact on student achievement and that other factors are more significant.

Ellinger et al. (1995) studied the link between school funding and student achievement in Oklahoma. The researchers used data from the Oklahoma indicators of 1989–1990 and 1990–1991. A multiple regression analysis was used with student achievement as the dependent variable and six independent variables including per student revenue, parental wealth, race, average teacher salary, average years of experience of teachers, and percentage of teachers with advanced degrees.

The researchers found that in both 1989–1990 and 1990–1991 per pupil revenue was the only statistically significant positive indicator influencing test scores. That is, parental wealth, race, teacher salary, years of experience of teachers, and percentage of teachers with advanced degrees did not have a statistically significant impact on student achievement (test scores) during the two academic years in the model. In short, the study suggests that school funding does in fact impact student achievement.

While Ellinger et al. (1995) present evidence suggesting a link between school funding and student achievement, it is important to be mindful of the limitations of their study. First, the study included only one state, Oklahoma. Second, the study is limited to only 2 academic years. An anomalous situation could have occurred in those years that impacted the study, such as an economic boom in the state or in certain districts. A more thorough study would include additional school years to further validate the findings. Third, we know nothing of the geographic location of the students who scored higher. Were the high test scores in urban, suburban, or rural districts? A division on these terms might tell us something about the characteristics of the districts where school funding and student achievement were higher.

Support for Ellinger et al. (1995) study suggesting that school funding has a direct, positive impact on student achievement is found in Bracey's (1995) discussion of the school funding issue. Bracey disputes the assertion that while more and more money is being spent on education, test scores are stagnant. Instead, Bracey points out that school spending rose in the late 1970s and into the 1980s due to various court decisions that mandated new funding formulas in the states. During the same time period, test scores rose to an all-time high where they remained into the 1990s. Thus, while the 1990s did see test score stagnation of sorts, it came after a period of dramatic increase in both school spending and student achievement.

A leading critic of increasing funding to schools as a means of increasing student achievement, Eric Hanushek claims in a 1995 discussion of the issue that there is "growing evidence that increased school funding does not result in improved student performance" (p. 60). Hanushek's (1995) claims run directly counter to the findings of Ellinger et al. (1995) and the position taken by Bracey (1995). Hanushek argues that instead of focusing on funding, the public policy debate in education should be focused on "educational organization, incentives, and decision making" (1995, p. 60).

Odden and Clune (1998), while not entirely supportive of Hanushek's position, do support the idea of setting aside a portion of increased education funding for performance-based incentives. Similarly, a case study of nine states which implemented some form of performance funding program found that if appropriately implemented, performance funding can have a significant impact on closing the gap between rich and poor school districts (Serban and Burke 1998).

Hanushek notes that in the 25-year period from 1970 to 1995, per pupil expenditure more than doubled in inflation-adjusted dollars. The impact of this increased spending means a dramatically reduced teacher-pupil ratio and more than double the number of teachers with a master's degree. He asserts that the results of all of this improvement are disappointing. He points to student performance as measured by the National Assessment of Educational Progress (NAEP) to support his claim. The NAEP data show that from the 1970s to the 1990s, reading achievement among 17-year-olds remained roughly the same while science achievement actually declined and math achievement was only slightly improved. Hanushek further examines SAT scores and notes that the scores in the 1990s are actually lower than those in the 1960s and 1970s.

Hanushek (1997) extends his argument about student achievement by noting that despite a 70 % increase in funding for public education, there is no evidence of a significant increase in student achievement. In this particular case, Hanushek (1997) simply reviews education research and statistics to demonstrate his case. The bottom line for Hanushek is that accountability, not funding, must change in order to impact student achievement.

Hanushek (1995) also argues for a restructuring of the American education system based on incentives for good performance. He claims that the race to increase funding is misguided. Instead, new methods of educating and of encouraging performance at the district level should be tried.

Supporting Hanushek's (1995, 1997) conclusions, Husted and Kenny (2000) analyze the impact of state regulations on student achievement and find that increased funding and the attendant increase in state regulations can hamper a district's ability to improve student achievement. Using SAT scores (similar to Hanushek's method) the authors studied school districts before and after major funding reforms were implemented. Husted and Kenny (2000) report that increased spending appears to actually decrease the average score on the SAT—or, in the least, while spending was increasing SAT scores were decreasing. Additionally, the authors assert that increased state regulations bog down local educators and prevent significant improvement in student achievement.

