# Strengthening the Link Between Effective School Expenditures and State Funding Mechanisms

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## *Executive Summary*

The existence of many competing economic analyses has prompted generalizations about financial and human resource practices that consistently improve educational outcomes. Such generalizations variously suggest improving administrative policies; classroom and curriculum content; fiscal and physical capacity; and teacher characteristics. Yet, even in the face of increased litigation, state legislatures are slow to apply research findings and to revise school funding formulas and accountability systems in order to adequately provide for the basic needs of widely varying schools and districts. Too often, funding is not structured to ensure all students access to effective educational services.

The situation might improve significantly if policymakers at state and district levels would use reliable research findings that strongly suggest linkages between student achievement and school finance policies. Researchers can help empower policymakers to generate maximum benefit from their budgets by continuing to study possible relationships between finance and outcomes. Therefore, it is specifically recommended that:

- Policymakers adjust funding formulas in response to the influence of specific socioeconomic and demographic community characteristics known to affect educational outcomes (for example, the percentage of the adult population lacking a high school diploma). Researchers should continue to extend and refine what is known about the effect of such characteristics.
- Both policymakers and researchers work to develop systematic district-level data collection, management, reporting, and dissemination mechanisms to accurately reflect the impact of funding policies that incorporate research findings on incentives and demographic characteristics;
- Researchers identify statistical relationships between well-specified financial and human resources (for example, the type, quality, and cost of teachers) and student learning outcomes.
- Policymakers monitor possible linkages among their financial and human resource allocations, organizational productivity, and student achievement.

- Researchers continue to study the effect of incentives that focus district, school, and student efforts onto desirable educational outcomes. Policymakers should factor what is already known about incentives into their financial policy decisions.

Failure to formulate financial policy in light of research findings is failure to maximize chances for school success. Such failure is likely to reduce educational opportunities for students and to increase the probability of poor educational (and perhaps economic) outcomes.

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## *Introduction*

Districts and schools are generally expected to provide all students with an extensive array of materials and services: broad-based curriculum, fully equipped classrooms, qualified teachers, quality teaching materials, new technologies, a wide range of extracurricular activities, academic counseling, health and psychological services, school libraries, and a host of other non-instructional services. In support of these efforts, researchers, policymakers, and administrators across the United States spend considerable energy developing school finance formulas, student achievement standards, and assessment systems intended to ensure that resource allocation maximizes both student success and fiscal efficiency. Yet, despite a history of financial and policy reform efforts intended to accomplish these goals, student academic outcomes have not increased proportionately with corresponding financial and human resource redistribution or increases.

The ideal of fiscal equity has long been a key concern in policies that generate, distribute, and manage educational resources. In this context, "equity" means "fairness"—that is, it is widely accepted that public education resources should be distributed without privileging one district or school over another.[1] But being fair, or equitable, is not always easy in practice because of two competing perspectives on what is fair.[2] The first is "horizontal equity"—the act of treating districts or schools with similar qualities similarly. The second is "vertical equity"—the act of treating districts or schools with different characteristics differently.[3]

Efficiency, by contrast, is concerned with how much students learn or how many services they receive for a given cost.[4] Drawn from the private sector, the goal of being "more efficient" means one of two things in the context of school finance:[5] It might mean, first, that a given amount of resources is made to yield a greater amount of student learning or services; or, it might mean that reduced resources are made to maintain a previous level of learning or services. Funding strategies for public schools differ in an essential way from those of business, however. Whereas a business might choose to divert resources from one operational area to another in order to increase systemic efficiency, policymakers generally will not reduce resources for one school or district in order to improve the situation of another.

Given that the principles of equity and efficiency underpin funding policies intended to promote student achievement, it is important to be aware of three underlying assumptions:

*Assumption 1*: Equitable distributions of financial and human resources among public districts and schools tend to reduce differences in student achievement generated by socioeconomic status, ethnicity and race, and/or geographic location;

*Assumption 2*: Efficient use of financial and human resources by public districts and schools tends to reduce differences in student outcomes based on wealth, ethnicity and race, and/or geographic location; and,

*Assumption 3*: Both equitable distributions and efficient use of resources are promoted by well-defined accountability standards that include uniform information reporting and objective measures of organizational and academic progress.

