

Weighted Student Formula (WSF)

What Is It and How Does It Impact
Educational Programs in
Large Urban Districts?

NEA RESEARCH

April 2005

Weighted Student Formula (WSF)

*What Is It and How Does It Impact Educational
Programs in Large Urban Districts?*

Mike Petko
NEA Research

Prepared by passage of and in accordance with New Business Item 2004-18.
NEA will conduct an analysis of “weighted student formula,” also known as “student-based budgeting,” and how it impacts the educational programs in large urban districts. This information will be published in an issue of NEA Today, made available on the NEA Web site, and will appear in other publications.



The National Education Association is the nation's largest professional employee organization, representing 2.7 million elementary and secondary teachers, higher education faculty, education support professionals, school administrators, retired educators, and students preparing to become teachers.

Complimentary copies of this publication are available in limited numbers from NEA Research for NEA state and local associations and UniServ staff. Call 202-822-7400. This publication may also be downloaded from www.nea.org.

Reproduction: No part of this report may be reproduced in any form without permission from NEA Research, except by NEA-affiliated associations or NEA members. Any reproduction of the report materials must include the usual credit line and copyright notice. Address communications to Editor, NEA Research, 1201 16th Street, N.W., Washington D.C. 20036-3290.

Published April 2005

Copyright © 2005 by the
National Education Association
All Rights Reserved

Contents

Forward	v
Executive Summary	1
Full Report	5
What is WSF?	6
How do FTE and WSF differ?	6
WSF is not SBM	8
How does WSF impact schools and school programs?	9
Impact on schools	10
Impact on school programs	11
Questions about WSF	11
Are there problems?	11
Would it place additional burdens on staff?	11
Would it create transportation problems if school choice were included?	12
Would it create incentive to mislabel students?	12
Would it increase staff training costs?	12
Does it provide adequate funding?	12
Conclusions	12
Appendix A: Comparing FTE and WSF at a Hypothetical District	15
Appendix B: Comparing WSF among Urban School Districts	19
References	23
Tables	
TABLE A1 Number of Students by Percentage of Weighted Enrollment Per School	16
TABLE A2 Comparing overall Funding from FTE and WSF	17
TABLE A3 Comparing Per-student Funding from FTE and WSF	18
TABLE B1 WSF in 10 North American Cities	20
Figures	
FIGURE 1 Impact of WSF on Funding Based on Percentage of Low-income Students	7
FIGURE 2 Variation in Funding When Other Categories are Added	8
FIGURE 3 Comparing FTE and WSF Based on Funding	10

Forward

What is “weighted student formula,” you ask? After reading *Making Schools Work: A Revolutionary Plan to Get Your Children the Education They Need* (published in 2003 by William Ouchi, University of California–Los Angeles Professor of Management, and Lydia Segal, John Jay College Associate Professor of Criminal Law and Public Administration), I had the good fortune of being invited to Edmonton, Alberta, Canada, to meet with its school district leaders. For those of you who don’t know, “weighted student formula” was born in Edmonton thirty years ago, the brainchild of former superintendent Mike Strembitsky.

Currently, a Google search of “weighted student formula” yields nearly 2,000 different Web pages. And they all say something different.

“Weighted student formula” represents a major shift in the ways district monies are allocated. Money would be put directly into the hands of principals, decentralizing a district’s budgeting system. Principals would be allowed the autonomy of allocating funds at the school level. Per-pupil dollars would be determined by the type of students in a particular school. It is foreseeable that principals might opt to hire inexperienced teachers as a cost cutting measure. Administrators might view experienced and higher-salaried teachers as a liability. Money would follow

students as they change schools, and the system could theoretically empower parents to choose schools that would best suit their children’s needs.

Well, I have some questions about all this.

Can we really expect our principals to be able to handle this, especially given their lack of experience and the high turnover rates in some of our neediest schools?

Can we assume that parents are going to just up and leave, taking their children clear across town, given the fact that many families have serious transportation issues?

Will we experience the misrepresentation of students’ needs and the deleterious mislabeling that goes with it by those in pursuit of real dollars?

Will we get the appropriate and ongoing training necessary in our schools with high turnover rates of administrators, teachers and support staff, and parents?

NEA: We need to clarify, address, and remain eternally vigilant toward some of these very big issues.

Thank you.