Bracey (1995) notes that Hanushek does not include the ACT in his analysis of test scores and further notes that while Hanushek claims to adjust for selective test taking, the fact that the number of SAT and ACT test takers has dramatically increased is evidence of educational improvement. Hanushek's analysis is certainly limited in that he does not address any impact increased funding may or may not have on improving achievement for those students at the bottom of the educational spectrum. Are low-income students seeing gains in reading and math? Hanushek does not tell us. Is the gap between the highest performing students and the lowest performing narrowing or widening? These questions should be answered in order to make more solidly supportable claims about the impact of school funding and student achievement.

In the midst of national clamoring for accountability-based reforms, Biddle (1997) asserts that increased school funding rather than higher educational standards is the real solution to the nation's education woes. Biddle's position lines up

with others who suggest that school funding is the real key to student achievement. This argument runs directly counter to arguments advanced by Hanushek (1995) and his assertion that increased funding over time has not produced increased student achievement.

Biddle notes that his study was conducted in response to calls for higher standards in our schools. He points out that the standards push received support from the highest levels, with President Bill Clinton specifically calling for “tough standards for achievement in mathematics, science, and other subjects” (1997, p. 8). The push for high standards by Clinton and others assumes that if states will only raise their standards, students will rise to achieve at those higher levels.

Biddle (1997) analyzed data from the Second International Mathematics Study (SIMS), the Third International Mathematics and Science Study (TIMSS), and the National Assessment of Educational Progress (NAEP) to determine the impact of school funding and child poverty on student achievement. Biddle’s study included not only analysis of school funding and child poverty, but also control variables such as race and difficulty of curriculum to which students were exposed.

Results of the study of SIMS data indicated that both school funding and child poverty were significant predictors of student achievement. Results from a similar study by Payne and Biddle (1999) indicate that poverty is an especially important variable. Further, the impact of school funding and child poverty remained significant even when controlling for additional variables (Biddle 1997). Biddle reported that “district-level differences in school funding and child poverty explained more than 25 % of the variance of differences in mathematics achievement” (1997, p. 13). Additional support for these results was found through analysis of the TIMSS data. Biddle (1997) reports “good evidence has now appeared indicating that differences between public school districts in levels of funding and rates of child poverty generate large disparities in eighth-grade mathematics achievement” (p. 13). Finally, Biddle points to the NAEP data for mathematics achievement and notes that state differences in mathematics achievement are correlated with both school funding and child poverty and that when both factors are combined, they predict “an astounding 55 % of the variance of state differences in average achievement” (1997, p. 13).

Biddle concludes that both school funding and child poverty are significant predictors of student achievement in mathematics. He uses regression analysis and three data sets to reach this conclusion. Based on his study, it can at least be suggested that school funding plays a role in student achievement as it relates to mathematics.

Biddle’s study provides at least some basis to support an argument that school funding is linked to student achievement. However, there are several limitations to the study. First, Biddle only addresses mathematics achievement. Without analysis of other core subjects (English, Science, Reading, Social Studies), it is difficult to make a more definitive claim about the link between school funding and student achievement. It may be that school funding is more or less important to student achievement in other subject areas. It should also be noted that Biddle (1997), Payne and Biddle (1999), and Wenglinsky (1998) all point to poverty as a significant variable. Perhaps it is poverty, rather than funding, that is the most important predictor

of student success. Second, based on Biddle's study, conclusions cannot be drawn about the impact of school funding over time. Do scores increase as funding increases? Or, as Hanushek asserts, is there no clear link between funding increases and student achievement? Without analysis over time, conclusions cannot be drawn in response to these questions. It would be useful to use Biddle's methodology and analyze other core subjects as they relate to school funding. Additionally, taking the same data sets and examining their changes over time relative to changes in school funding over time would provide a more vivid picture of the impact of school funding on student achievement in mathematics.

Biddle (1997) focuses specifically on mathematics achievement without broadening the scope to determine the impact of increased funding on total student achievement. By contrast, Greenwald et al. (1996) offer a more general approach that addresses the impact of increased school resources on student achievement. The authors compared schools based on resources offered to students—such as tutoring, quality of textbooks, and class size—to determine if schools which offered additional resources saw student achievement increase. The answer was yes. In those schools with additional educational resources, student achievement was greater. The authors caution that just blindly spending on any additional resources will not make a difference. However, they do not spell out which resources are most important in impacting student achievement, simply that spending should be well managed.

The findings, while promising for those who believe that funding levels are tied to student achievement, are also quite limited. It is quite likely that the schools with additional resources also have students with more resources (such as computers in the home). The authors do not tell us if, across similarly situated demographic districts, additional resources make a difference in student achievement. Further study to clarify this issue is certainly warranted.