In deference to these assumptions, each state uses a formula to redistribute tax dollars to school districts. Acknowledging that unique district, school, or student characteristics determine, at least in part, necessary spending levels, different funding formulas are developed to reflect circumstances unique to individual states or districts. Unfortunately, few state funding formulas—including those with "need adjustment" modifications—reflect attention to components that research has shown to affect outcomes.

Therefore, the purpose of this brief is to: 1) explain the context surrounding the "'effective school spending" debate; 2) discuss specific spending categories that positively affect academic quality; 3) explore the primary obstacles to incorporating research-based expense guidelines into school funding formulas, including their need adjustments; and, 4) provide recommendations to improve relationships between state school funding formulas, expense components, and desired academic outcomes.

## *The Context Surrounding Discussions of Effective School Spending* [6]

In *A Nation at Risk*, the 1983 National Commission on Excellence in Education declared that fiscal equity and economic efficiency should be pursued simultaneously:[7]

> We cannot permit [efficiency] to yield to [equity] either in principle or practice... To do so would deny young people their chance to learn and live according to their aspirations and abilities. [Granting preference to equity] also would lead to a generalized accommodation to mediocrity in our society on one hand or to the creation of an undemocratic elitism on the other… (p. 5)

The Commission charged that within the equity movement, traditional measures of academic success—high school graduation and college admission—came to be seen as entitlements. That is, these measures were

being perceived as benefits students were entitled to *regardless* of their academic performance rather than as rewards earned through persistence and achievement. As a result, the Commission concluded,

> ... the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and as a people... (p. 1)

The Commission (and much of the media coverage of the report) also contended that there were serious economic consequences of a low-quality education system:

> If only to keep our competitive edge in world markets, we must rededicate ourselves to the reform of our educational system for the benefit of all.... Learning is the indispensable investment required for success in the emerging information age… (p. 2)

The politics and publicity surrounding *A Nation at Risk* shifted the focus of many school finance researchers away from issues of fiscal equity. Instead, these researchers began to explore new avenues of research designed to develop a more demanding curriculum and to improve economic efficiency. These efforts, infused with efficiency arguments, came to be known as "excellence" and "effective schools" research.

**Educational Excellence Research**

The "educational excellence" movement used *A Nation at Risk* as the political basis for educational reform efforts. This movement included those who argued that high-quality principals and teachers know how to educate students well, but that educational bureaucracies reduce their reach and effectiveness.[8] Moreover, some of these researchers spread the idea that what works in schools does not require additional dollars. Greater effectiveness in the educational process, they proclaimed, can be achieved through increasing efficiencies in the organization, management, and operation of districts and schools.[9]

Accordingly, some of these researchers asserted that supporters of the educational bureaucracy found it in their best interests to foster the notion that improved productivity requires increased spending.[10] In direct opposition to this "more money" argument, they claimed that there were revenue-neutral policies that educational excellence reformers should re-establish as tenets of the new educational-equity-standards movement:

1. Comprehensive school improvement strategies should be developed;

2. High academic standards should be established for all students; and,
3. These same high academic standards should underlie rigorous entry criteria for universities.

Among the researchers promoting these assertions were those who claimed that a permanent improvement in educational practices could be accomplished at little or no additional cost.[11] Most notably, Eric Hanushek argued that differences in educational productivity exist not because of variances in school expenditures, class sizes, or other school attributes, but primarily because of inequities in the distribution of teachers' education and ability.[12] He analyzed studies of public schools and found no consistent statistical relationship between educational expenditures and measures of student performance: only 20% of the studies examined showed a statistically significant positive relationship. One relationship, however, was relatively stronger in his analyses: almost 30% of the studies examined showed a positive relationship between years of teacher experience and student performance. In subsequent articles, Hanushek and others claimed the differences among school quality come primarily from the differences in the quality of teachers.[13] As a result of these analyses, Hanushek claimed that school districts should support policies that attract and retain experienced teachers, many of whom currently gravitate toward schools with high-performing students as their tenure lengthens.