Manny Lopez
California Teachers Association Delegate
Speaking at the 2004
NEA Representative Assembly in Washington D.C.

Executive Summary

This paper partially fulfills the charge set out by New Business Item (NBI) 18, passed at the 2004 NEA Representative Assembly, requiring that—

NEA will conduct an analysis of “weighted student formula” also known as “student-based budgeting,” and how it impacts the educational programs in large urban districts. This information will be published in an issue of NEA Today, made available on the NEA Web site, and will appear in other publications.

The funding system known as “weighted student formula” (WSF) is a method for allocating resources to schools. It is becoming increasingly popular among urban school districts that want to improve the equitable distribution of limited resources. But, there is a misunderstanding about WSF’s impact on public schools and their programs because WSF is often confused with school-based management (SBM).

Both WSF and SBM are part of the broader reform effort known as “decentralization.” Many of the studies researched for this paper put a positive spin on WSF, but they fail to place WSF in the context of this broader decentralization effort. This failure makes analyzing WSF’s impact on public schools—especially on large urban schools—difficult at best. This paper addresses this failure by first placing WSF in the context of decentralization efforts and then analyzing its impact on schools and on school programs.

Since *A Nation at Risk: The Imperative for Educational Reform* (National Commission on Excellence in Education 1983) was published, public schools have been on the defensive, in some cases trying to justify their very exist-

ence. Large urban school districts have had to defend against a half-century’s worth of rapid and profound changes, including the onslaught of the baby boom generation, rapid growth, and changing demographics due to suburban migration. Along with population changes, funding changes have also put pressure on urban school districts. Although the Individuals with Disabilities Education Act (IDEA) and the Elementary and Secondary Education Act (ESEA) were created to provide federal funds for education, they have in fact proved limiting.

One benefit of *A Nation at Risk* and the passage of IDEA and ESEA has been to create a large body of literature dedicated to studying diversity in schools. Along with increased diversity in schools have come increased challenges to the teaching profession. Yet, many of the funding programs tied to IDEA and ESEA have effectively conjoined school districts, serving to establish a one-size-fits-all education system. This appears to be counterproductive to the Acts’ intended purposes. Also, post-1960s education finance litigation has highlighted the lack of funding for students with special needs. The challenges such issues raise identify the root of the problem as being education funding. Funding levels have never been sufficient to meet the increased demands presented by *A Nation at Risk*, IDEA, and ESEA.

Faced with increasing challenges, schools, districts, and states have sought to create reform methods to address school funding shortages. Weighted student formula is one such method, and it is gaining in popularity. WSF is a school funding method where funds follow students. Most states fund students based on a formula, where special

2 Weighted Student Formula

needs are given additional funding above a base funding level. Through WSF, funding is not averaged across districts but, rather, follows students into—and out of—whichever schools they attend.

Great Britain has used WSF for decades, but only recently has WSF made inroads to North American school districts. The Edmonton school district in Alberta, Canada, has used WSF since the early 1980s. Several U.S. urban school districts—Houston, Seattle, Los Angeles, Chicago, Denver, and Milwaukee—have implemented WSF. Most also use an SBM system for administering WSF funds.

The main reason given for using WSF is that funds follow students into the school, which means schools have more funds to meet students' individual needs. Other reasons given include increased autonomy, improved equity, and increased accountability.

While WSF and SBM are both part of the broader decentralization effort, WSF is a method for allocating revenues *to* programs and SBM is a method for managing revenues *and* programs. While both need not necessarily coexist in a district, most research indicates that using both in tandem with one another reaps the greatest benefit for WSF. The WSF research tends to exacerbate the confusion. Most of the research literature includes SBM in any discussion of WSF without identifying the fact that SBM and WSF are not synonymous. As a result, weighted student formula is often confused with school-based management. *Weighted student formula and school-based management are not the same thing.*

WSF radically changes the funding system of a school and school district. The funding change per student can be as radical as a 10-to-1 differential. Proponents of WSF point to its positive impacts, stating that dollars will follow students and create needed funds in those schools where individual programs should be created, rather than district-wide. The rationale is that schools using WSF and SBM will become more efficient.