While court decisions may direct states to reform their education funding systems, questions remain as to whether the subsequent reforms actually result in improved student achievement. Card and Payne (2000) address the issue of the impact of funding reform on student achievement. Specifically, they ask three questions: (1) Do court decisions lead to significant funding reforms? (2) Do funding reforms result in real changes in the way districts spend money? (3) Do funding reforms help narrow the achievement gap between rich and poor districts?

Card and Payne (2000) examined SAT scores to determine student achievement levels before and after funding reforms were implemented. The authors found that court decisions did result in significant reforms and often increased funding directed to poor school districts. The result of the spending as measured by SAT scores, however, was mixed. That is, some poor districts saw improvement in scores while others saw little change. Additionally, scores in wealthy districts tended to continue to increase, thus making changes in the gap between rich and poor difficult to achieve. The bottom line from the study was that money management is a key element to successful funding reform. As other authors have suggested, training and modeling may be necessary in order to achieve optimum results.

Supporting the argument that sound financial management must accompany an infusion of money, Goe (2006) examines the case of California's program to funnel money to low-performing schools. Goe analyzed the impact of California's program

and found that while low-performing schools did receive additional funding, student achievement did not significantly improve in those districts. Goe’s study found that the breakdown between increased funding and student achievement occurred at the school level. That is, teachers and administrators were not involved in discussions about how to spend additional funds. School boards and district-level administrators made funding requests and set budget priorities while leaving school-level leaders out of the picture. Goe suggests that had school-level educators been involved in the process, the additional funding might have been put to better use and student achievement might have improved. Additional studies of this topic should analyze the difference between state-based reforms that involve school-level leaders and those that do not in order to test Goe’s (2006) thesis.

2.5 School Funding in the States

The following tables outline recent data on how states fund schools in terms of the percentage of state, local, and federal funding (Tables 2.1, 2.2, and 2.3).

Table 2.1 Revenues for public elementary and secondary schools, by source, state, and outlying areas: School year 2002–2003

State	[In thousands of dollars]			
	Total	Local	State	Federal
USA	\$440,157,299 ^a	\$188,363,983 ^a	\$214,277,407	\$37,515,909
Alabama	5,153,795	1,591,360	2,966,979	595,456
Alaska	1,468,276	373,952	834,259	260,064
Arizona	7,351,310 ^a	2,956,463 ^a	3,555,570	839,278
Arkansas	3,266,318	1,079,085	1,804,362	382,871
California	57,021,363	17,830,356	33,561,358	5,629,649
Colorado	6,299,536	3,174,971	2,715,206	409,359
Connecticut	7,087,302	4,065,646	2,652,212	369,444
Delaware	1,197,512	335,292	759,290	102,929
District of Columbia	1,114,021	960,776	^b	153,246
Florida	18,984,106	8,699,188	8,285,654	1,999,264
Georgia	13,448,966	5,876,044	6,489,049	1,083,873
Hawaii	2,078,876	35,183	1,873,316	170,377
Idaho	1,698,503	528,369	1,003,508	166,626
Illinois	19,154,705	11,208,836	6,327,132	1,618,737
Indiana	7,926,062	2,656,914	4,663,625	605,523
Iowa	4,241,508	1,951,347	1,974,707	315,454
Kansas	4,071,712	1,374,386	2,326,819	370,506
Kentucky	4,764,253	1,460,287	2,799,254	504,713
Louisiana	5,549,582	2,092,810	2,723,938	732,835
Maine	2,161,238	1,040,061	927,774	193,403
Maryland	8,668,097	4,768,098	3,317,559	582,440

(continued)

Table 2.1 (continued)