**Effective Schools Research**

The denunciation of public schools in *A Nation at Risk* spawned not only the educational excellence movement; it also created what now is known as effective schools research. This research has typically focused on one of three topics: leadership, effectiveness, and equity. One of the first notable articles describing possible effective-schools research agendas urged researchers to attend to three specific areas: equity issues surrounding resources invested; the outcomes generated; and, the quality of schools.[14] Related research called for a discussion of *third-generation equity issues*, to focus on teacher quality, uses of school time, and course content, as well as the relationships between these issues and educational productivity.[15]

Others associated with the effective-schools approach argued that the excellence-movement advocates were short-sighted to conclude that additional funds would not improve the educational output of schools—conclusions based solely on weak statistical relationships.[16] In fact, re-analyses of Hanushek's meta-analyses detailing the relationship between educational resources and student learning outcomes, which had found no significant statistical relationships between educational expenditures and student achievement, found that increasing education spending *did* result in higher achievement when analyzed with an improved meta-analysis

methodology.[17] Moreover, the relationships discovered were large enough to be of both statistical and practical significance.

**A Nation Still At Risk?**

Twenty-five years after the release of *A Nation at Risk*, research detailing low levels of educational productivity—generated by combinations of students, their families, teachers, and school administrations—still is plentiful.[18] Fittingly, the original education-excellence reformers, such as William Bennett and Chester Finn, revisited some of report's themes in *A Nation Still at Risk*.[19] They claimed that the U.S. no longer faces a global danger in terms of economic decline or technological inferiority. Yet, due primarily to what they called the "unchanging educational bureaucracy," they assert the state of our children's futures still is at risk in terms of providing equitable academic opportunities for all students.

Such educational excellence reformers tend to subordinate issues of fiscal equity to the need to demand high academic standards for all children and teachers, as well as to the effectiveness and efficiency of the system as a whole. Indeed they experienced remarkable political success in the 1980s and early 1990s, focusing the public's perception on an education system in need of greater productivity. The current challenge for these reformers is to build on their successes, something many are attempting to achieve through the creation of educational service markets in the form of vouchers, charter schools, tuition tax credits, and other economic incentives as well as through the academic accountability standards required by the 2001 No Child Left Behind Act. Importantly, the theories underlying such reform efforts contend that improved organizational and economic efficiencies will create improved student achievement.

Looking back at these discussions and debates, it seems clear that even though no consistent productivity relationships between educational inputs and students outcomes have been documented, possible linkages need ongoing exploration. Especially when levels of much educational spending are decreasing even as costs for such new mandates as testing are increasing, school finance policy developers, administrators, and school communities need to continue asking what use of their limited resources will best serve students.

## *Expenditures Associated Positively with High Levels of Academic Quality*

The fiscal equity and educational efficiency debate was well captured by Coons, Clune, and Sugarman near its inception:

> Whatever it is that money may be thought to contribute to the education of children, that commodity is something highly prized by those who enjoy the greatest measure of it. If money is inadequate to improve education, the residents of poor districts should at least have an equal opportunity to be disappointed by its failure.[20]

Soon thereafter, researchers found that quality indicators should include district and school characteristics such as average number of full-time guidance workers; average per pupil library expenditure; percentile score in the key achievement areas; percent of students who drop out; pupil-teacher ratio; poverty rate; salaries of teachers, principals, and superintendents; and school budget levels.[21]

By the end of the 1980s, more "best measures" of school quality were detailed: a well-planned curriculum, attractive campus facilities, high attendance rates, high per-pupil expenditures, high quality academic offerings, low dropout rates, low pupil-teacher ratio, positive school climate, strong graduation requirements, superior library programs (now called media and technology centers), "solid gold" faculty, and a "caring" principal.[22] These aspects of school quality went beyond finances to include information about curriculum, sociodemographic compositions of districts and schools, and academic outcomes.

In the 1990s, several additional measures surfaced (or resurfaced) for recognizing and addressing school quality. These include average daily attendance, average teacher salary, computer use, counseling, low pupil-teacher ratio, minutes of class per year, percentage of teachers with advanced degrees, provision of academic counseling, provision of vocational education, school size, structured classrooms, student retention rates, and term length.[23] These newer trends also focused on teacher recruitment, teacher quality, teacher retention, and other aspects of schooling, including length of instructional time.