The underlying motivator behind WSF is decentralization. As noted, both WSF and SBM are part of a broader decentralization effort. As a result, research focusing on WSF's benefits is really supporting decentralization. It

becomes problematic, then, for lay readers to differentiate between specific impacts of a particular WSF program and broader impacts of decentralization efforts. To date, no study itemizes the impact of WSF on school performance. Most studies focus on schools and districts with a full decentralization plan in place. Because such plans combine WSF and SBM, the two systems' individual impacts become merged.

Available research does not address funding adequacy very well. Among this research is an implied understanding that WSF demonstrates that current district funding levels are adequate. This implies that the problem lies with districts' organizational structures. The question, therefore, gets reframed as one of efficiency rather than of adequacy. What decentralization proponents seem to be assuming is that decentralization automatically creates more efficient schools. If schools are more efficient, goes the argument, then they will provide students with improved educational opportunities. Some preliminary studies of decentralization's overall impact in this regard do appear favorable, but questions about research methodology remain.

Quality research requires collecting data over time to demonstrate impacts. To date, there are not enough empirical data to warrant a wholehearted acceptance of either WSF or decentralization. Preliminary studies demonstrate *some* positive impacts, but a note of caution must be raised. Public education funding and budgeting do not fit neatly into business models of administration and efficiency because public education is politically driven, not profit driven. What must be remembered is that one of the primary goals of public education is to promote the development of good citizens, not line the pockets of special interest groups. Thus, the position of research should be one of cautious support for investigating any implementation of decentralization, which can include both WSF and SBM. There are some initial positive findings within the currently available research suggesting that decentralization—but not necessarily WSF or SBM—may work well for certain types of districts.

Full Report

Large urban school districts have faced budget problems since the onslaught of the baby boom generation. Rapid growth has been a primary factor, but as the urban setting changed and the population characteristics changed financing problems also changed. Early problems dealt with space and personnel issues. There never seemed to be enough of anything when an urban school district experienced significant population growth. When the population demographics changed, and urban sprawl created the suburban movement, inner-city schools faced an unprecedented challenge.

Changing demographics moved funds from cities to suburban areas, a change that redirected the tax base for funding urban schools. As the tax base dwindled, urban school districts faced an increasing problem of servicing a student population that was becoming increasingly poorer. Yet the cost of providing educational services continued to increase, especially with the advent of the Individuals with Disabilities Education Act (IDEA) and the Elementary and Secondary Education Act (ESEA).

Both IDEA and ESEA created new expenditure programs for education. The student population was viewed as diverse with diverse needs. But diversity was not the problem. The problem was that the increased awareness of student diversity revealed an increased need for additional funds to address the new areas of instruction created to handle the required needs of certain student populations. At first the federal government promised that IDEA and ESEA would provide the necessary funding, but neither program has ever been fully funded to meet student needs

or to maintain pace with inflation. Thus, the increased funding has fallen more on state budgets and the rising cost of providing special education programs has outpaced that of other education expenditures, which has placed an additional burden on urban school districts.

The obvious solution is to provide schools with the funding they need to service increased federal requirements. However, this obvious solution is currently politically charged and elusive. The traditional method of funding government programs through taxation has become a hot potato as, more and more, taxes are viewed as a “burden.” The link between taxes and government services has not been endorsed by politicians from either side of the aisle, and society as a whole has abdicated its responsibility to provide for the benefit of all involved.

The problem, however, remains. How to provide funding for struggling schools is still a major issue facing state budgets. Coupled with this funding problem is the problem of equity. Equity in school funding relates to the concept of equal treatment of equals. How do school districts ensure that each student’s need is met and that funding dollars are allocated appropriately? Current research in the area of urban school funding has focused on resource allocation practices. There is a growing body of research that supports the implementation of a relatively new system of allocating resources within a school district based on individual student needs. The system shows promise in creating equity within a district, but it cannot be viewed as a panacea for every state’s budget woes. The system is known as “weighted student formula,” or WSF.

What is WSF?

A WSF program is known by various names—student-based budgeting, school-based financing, and student-weighted budgeting. Although WSF is a relatively young budget method, it is already being implemented in a limited number of urban school districts across the United States. The basics of WSF relate to the method of allocating resources to the schools within a district based on certain characteristics of the student population and not on the traditional method based on the number of students and/or personnel. It decentralizes funding from the district level to the school level. Resources for the school are not determined by the traditional full-time equivalent (FTE) count but by the actual demographic characteristics of the students within the school.