State	[In thousands of dollars]			
	Total	Local	State	Federal
Massachusetts	11,801,318	6,267,814	4,827,630	705,875
Michigan	17,954,395	5,188,315	11,358,303	1,407,777
Minnesota	8,349,227	1,688,920	6,165,549	494,757
Mississippi	3,263,897	1,006,635	1,754,445	502,816
Missouri	7,662,199	4,302,867	2,743,289	616,043
Montana	1,204,497	471,698	558,114	174,685
Nebraska	2,550,525	1,447,099	877,657	225,769
Nevada	2,784,681	1,747,987	840,435	196,258
New Hampshire	1,957,267	897,514	957,850	101,904
New Jersey	18,905,028	9,869,241	8,230,289	805,498
New Mexico	2,685,725	346,541	1,936,713	402,471
New York	37,894,517	17,981,391	17,267,655	2,645,471
North Carolina	9,379,577	2,504,549	5,975,983	899,045
North Dakota	825,135	395,181	303,925	126,029
Ohio	18,143,062	8,843,542	8,132,703	1,166,816
Oklahoma	4,161,621	1,355,733	2,277,241	528,646
Oregon	4,599,717	1,841,006	2,342,430	416,281
Pennsylvania	18,751,160	10,430,431	6,867,531	1,453,198
Rhode Island	1,744,838	898,017	733,211	113,611
South Carolina	5,732,697	2,410,997	2,757,948	563,752
South Dakota	963,997	487,671	325,091	151,235
Tennessee	6,114,870	2,820,286	2,680,969	613,615
Texas	34,605,869	17,041,583	14,146,697	3,417,588
Utah	2,912,991	999,579	1,643,684	269,728
Vermont	1,149,920	290,683	779,215	80,022
Virginia	10,283,182	5,531,962	4,072,761	678,459
Washington	8,696,472	2,543,056	5,373,852	779,564
West Virginia	2,552,446	712,551	1,568,125	271,770
Wisconsin	8,858,181	3,594,201	4,727,338	536,643
Wyoming	961,248	387,510	489,201	84,536
<i>Outlying areas</i>				
American Samoa	68,812	2,545	12,591	53,676
Guam	^c	^c	^c	^c
Northern Marianas	60,712	299	37,230	23,183
Puerto Rico	2,619,532	95	1,816,733	802,703
Virgin Islands	177,087	139,969	0	37,119

^aValue affected by redistribution of reported values to correct for missing data items

^bNot applicable

^cNot available

NOTE: Detail may not sum to totals because of rounding. National totals do not include outlying areas. Local revenues include intermediate revenues

Both the District of Columbia and Hawaii have only one school district each; therefore, neither is comparable to other states

SOURCE: Data reported by states to the US Department of Education, National Center for Education Statistics, Common Core of Data (CCD)

Table 2.2 Percentage distribution of revenue for public elementary and secondary schools, by source, state, and outlying areas: School year 2002–2003

State	Within-state percentage distribution		
	Local	State	Federal
USA ^a	42.8	48.7	8.5
Alabama	30.9	57.6	11.6
Alaska	25.5	56.8	17.7
Arizona ^a	40.2	48.4	11.4
Arkansas	33.0	55.2	11.7
California	31.3	58.9	9.9
Colorado	50.4	43.1	6.5
Connecticut	57.4	37.4	5.2
Delaware	28.0	63.4	8.6
District of Columbia	86.2	^b	13.8
Florida	45.8	43.6	10.5
Georgia	43.7	48.2	8.1
Hawaii	1.7	90.1	8.2
Idaho	31.1	59.1	9.8
Illinois	58.5	33.0	8.5
Indiana	33.5	58.8	7.6
Iowa	46.0	46.6	7.4
Kansas	33.8	57.1	9.1
Kentucky	30.7	58.8	10.6
Louisiana	37.7	49.1	13.2
Maine	48.1	42.9	8.9
Maryland	55.0	38.3	6.7
Massachusetts	53.1	40.9	6.0
Michigan	28.9	63.3	7.8
Minnesota	20.2	73.8	5.9
Mississippi	30.8	53.8	15.4
Missouri	56.2	35.8	8.0
Montana	39.2	46.3	14.5
Nebraska	56.7	34.4	8.9
Nevada	62.8	30.2	7.0
New Hampshire	45.9	48.9	5.2
New Jersey	52.2	43.5	4.3
New Mexico	12.9	72.1	15.0
New York	47.5	45.6	7.0
North Carolina	26.7	63.7	9.6
North Dakota	47.9	36.8	15.3
Ohio	48.7	44.8	6.4
Oklahoma	32.6	54.7	12.7
Oregon	40.0	50.9	9.1
Pennsylvania	55.6	36.6	7.7
Rhode Island	51.5	42.0	6.5
South Carolina	42.1	48.1	9.8

(continued)

Table 2.2 (continued)

State	Within-state percentage distribution		
	Local	State	Federal
South Dakota	50.6	33.7	15.7
Tennessee	46.1	43.8	10.0
Texas	49.2	40.9	9.9
Utah	34.3	56.4	9.3
Vermont	25.3	67.8	7.0
Virginia	53.8	39.6	6.6
Washington	29.2	61.8	9.0
West Virginia	27.9	61.4	10.6
Wisconsin	40.6	53.4	6.1
Wyoming	40.3	50.9	8.8
<i>Outlying areas</i>			
American Samoa	3.7	18.3	78.0
Guam	^c	^c	^c
Northern Marianas	0.5	61.3	38.2
Puerto Rico	0.0	69.4	30.6
Virgin Islands	79.0	0.0	21.0