Now, nearly a decade into the 21st Century, with the same school quality characteristics still being debated, the message of Coons and his colleagues is being reiterated: Reasonable and intelligent people have come to agree that the distribution and management of resources available to public schools affects their level of performance.[24] In fact, the totality of this research can be summarized fairly into four main categories of resources that consistently link school quality characteristics to improved educational outcomes:[25]

- *Administrative Policies*, including collaborative management strategies at the school and district level, low student-teacher ratios, and small class sizes;
- *Classroom and Curriculum Content*, including high quality pre-school preparation, reduction of student ability grouping, and instructional interventions for students at-risk of failure;

- *Fiscal and Physical Capacity*, including high expenditures per student, high teacher salaries, and contemporary facilities; and,
- *Teacher Characteristics*, including high verbal ability, appropriate teacher training, multiple years of experience, and responsiveness to cultural diversity.

And yet, despite the breadth of research available, major challenges still complicate the study of effective spending, school characteristics, and student achievement. These issues range from how to measure inputs accurately and how to define outcomes precisely to which mathematical model might best assess the impact of student effort on academic outcomes.

## *Obstacles to Changing Structures of School Funding Formulas to Include Effective, Research-based Expenditure Categories*

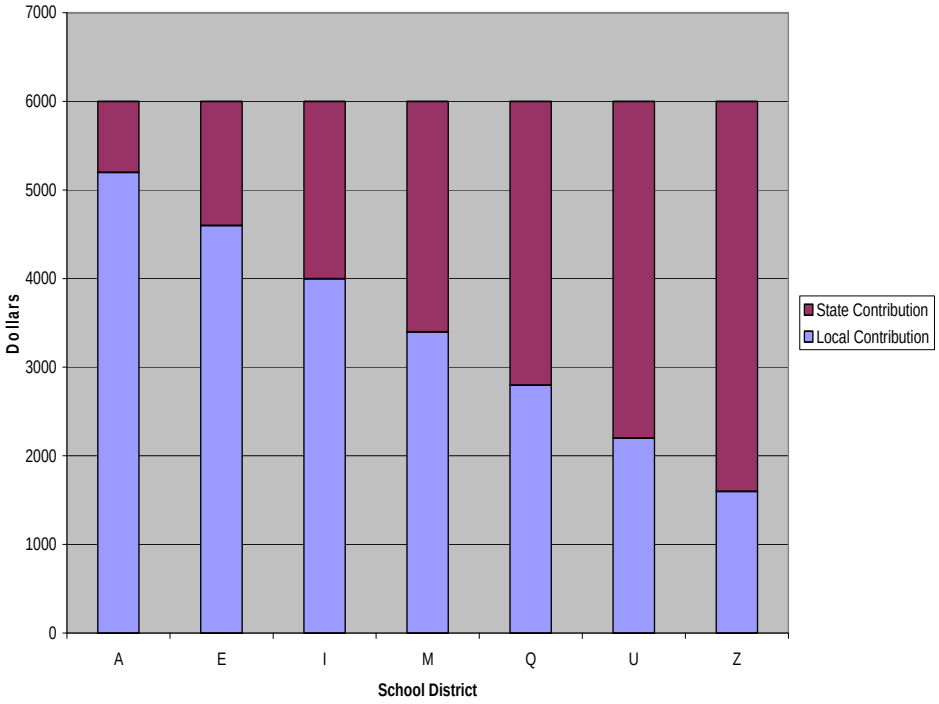
Each state uses its own formula to distribute tax dollars to school districts. The most common method is called the *minimum foundation program*. In general, a simplified minimum foundation program works like this:[26]

1. The state determines the minimum amount of money to be spent on each student in all of the districts throughout the state;
2. The property tax rate to provide this amount in the wealthiest of school districts is calculated;
3. All districts are required to tax themselves at this rate;
4. In less wealthy districts, the state makes up the difference between the dollars raised locally through the mandated tax and the dollars required by the minimum foundation program; and
5. Adjustments are made based on student, school, and district characteristics.

*Figure A* (following) illustrates how funds typically are distributed under a minimum foundation program.