Although WSF has been used in Great Britain for many years, its exposure in North America is limited to only a handful of large urban school districts (see Appendix B, page 19). The Edmonton, Alberta, Canada, school district implemented WSF in 1980–81, and provides approximately 80 percent of the total district's budget for WSF with 100 percent of school-level funds managed at the school level. Districts in the United States apply anywhere from 38.34 percent (Denver) to 95 percent (Milwaukee) of their total district budget for WSF. The percentage of WSF funds managed by the schools makes up as little as 20 percent of total funds (Oakland) to as high as 100 percent of total funds (Chicago, Denver, Los Angeles, and Seattle).

There are a number of reasons for implementing a WSF program. The National Association of State Boards of Education (2003) provides four factors for implementing a WSF—

1. *Efficiency.* WSF creates a system that provides a common sense groundwork for budgeting where decisions are made based on the particulars of individual students. Also, personnel assume a greater role and have a higher level of commitment to the process.
2. *Adequacy and equity.* By making the funding follow the student, equity among schools is improved because funds for extra needs are attached to the student and not to the school. Basically, if a student moves from one school to another school within a district, the student's needs don't depend on two independent school budgets.
3. *Element of competition.* The WSF system creates a motivation for schools within a district to retain students by offering the best possible programs.

4. *Linking funding to overall school improvement efforts.* WSF can be implemented with SBM to enhance the distribution of resources within a school.

The greatest benefit put forward by WSF proponents is that the funding follows the student directly into the school and that the funding is not determined by an arbitrary formula, a formula that may or may not provide the school with adequate funds to meet a student's needs. Equity for school funding is viewed from the perspective of equity based on the student's needs and not on the composite needs of the entire student body. From this perspective, if students of similar ability each retain the same level of funding no matter what school within a district they attend, then the system is equitable.

Funding through WSF does create a system where resources are distributed more equitably. All students are not equal in ability and need, and WSF reflects that diversity in its method of allocation. Further, a school's ability to develop curricula and hire personnel is improved with a WSF system over a traditional staff-based system.

How do FTE and WSF differ?

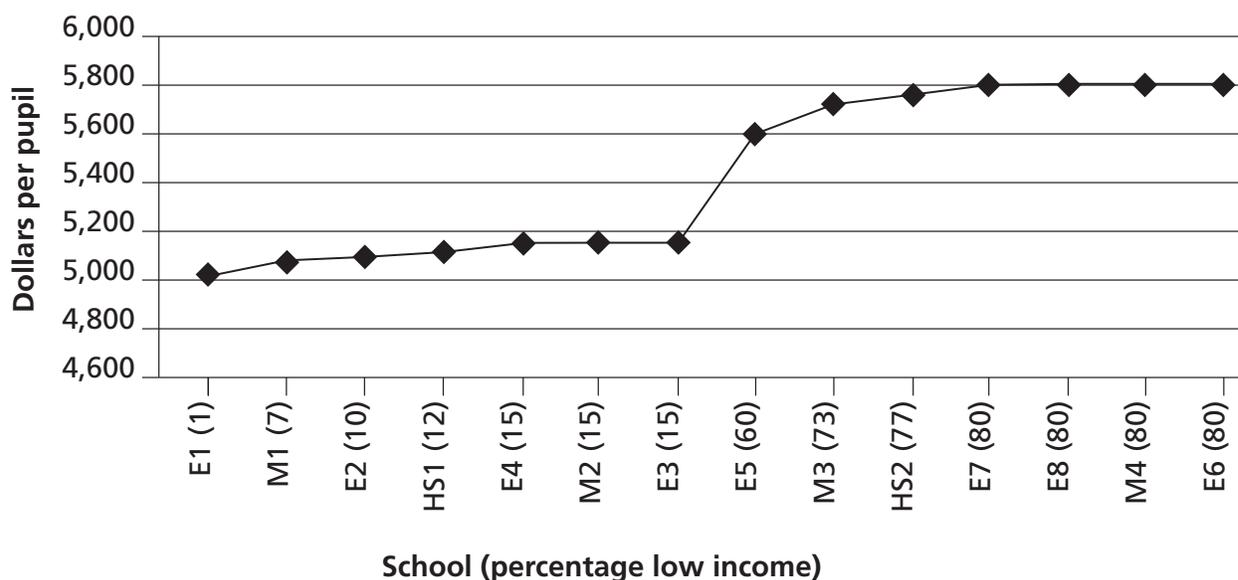
Traditionally, school districts are funded according to FTE status, and funds are passed through the districts to the schools through a formula based on staffing needs. The formula is very simple:

$$\text{Enrollment/Approved staffing ratio} = \text{Staffing needs}$$

If a district had 1,500 first-grade students with a required staffing ratio of 20:1, the number of staff needed for the school would be determined by the formula:

$$1,500/20:1 \text{ ratio} = 75 \text{ staff positions}$$

The number of staff positions becomes more difficult to translate into the individual school. If a school had only 100 first-grade students, then it would be given five staff positions. If the school had 65 first-grade students, then it would be given three staff positions. The remaining students would be counted as one-quarter of a staff position, making it difficult to hire an additional teacher unless the principal could make up the difference by finding additional one-quarter staff positions among other grades. However, the newly created makeshift staff position would require that teacher to teach multiple preps for the same pay as other teachers.

FIGURE 1 Impact of WSF on Funding Based on Percentage of Low-income Students

With WSF, the student brings the funds into the school and the principal bases staffing on the number of students, which could actually reduce the teacher-student ratio within that school. If the school had only 65 first-grade students, the principal could split all 65 among four teachers, with all classes under the 20:1 ratio.

Appendix A (page 15) provides a comparison analysis of the impact of funding from FTE and WSF at a hypothetical school district. In a traditional FTE funding system, each school within a district would receive equal funding for each student based on the district's aggregate student demographics. Even with a weighted system for special needs, if an FTE funding system were used staffing would be based on the number of students within the school. Under an FTE system, schools in well-to-do neighborhoods with a low population of special-needs students would receive the same level of funding per student.

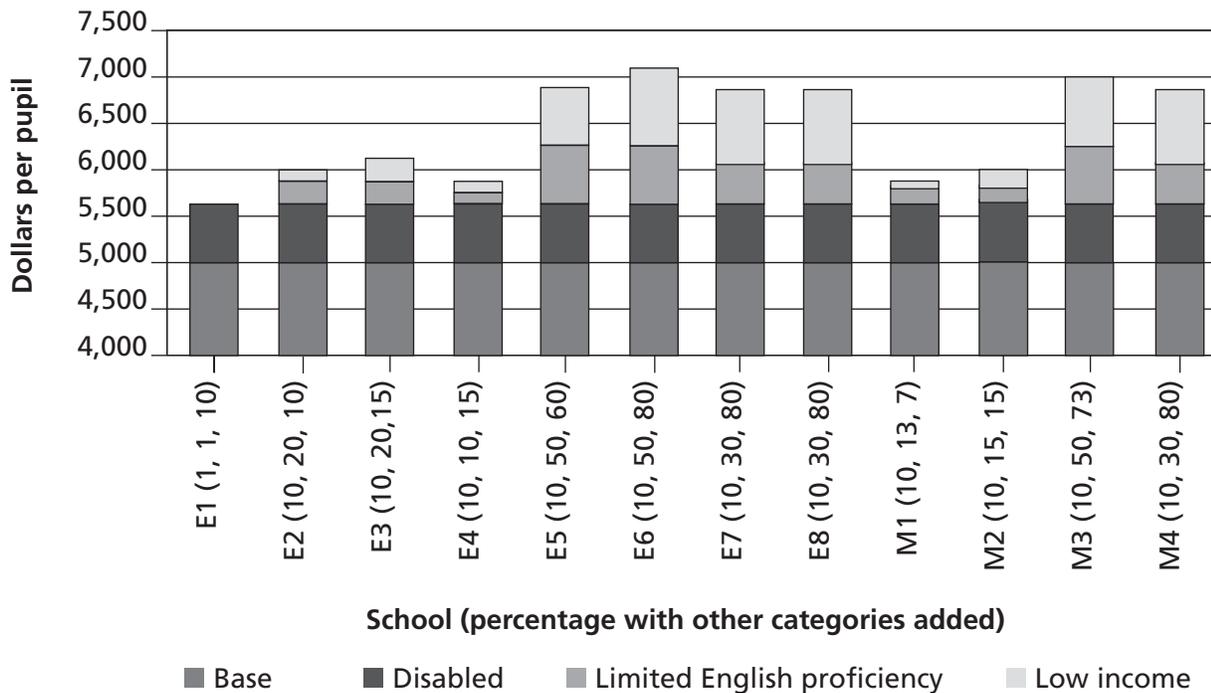
As Appendix A illustrates, the FTE method generates \$6,636 of funding per student. However, when a WSF system is used, schools with more special-needs students receive more funding per student than schools with more traditional students. In Appendix A, the range in funding per student can be as low as \$5,763 to as high as \$7,075. This difference reflects the differences in the student population within each school. Although individual schools may have more funds to use, the theory of weighting according to student need would require additional funds for additional services for those students. Schools with a higher concentration of low-income students, for exam-