^aDistribution affected by redistribution of reported values to correct for missing items

^bNot applicable

^cNot available

NOTE: Detail may not sum to totals because of rounding. National totals do not include outlying areas. Local revenues include intermediate revenues. Both the District of Columbia and Hawaii have only one school district each; therefore, neither is comparable to other states

SOURCE: Data reported by states to the US Department of Education, National Center for Education Statistics, Common Core of Data (CCD)

Table 2.3 Student membership and current expenditures per pupil in membership for public elementary and secondary schools, by function, state, and outlying areas: School year 2002–2003

State	Fall 2002 student membership	Current expenditures per pupil in membership			
		Total	Instruction	Support services	Noninstruction
USA	48,183,086 ^a	\$8,044 ^{a,b}	\$4,934 ^{a,b}	\$2,782 ^a	\$329 ^a
Alabama	739,366 ^a	6,300 ^a	3,812 ^a	2,058 ^a	430 ^a
Alaska	134,364	9,870	5,740	3,798	332
Arizona	937,755	6,282	3,765	2,221	296
Arkansas	450,985	6,482	3,961	2,196	325
California	6,353,667 ^a	7,552 ^a	4,591 ^a	2,678 ^a	283 ^a
Colorado	751,862	7,384	4,230	2,900	254
Connecticut	570,023	11,057	7,052	3,612	394
Delaware	116,342	9,693	5,965	3,276	452
District of Columbia	76,166	11,847	6,216	5,331	300
Florida	2,539,929	6,439	3,786	2,338	315

(continued)

Table 2.3 (continued)

State	Fall 2002 student membership	Current expenditures per pupil in membership			
		Total	Instruction	Support services	Noninstruction
Georgia	1,496,012	7,774	4,925	2,459	391
Hawaii	183,829	8,100	4,833	2,839	428
Idaho	248,604	6,081	3,721	2,098	262
Illinois	2,084,187	8,287	4,952	3,068	268
Indiana	1,003,875	8,057	4,932	2,797	329
Iowa	482,210	7,574	4,508	2,511	554
Kansas	470,957	7,454	4,413	2,697	345
Kentucky	660,782	6,661	4,066	2,233	362
Louisiana	730,464	6,922	4,203	2,291	428
Maine	204,337	9,344	6,269	2,774	300
Maryland	866,743	9,153	5,693	3,042	418
Massachusetts	982,989	10,460	6,656	3,486	318
Michigan	1,785,160	8,781	5,002	3,509	269
Minnesota	846,891	8,109	5,201	2,536	372
Mississippi	492,645	5,792	3,466	1,966	360
Missouri	906,499	7,495 ^b	4,570 ^b	2,602	324
Montana	149,995	7,496	4,606	2,583	307
Nebraska	285,402	8,074	5,151	2,360	563
Nevada	369,498	6,092	3,812	2,080	200
New Hampshire	207,671	8,579	5,569	2,746	264
New Jersey	1,367,438	12,568	7,424	4,757	387
New Mexico	320,234	7,125	3,953	2,842	329
New York	2,888,233	11,961	8,213	3,459	290
North Carolina	1,335,954	6,562	4,173	2,023	366
North Dakota	104,225	6,870	4,102	2,230	538
Ohio	1,838,285	8,632	4,956	3,390	286
Oklahoma	624,548	6,092	3,528	2,160	404
Oregon	554,071	7,491	4,438	2,798	255
Pennsylvania	1,816,747	8,997	5,557	3,088	352
Rhode Island	159,205 ^a	10,349	6,685	3,396	267
South Carolina	694,389	7,040	4,199	2,464	376
South Dakota	130,048	6,547	3,836	2,361	349
Tennessee	927,608^a	6,118^{a,b}	3,933^{a,b}	1,885^a	300^a
Texas	4,259,823	7,136	4,307	2,469	360
Utah	489,262	4,838	3,103	1,461	273
Vermont	99,978	10,454	6,713	3,458	283
Virginia	1,177,229	7,822	4,809	2,705	308
Washington	1,014,798	7,252 ^b	4,317 ^b	2,582	353
West Virginia	282,455	8,319	5,115	2,742	463
Wisconsin	881,231	9,004	5,566	3,149	289
Wyoming	88,116	8,985	5,381	3,317	287

(continued)

Table 2.3 (continued)