Suppose a $6,000 per student foundation level has been established for all districts. In District A, the wealthiest district, the required local tax raises $5,200 per student and the state contributes $800. District Z, the poorest district, can raise only $1,600 per student and the state contributes $4,400. As a result of the minimum foundation program, each district has the same amount of general fund resources available for its students.

**Figure A.**
**Graphical Representtions of the Foundation Formula**




## Moving Beyond Formula Basics.

Acknowledging that unique district, school, or student characteristics at least partly determine necessary spending levels, the basic funding formula structure described above is typically modified to reflect the circumstances of individual states or districts. In general, unique districts, groups of students, or types of individual students are given special consideration in their district's receipt of additional funding beyond that for a "typical" or "regular" student. The following three district-level factors are, for instance, fairly common:

*Cost-of-living Factors*. These reflect differences in costs of housing, goods, and services among regions across the state in which districts are located. State legislatures certify a cost-of-living factor for each district to the department of education, based on cost-of-living analyses conducted annually or biannually. The factor is applied to the money distributed to districts. For instance, if District A receives $5,000 per student but the state funding formula dictates that a cost of living factor of 1.1 be applied to that amount, then District A will receive $5,500 per student.

*Density/Sparsity Adjustment Factors*. Also known as urbanicity or sparsity factors, this weighting provides an adjustment for certain school

districts of small or large size. For example, if a district has fewer than 100 students, or a distance of 30 miles by bus from the nearest high school district, extra weighting factors are applied to the "base" per-pupil spending.

*School or District Size Factors* These are determined using enrollment-based calculations and are unique to each school district. This factor is included to recognize purchasing power differences among districts; that is, "significantly smaller than average" and "significantly larger than average" districts receive greater size factors and more funding than "medium-sized" districts.

In addition to these three district-level factors, there are two student-level "add-on weighting factors" which are used to provide additional funds in connection with state and federally mandates for children needing compensatory or supplementary educational services:

*Special Education Factors* incorporate program funding in such areas as specific learning disabilities, emotional disabilities, mild mental retardation, remedial education, speech/language impairment, preschool moderate delay, preschool speech-language delay, other health impairments, and education for the "gifted."

*Student At-risk Factors* apply to students who are not performing well academically as well as to students who are eligible for the federal free lunch program or are categorized by characteristic into another risk category. Eligibility for participation in the federal free lunch program is used as a proxy for each school district's at-risk pupil population. Increased funding is provided to recognize that expenses among districts vary as pupil populations vary, especially in their at-risk populations. For each at-risk pupil, a district might receive 15% more per-pupil funding.

Unfortunately, as has been shown above, few state funding formulas include need adjustment categories that match more than a few of these effective, research-based expenditure components.

**If We Know What Works, Why Not Improve Formulas?**

In examining education finance policy within organizational and political contexts, it is no surprise that both individuals and organizations struggle for power to distribute scarce resources. These struggles reflect conflicts and differences with respect to values, preferences, beliefs, perceptions of reality, and access to information. As a result of these political and organizational conflicts, the ability to bargain, negotiate, and compromise becomes crucial for any lasting resolution.

If successful, the resulting web of compromises usually reflects a confusing multiplicity of objectives—many in opposition to each another—that serve to promote only incremental change. Not surprisingly, this analysis of school funding formulas and effective expenditure components acknowledges the effects of such economic and sociopolitical contexts. In fact, two primary themes emerge:

- The 1980s saw a shift in the political landscape that is still in effect, away from vertically equitable spending on students—that is, away from funding different students differently in order to create comparable educational opportunities—and toward emphasis on efficient and measurable student, teacher, administrator and school accountability; and
- A shift from the 1990s that also continues, moving education finance policies away from equity and toward ideas of adequacy—that is, to determining a "base cost" for educational services that should enable all students to attain a prescribed minimum level of educational opportunity.

Moreover, after approximately a decade of favorable economic conditions and the consequent growth in state revenues, many states ended the year 2007 with sharply reduced revenue projections and found themselves struggling over various ways to reduce expenditures. Two other specific state actions taken during the early years of the "Booming 2000s" may further exacerbate future fiscal challenges:

1. Many state legislatures reduced tax rates. In order to increase rates again, lawmakers will have to take unpopular political action.
2. Many state legislatures funded new programs. During these austere economic times, new programs now will compete with long-standing public school services for funding.