ple, would receive additional funds to provide tutoring and counseling services. FIGURE 1 illustrates the impact WSF has on a school's per-student funding based on the percentage of low-income students.

In FIGURE 1, schools are labeled E (elementary), M (middle), and HS (high school). The number in parentheses next to the school label represents the percentage of low-income students within that school. Of the fourteen schools represented (taken from Appendix A's hypothetical district), those with a higher concentration of low-income students receive higher funding per student. The highest level reached is \$5,800 for an 80 percent concentration. Funding levels would also change if the weights for each child were to change.

Itemizing these numbers further reveals that the funding per student for various other categories creates a level unique to an individual school's student population characteristics. FIGURE 2 shows the variation in per-student funding for the same schools in FIGURE 1, except that disability and limited English proficiency have been added. The more varied an individual school's individual student population characteristics, the more varied the per-student funding for that school.

FIGURE 2 illustrates that all schools receive the same amount of base funding per student, and because all the schools have a 10 percent special education population each receives an additional share per student of equal funds. In FIGURE 2, the difference comes for those schools that have higher percentages of limited English proficiency and low-

FIGURE 2 Variation in Funding When Other Categories are Added

income students. Schools with the highest percentages of those students receive the highest funding per student.

Because of the mixture within the student population, school E6 in FIGURE 2 has the highest level of per-student funding (\$7,075) among the schools in the hypothetical district. The implication for reallocating resources in this manner is that school E6 would now have a funding level adequate for providing the level of services appropriate for students with additional needs.

One difficulty with this assumption, however, is that there is confusion in the research literature between WSF and SBM. Implementing WSF does not necessarily lead to an efficient management system. Thus, proponents of WSF also promote implementing an SBM system to complement the decentralized resources (Deroche et al. 2004). Current research often mingles both WSF and SBM together, as though they were one and the same. They are, in fact, two distinct methods derived from an overall decentralization theory.

This would probably be more evident to lay readers if the research literature focused primarily on decentralization and its impact on school programs. But, because both WSF and SBM often get mentioned in a paper's title, readers tend to interpret results as though there were a direct connection between the two. Such a misunderstanding would be eliminated if more research focused on decen-

tralization's organizational aspects and impacts rather than on only one of decentralization's many components, namely WSF. Some research does attempt to focus on decentralization's organizational aspects and on its impact on schools and school programs (Ouchi et al. 2002, Ouchi et al. 2003, Ouchi 2004). But, again, the findings of this research are very positive, describing how decentralization has helped schools organize programs to better meet student needs. Edmonton's public schools, for example, are cited as having improved so much that a majority of Edmonton's citizens prefer them over private schools (Ouchi et al. 2002).

WSF is not SBM

As has been mentioned, WSF is a method of decentralizing the resource allocation for a school. Instead of aggregating FTEs and weighted FTEs for a district and then dividing by the number of FTEs per school, the WSF method calculates resources based on the individual school's FTEs and weighted FTEs. This shifts the resources into those schools with higher concentrations of special-needs students. This process, however, is often confused with the method used for budgeting, or managing, those resources. The method of budgeting, SBM, is a system for managing resources once they are already in the school.

An SBM system decentralizes the budgeting process to give the school more control over managing its resources. The idea is similar to WSF, in that SBM decentralizes control. But the methods, first of distributing resources and then of managing resources, are *two distinct processes*. Therefore, using WSF does not necessarily lead to using SBM. Appendix B, which compares WSF among ten North American urban school districts, illustrates that some of the districts that use WSF do not allow for all the funds to be managed at the school level. However, most of the school districts using WSF also allow school sites to manage some or all of the funds. Oakland, for example, allows schools to manage only 20 percent of WSF funds. Philadelphia and Milwaukee allow 67.3 and 70 percent, respectively.