State	Fall 2002 student membership	Current expenditures per pupil in membership			
		Total	Instruction	Support services	Noninstruction
<i>Outlying areas</i>					
American Samoa	15,984	2,976	1,543	893	540
Guam	c	c	c	c	c
Northern Marianas	11,251	4,519	3,871	437	211
Puerto Rico	596,502	4,260	3,145	606	509
Virgin Islands	18,333	6,840	4,459	2,168	213

Note: The two states under study, Kentucky and Tennessee, are noted in bold

^aPrekindergarten students were imputed, affecting total student count and per pupil expenditure calculation. In Tennessee, prekindergarten students were imputed and tuition expenditures (included in Instruction) were redistributed

^bValue affected by redistribution of reported expenditure values to correct for missing data items

^cNot available

SOURCE: Data reported by states to the US Department of Education, National Center for Education Statistics, Common Core of Data (CCD)

2.6 Funding and Reform in Kentucky

2.6.1 Overview of Kentucky School Funding

In 1985, an organization called the Council for Better Education, Inc., filed suit in Kentucky challenging the state's school finance arrangements. The Council, which consisted of 66 school districts, claimed that the existing finance system violated the education clause of the Commonwealth's Constitution. This clause states that the "General Assembly shall, by appropriate legislation, provide for an efficient system of common schools throughout the state" (Ky. Const. sec. 183). The case went to trial in 1987. After the trial court rendered a decision in favor of plaintiffs in 1988, state defendants appealed to the Kentucky Supreme Court.

In June 1989, the Kentucky Supreme Court used the finance suit to strike down the state's "entire" public school system. After noting that a "child's right to an adequate education is a fundamental one under the [state] constitution," it wrote this: "Lest there be any doubt, ... Kentucky's entire system of common schools is unconstitutional This decision applies to the entire sweep of the system [It] applies to the statutes creating, implementing and financing the system and to all regulations pertaining thereto" (Rose v. Council for Better Education 1989, 212, 215–216).

Within a year after the Court's decision, the legislature passed an ambitious, multifaceted reform package, the Kentucky Education Reform Act of 1990 (KERA). KERA substantially revamped public education in the state. It included not only a new funding system, but also reforms involving curriculum and testing, school governance structures, and preschool and social service programs. The legislature financed these reforms with a \$1.3 billion tax increase over 2 years. At the time, the

state's total general fund budget for 1990–1992 was just under \$9 billion (Miller 1994, p. 127). With respect to school finance policy, between 1989/1990 and 1994/1995, Kentucky's national ranking in per pupil expenditures went from 41st to 21st. Within the state, the difference in average per pupil expenditure between the top and bottom quintile of students fell by about half, from \$1,199 to \$558 (Kentucky Department of Education 1995; Trimble and Forsaith 1995; Reed 1998).

These events are quite interesting given the nature of the state's citizenry. First, Kentucky has a long history of animosity toward government and taxation. Anti-tax sentiments, in particular, run deep in the state's political culture. If Kentuckians hate taxes, how did elected officials come to endorse such a large tax increase? Second, given the sweeping nature of the Court's decision, why was there no significant resistance to judicially mandated reform? In striking down the "entire system," the Court went way beyond the relief plaintiffs had requested. One would think that if judicial usurpation would ever be at issue, then this would be the case.

This seeming paradox can be explained when the case is placed in its immediate political context. Simply put, the Court's ruling entered a climate already quite favorable to reform. By 1989, finance inequities and other educational problems had been on the political agenda for 6 years. Several opinion polls had marked the public's increasing receptivity to educational reform, and various educational interest groups had mobilized to support the Council's lawsuit and higher educational spending. However, the governor and the legislature were deadlocked over taxes and competing educational reform programs. The Court's decision broke this logjam and provided "cover" for elected officials to endorse tax increases (Miller 1994, p. 68; Dove 1991).

2.6.2 The Resulting Education Reform in Kentucky

The Kentucky General Assembly responded to the Supreme Court's decision with a commitment to provide a public school system that would meet the requirements of the *Rose v. Council* decision and comply with the Kentucky constitution. A new system of financing Kentucky's public schools was a key element of the legislature's response. The program was called Support Education Excellence in Kentucky (SEEK) and was designed to remedy funding disparities between litigant and non-litigant school districts.

A school finance system is integral to reform to the extent that funding arrangements reflect the core values of the system like equality and efficiency (Guthrie et al. 1988). The *Rose v. Council* decision considered the relationship in Kentucky between property wealth and opportunities for students. Judge Corns concluded that students in wealthier districts were provided opportunities and inputs (for example, Advanced Placement classes) not available to students in less wealthy districts.