Within the context of these political ideas and trends, four themes emerge that affect district, school, and academic quality:

- *Slow Changes in State Funding Formulas*. Court-ordered or legislatively mandated changes to education finance mechanisms marked the beginning of political change from equity to adequacy in school funding. In the vast majority of states, however, these efforts have resulted in only incremental legislative changes to formulas, revenue levels, tax rates, access to assessed valuation, and use of categorical supplements.
- *Major Demographic Changes*. Three significant changes in demographics have been taking place: a) general increases in the student population; b) increases in the number of students from predominately low-wealth districts and schools; and c) increases in the number of ethnic and language minority students.
- *Differential Need Associated with Geographic Location*. Tensions have increased among urban, rural, and suburban districts and schools concerning particular differential financial and educational services needed by students and staff.

- *Erosion of Local Control*. At a fundamental level, due to efforts to link funding to educational outcomes (driven in part by NCLB), districts and schools have been forced to consider what they mean when they speak of equitable educational opportunities for their students. In the midst of these considerations, individual districts have struggled to maintain local control of schools while developing state-mandated educational standards, assessment instruments, and fairness (however defined) within the context of school finance mechanisms.

Any proposal to alter the funding formula will be supported or opposed by legislators acting within the context created by all these factors. With many state budgets being reduced by the current economic slowdown and by long-term structural deficits, legislatures are necessarily considering a variety of short-term revenue options (for example, drawing revenues from "rainy day funds"), spending reductions, and "reduction in force" actions. These legislators are under enormous pressure to maintain funding for existing services (including education); therefore, public school formula changes that would increase funding must contend with that reality. Whatever the merits of a given proposal to restructure a state's basic funding formula to incorporate effective, research based expenditure components, legislators are aware of socioeconomic and political influences. Even some public school allies are reluctant to move forward.

## *Improving Relationships Between School Funding Formulas, Effective Spending Components and Academic Outcomes*

Notwithstanding such standard political practices, the potential exists to build political coalitions that yield improvements in state education funding formulas. Education practitioners, administrators, and community members can play key roles in helping to overcome legislative inertia, but to do so they will generally need to learn the history, terminology and rules of school finance. In addition, they should advocate for legislation providing uniform data reporting, collection, management, and distribution, as well as for a periodic (perhaps quadrennial) review of the efficacy of the state's funding formula.

In addition, finance reforms should include evaluations concerning how student outcomes are influenced by pursuits of particular approaches and school finance policy objectives (for example, the pursuit of equitable funding or efficient use of resources), asking if each improves core teaching and learning at school, classroom, and student levels, as dollars move from state legislatures to state departments of education to district financial offices.

In each state, a review of the school finance system should begin by detailing the current system and its context. What assumptions, evidence, and values support current understandings of school finance policy in the state? As an empirical matter, is the level of student

performance in the state associated with available resources? Also, special attention should be given to the categorical issues discussed in this brief. That is, what modifications to a per-pupil base are included in the formula, and what modifications are actually needed in the state? That need should be assessed, in part, by comparing student outcomes in areas such as test scores and attendance, graduation, and dropout rates.

These types of analyses always should be conducted prior to deciding the most appropriate way to achieve desired school quality and educational outcomes: improving efficiencies with the current approach, improving efficiencies with reallocations of existing resources, or increasing resources in appropriate manners.

In order to further distinguish school finance policies and quality measures that improve student learning outcomes, more comprehensive research needs to be conducted in sequentially linked stages. These types of projects should analyze how K-12 student academic outcomes are influenced by changes in levels of fiscal equity and economic efficiency. For example, a five-stage project might take the following form:

*Stage One*. Examine economic and sociopolitical contexts of school finance policy relationships that guide the development of conceptual and logical bases for understanding expenditure practices. School finance policy—and education policy in general—will be enhanced by providing multiple perspectives that frame analyses.