The Kentucky General Assembly created SEEK as a three-tiered system including a foundation program with a guaranteed tax base, local revenue requirements, and local options. Base funding levels, adjustments, enforcement of maximum class

size limits, and allotment of program funds in SEEK were outlined by statute. In 1990–1991, SEEK's first year, the base funding guarantee for each district was \$2,305. By 1999–2000, the base guarantee had risen to \$2,924 (Office of Education Accountability 2000). An adjusted base guarantees an amount of revenue per pupil to be provided for each school district adjusted by a series of factors that affect the cost of providing services to students. The four factors that impact base adjustments are (1) exceptional (special education) children, (2) transportation, (3) at-risk pupils, and (4) pupils receiving services in a home and/or hospital setting.

In addressing the relationship in Kentucky between property wealth and educational opportunities, *Rose v. Council* concluded that students in wealthier districts were provided opportunities and inputs not available to students in less wealthy districts. The SEEK program was structured as a way to compensate for this relationship with the goal of achieving financial equity among Kentucky's school districts.

Besides addressing funding, KERA set out to improve accountability. Schools that did not meet certain expected levels of achievement were labeled "at-risk" and continued "at-risk" status could result in sanctions. Likewise, schools that exceeded expected achievement levels were considered "success" schools and received rewards.

Because of the financial implications for the school's and school system's status, an appeals process was developed. A study by Petrosko (1990) noted that the accountability assessment system did not account for the mobility of students between schools and districts. Additionally, because of the unique nature of the testing system used under the new reforms, comparisons of Kentucky's success to other states were difficult to make (Petrosko 1991).

2.7 Funding and Reform in Tennessee

2.7.1 Overview of School Funding in Tennessee

Funding disparities among school districts in Tennessee led to the formation of a group of school districts, parents, school officials, and students known as the "Tennessee Small School Systems," more commonly referred to as "small schools." The group challenged the state's educational financing system, alleging that it violated the equal protection provisions of the Tennessee Constitution (Martin 1994).

The small schools lawsuit was filed in 1988 on behalf of 77 small, rural school districts. The claimants based their case on a provision in Tennessee's Constitution that requires "substantially equal educational opportunities to all students" (Martin 1994). Because wide funding disparities among districts existed, the small schools coalition claimed that Tennessee was not meeting its burden to provide "substantially equal" educational opportunities. The Tennessee Supreme Court agreed, and mandated that the General Assembly enact a new funding formula that would meet the constitutional requirement (Martin 1994).

When the lawsuit was filed, public education in Tennessee was funded 45 % by the state, 45 % by the local government, and 10 % by the federal government.

The largest source of state funding was the Tennessee Foundation Program. The balance of state funding was provided by grants for textbooks, transportation, and teacher benefits. The TFP, essentially the state's base funding formula, used a weighted average daily attendance formula to determine distribution of funds. The formula was weighted to account for factors such as grade level, vocational courses, and other cost factors.

However, categorical grants for items such as textbooks were not distributed according to a weighted formula. A small portion of TFP funds were allotted for equalization based on assessed property values. Additional adjustments were made based on the training and experience level of teachers within the district. As wealthier school districts tended to attract better trained, more experienced teachers, the state formula tended to benefit those districts and served to widen the funding gap among districts (Supreme Court of Tennessee 1993).

Tennessee state law provides that local education funding comes from two primary sources: property tax and local option sales tax. Additional funds are raised in some localities through an assortment of taxes, including wheel or beer taxes. Counties or municipalities that elect to utilize the local option sales tax must allocate half of the revenue generated from such taxes to education (Supreme Court of Tennessee 1993).

2.7.2 Tennessee's Response to Small Schools

Similar to the lawsuit in Kentucky, the "small schools" lawsuit in Tennessee forced change in Tennessee's education system. Because the Tennessee Supreme Court found the state's system of funding public education inadequate, the Basic Education Plan (BEP) was enacted as part of the Education Improvement Act of 1992. The BEP is designed to foster equity in funding among the state's schools with a goal of achieving improved educational outcomes across the state. However, recent data indicate that Tennessee's public schools now receive a lower percentage of funds from the state than before the BEP was implemented (NCES 2003). The state now provides 43.8 % of funding for local districts while local revenue accounts for more than 46 % of funds expended. This compared to 45 % from the state and 45 % from local districts prior to BEP implementation. Whether or not the BEP has resulted in equity among districts, it appears that the state share of school funding has actually decreased as a result of the reform.