*Stage Two*. Examine multiple student performance measures across districts and schools cross-sectionally and longitudinally. Univariate statistics should be used to provide general descriptions of multiple measures of student outcomes (for example, attendance rates, dropout rates, percentage of students meeting minimum standards on state exams, or graduation rates).

*Stage Three*. Examine the state's current school finance policies and formulas, looking particularly at horizontal and vertical equity effects of baseline, categorical, and needs-based components in addition to well-specified demographic characteristics.[27]

*Stage Four*. Examine the state's current school finance policies and formulas, looking particularly at multiple measures of economic efficiency and productivity effects of baseline, categorical, and needs-based components in addition to well-specified demographic characteristics.[28]

*Stage Five*. In the context provided by equity and efficiency analyses, examine whether the levels of student performance in the state are associated with available resources. For example, one hypothesis might be:

> **$H_{01}$:** Districts (or schools) exhibiting comparatively high levels of student performance have no significant associations with school finance policy objectives or formula components.

Another hypothesis might be:

> **$H_{02}$:** Districts (or schools) exhibiting comparatively low levels of student performance have no significant associations with school finance policy objectives or formula components.

If these views are correct, more comprehensive research studies, as opposed to more narrow, issue-specific projects, should be conducted to investigate the levels of financial and human resources equity, economic efficiency, and educational achievement. In both a methodological and practical sense, it is necessary to conduct these types of analyses prior to deciding if the current usage, a reallocation, or an increase in resources is appropriate to achieve desired school quality and educational outcomes.

**Including Effective Research-Based Expenditures in School Finance Formulas.**

Imagine a major partner in an investment firm that employs hundreds of people, invests millions of dollars annually, and owns buildings and facilities worth millions more. Of course, this partner wants to be informed regularly by managers and the executive board members as to what objectives the corporation is pursuing and how well it is performing. Moreover, the partner would follow the activities of the organization closely and occupy a front row seat at every stockholders meeting.

Providing high-quality education services to public school students cannot be compared directly to the profit goals of corporations. Even so, however, our public school buildings and school grounds are similar to business offices in important ways. And, children are the greatest of all precious resources that parents, teachers, principals, and other instructional staff can invest in and develop with anticipation of positive returns. Yet, few individuals give considerable time or thought to understanding profitable investments in public education.

Granted, simply investing more money into our public education system is not enough to satisfy the critics—or supporters—of public schools. With a continued research focus on improving levels of student performance, there must be parallel efforts to identify both theoretical and empirical school finance and human resource policy options and the impact of those options on student outcomes. In terms of the states' school funding formulas, research suggests specific spending categories that might be incorporated (see Table 1, following).

**Table 1. Hypothetical Incorporation of Effective Research-Based Expenditures Into A School Funding Formula**

| Effective Category | Type of Spending |
|---|---|
| Community Support | Community Outreach and Involvement<br>Parent Outreach and Involvement |
| General Class Size Reduction | Grade K to 3: Less than 12<br>Grade 4 to 8: Less than 16<br>Grade 9-12: Less than 20 |
| Improved Organizational Structure | District-School Collaboration<br>Extended School Day<br>Site-Based Management<br>Summer School |
| Instructional Specialists | Curriculum Specialists and Tutors<br>Infusion of Technology<br>Instructional Materials |
| Professional Development | Instructional Coaches<br>Teacher Improvement Trainers<br>Unique Professional Development |
| Specialized Instructional Support | Academic Support for At-Risk, Gifted, Vocational/Technical, and Special Education Students |

Source: http://www.rcwoodassoc.com/pdf/adequacy.pdf, 5/24/2008.

For instance, the formula would allocate funding necessary for a district to adopt an extended school day or to reduce class size in grades 4-8 down to a maximum of 16.

Such an extensive categorical list undoubtedly would be intimidating to state legislators, but it should be understood as only an initial illustration. Although each item has some research support, the relative payoff of each investment will differ. Accordingly, incorporating such effective spending components into school funding formulas should be methodical. Such reforms should include evaluations of how particular approaches and school finance policy objectives influence student outcomes. In particular, as dollars move from state legislatures to state departments of education to district financial offices, these reforms should be designed to improve core teaching and learning at school, classroom, and student levels.

Increasing the participation of front-line education professionals, practitioners, and researchers in the development of policies and legislation seems to be an appropriate first step. These individuals are

asked to perform the difficult tasks of policy interpretation, implementation, and evaluation. Yet, only recently have these experienced education professionals been asked to develop policies that can improve the system of education and educational outcomes. This type of increase in participation can be exchanged politically for increased levels of accountability, innovation, and parental involvement. Further, with this increased participation and autonomy, several larger political questions can be addressed more comprehensively:

- What is the primary purpose of education, education services, and education resources?
- What are desired educational outcomes? How can these be measured appropriately? How can cost-benefit relationships be determined?
- Once the purpose(s), outcome(s), and cost(s) are defined, what are the appropriate associated roles for state governments, educators, families, and students?
- In the midst of this socio-philosophical re-examination, and most importantly for the audience of this research, what is the new role for educators, policy makers, and researchers?

In order to address the political challenges affecting education finance formulas, concerned parties will first have to redefine ideas of educational equity, efficiency, and accountability to conform to fluctuations in political climate. Second, their efforts will have to recognize the current recessionary economic climate and acknowledge the improbability of generating larger amounts of revenue or increasing tax rates, access to assessed valuation, and/or use of categorical supplements. Searching for more effective and efficient uses of current revenues will yield more productive results. Third, they will have to address differences in educational needs for increasingly multifaceted districts and for other sociodemographic changes in the number and types of students; this will require more adroitly aligning need adjustments to reflect what research has demonstrated to be effective areas for intervention. This task may prove difficult as the push for more state control tends to necessitate a more equitable—and possibly less efficient—treatment of students based on their needs.

## *Recommendations*

The current situation might improve significantly if policymakers at state and district levels would use reliable research findings that strongly suggest linkages between student achievement and school finance policies.[29] Researchers can help empower policymakers to generate maximum benefit from their budgets by continuing to study possible relationships between finance and outcomes. Therefore, it is specifically recommended that:

- Policymakers adjust funding formulas in response to the influence of specific socioeconomic and demographic community characteristics known to affect educational outcomes (for example, the percentage of the adult population lacking a high school diploma). Researchers should continue to extend and refine what is known about the effect of such characteristics.
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- Researchers identify statistical relationships between well-specified financial and human resources (for example, the type, quality, and cost of teachers) and student learning outcomes.
- Policymakers monitor possible linkages among their financial and human resource allocations, organizational productivity, and student achievement.
- Researchers continue to study the effect of incentives that focus district, school, and student efforts onto desirable educational outcomes. Policymakers should factor what is already known about incentives into their financial policy decisions.

Failure to formulate financial policy in light of research findings is failure to maximize chances for school success. Such failure is likely to reduce educational opportunities for students and to increase the probability of poor educational (and perhaps economic) outcomes.

## *Notes and References*


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[3] For example, suppose we have two exceptionally bright students: One is from a low-income family; and, the other has middle-income parents. We know both of these students are very bright; therefore, the principle of horizontal equity requires both students to be placed in accelerated classes. Further, the low-income student seems to have trouble concentrating during class. A teacher discovers this student's family – and other students who are in similar situations – cannot always provide breakfast for their children. The principle of vertical equity allows the school to begin a free breakfast program for low-income students but requires other students to pay.

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[6] This section draws extensively from the author's earlier work, including the following:

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[26] The foundation amount should not be confused with a minimum amount. In practice, foundation tax rates generally are not determined by the wealthiest spending district but by political compromises. Moreover, districts may not be required to tax themselves at the foundation level.

[27] Analyses should be conducted both cross-sectionally and longitudinally. Univariate statistics should be used to provide general descriptions of state education finance formulas, school quality characteristics, and student achievement measures. Horizontal and vertical equity analyses should

be used to determine levels of fiscal equity, to measure the impact of various demographic and socioeconomic factors, and to determine the influence of specific school finance formula components

[28] Analyses should be conducted both cross-sectionally and longitudinally. Specifically, in addition to traditional ordinary least squares regression analyses, utilization of three additional efficiency estimation methodologies – frontier regression, modified quadriform, and distance function analyses – in the investigation of efficiency should be considered.

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