Unfortunately, little literature exists specifically addressing Tennessee's education reform effort. Examining the reform, the BEP does seem similar to the SEEK program in Kentucky. As part of the reform, Tennessee also implemented the TCAP testing system to assess student progress (Pipho 1998).

Pipho (1998) notes that Tennessee expanded the reach of the TCAP in 1992 when it added the Tennessee Value-Added Assessment System (TVAAS). By using TVAAS, Tennessee takes the TCAP data and applies a statistical methodology that has demonstrated that the relative effectiveness of school districts, schools, and

teachers in facilitating academic growth of student populations can be estimated with considerable sensitivity. In terms of measurement, then, Tennessee appears to have gotten it right. What we don't know is how Tennessee's reforms are working in terms of achieving the stated goal of the BEP.

2.8 Analysis

Achieving funding equity has driven education reform over the past two decades. Because of various court orders, states are seeking funding equity formulas. Such formulas are not easily achieved. And once put in place, it is unclear whether the equity funding formula has significant impact on actual achievement outcomes. While some formulas may be more easily monitored, no one formula has been shown to provide the positive results ostensibly ordered by the courts. Further study would certainly examine equity funding in states like Tennessee and Kentucky to determine the efficacy of the chosen methods. Additional study might compare achievement-centered reforms such as the CATS system in Kentucky and the TCAP tests in Tennessee. If funding equity is achieved through either state's formula, then the achievement formulas should also be working. However, if funding equity is not a result of funding formula reform, achievement-centered reform may not make a significant impact. Finally, if achievement success is achieved without funding formula success, new assumptions may be made about the connection between school funding and student achievement.

This study will fill a gap in the literature by providing a comparison of two similarly situated states which implemented both funding and achievement reforms in response to court orders. Kentucky and Tennessee share demographic characteristics making the comparison both relevant and interesting to researchers seeking answers about the impact of funding equity on student achievement. Additionally, the reforms in these states were implemented within 2 years of each other and in both states, the reforms have been in effect for over 10 years, providing appropriate data for studying the long-term impact of such reform. While the literature does contain analysis of specific state funding systems and their impact on equity and student achievement, a comparison such as the one conducted in this study is not currently available.

Specifically, this study will be guided by two significant questions. First, do attempts at funding equity actually lead to equity among districts within a state? Second, do attempts at funding equity significantly impact student achievement? The existing literature suggests that without significant, if not complete, state control of the funding process, equity among districts cannot be achieved (Archer 2005; Ko 2006). However, Guthrie (1980) argues that complete state control of the funding process is simply not practical. While Kentucky, with a 60 % state share of school funding, exhibits more control than Tennessee (43 %), neither state's funding formula is based on complete state control. Therefore, this study will test the assumption that complete state control is necessary to achieve equity among districts.

Additionally, the difference between states with significant funding control (Kentucky) and those with a more shared approach (Tennessee) will be analyzed. Such analysis is not readily available in the existing literature on funding equity.

The second question will allow examination of the impact of school funding on student achievement. There is significant debate on the impact of funding on student achievement. This study certainly will not settle that debate. However, it will provide additional data and information on how school funding impacts student achievement. While quantifiable data on student achievement exists in both states, the use of ARIMA modeling may provide new insight as well as reliable short-term predictions for the future of student achievement should the reforms continue on their present path. Additionally, comparisons among states related to the efficacy of reform approaches are not readily available. This study will provide a comparison of two approaches to funding reform and student achievement in two similar states.

Analysis on the impact of equity on student achievement will also fill a gap in the literature. While much discussion exists on the relationship of funding and student achievement, analyzing the impact of attempts at equity represents new ground. Do the attempts to achieve funding equity, whether or not equity is achieved, have an impact on student achievement? Does the method of achieving equity make a difference? This study will provide insight and suggest some answers to these questions.

Five specific research questions guide the study and the development of subsequent hypotheses and attendant testing methods seek to provide answers:

1. Did the reforms in Kentucky and Tennessee improve educational outcomes?
2. Do efforts to achieve funding equity impact student achievement?
3. Which state's approach to education reform was more effective?
4. Did the funding formulas in each state achieve the stated goal of equity among districts?
5. Which state's approach to achieving funding equity was more effective?

By suggesting answers to these questions, the study will add to the literature on school funding reform, school funding equity, school funding and student achievement, and the impact of funding equity on student achievement. Analysis of the two approaches may suggest that one or both were effective or that one was more effective than another. Implications for future reform will be addressed. Predictions of the short-term effects of continuing on each state's current path will be possible.



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