WSF and SBM do not necessarily have to coexist within a district that uses WSF. But using SBM does complement a WSF system. Using SBM with WSF requires a strong, well-designed training program, and such a program can help school principals navigate budget process complexities (Ouchi et al. 2002). Within a district, principal training usually includes more personnel training than budget training. But, if WSF and SBM are to be used together successfully, principals must be given the necessary training to handle the complexities of budgeting as well as of personnel administration. The need for additional training may be more than some districts are prepared for, but a smooth transition will come with proper preplanning and development.

The confusion is exacerbated by the research literature. To date, most research studies incorporate a discussion of SBM within a discussion of WSF (see, for example, Fermanich et al. 2000, Miles and Roza 2004). This makes it difficult to separate out and isolate the true impact of WSF. Any measured WSF impact is colored by the presence of SBM. Since some districts using WSF also use SBM, determining the impact of WSF by itself is difficult. However, there is evidence that using both WSF and SBM does lead to improved student achievement (Archibald 2001, Ouchi 2004).

How does WSF impact schools and school programs?

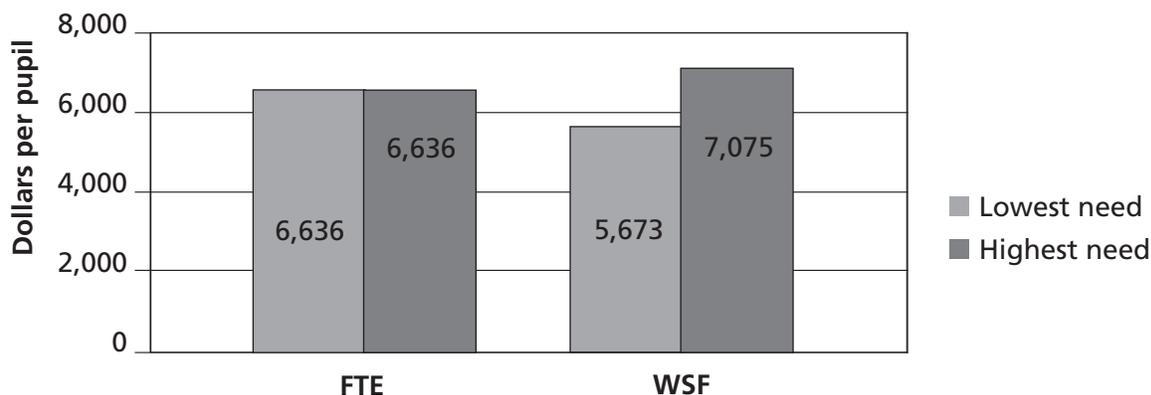
There has been some research on the impact of decentralization on school efficiency (Stiefel et al. 1999). But concluding that a WSF system will enhance efficiency would be premature based on the paucity of research in this area. “Efficiency” is a term applied to the method of distribut-

ing and using funds, capital, and personnel. The business community prizes the strong relationship between efficiency and productivity, and this may explain the involvement of such business luminaries as William Ouchi in WSF study and promotion. The more efficient the system the more profitable it is for business. In an effort to reform school productivity, economists and business researchers have used efficiency rhetoric and methodology in an attempt to define and improve school effectiveness. The intent is to modify a business efficiency model and apply it to education to make education more “effective” and, therefore, more “productive.” The theory is that improved functionality will lead to improved productivity (i.e., test scores).

As has been mentioned, WSF and SBM are not the same thing. Does allocating resources weighted on a per-student basis actually help an individual school? And how does WSF affect school programs? Schools are politically driven, not profit driven. Since schools, children, and the political environments in which they exist are diverse, the answers to these questions are not simply “yes” or “no.” If a district’s intention is to provide student funding so services can be provided at the school level, then WSF makes sense because WSF allows individual schools to provide staffing services that meet the needs of the immediate student population. The influx of money to the individual school seems to make sense. However, the change in resources may have a negative impact on schools, and it is this potential that should be considered when determining if WSF makes sense.

The current report does not question the need for some sort of change in the method of funding schools. What it does question is whether WSF is an effective program for improving schools. The need for more funds in schools is supported by research and by 30-plus years of court rulings. Recent school funding litigation cases have focused on funding adequacy rather than on funding equity. WSF is a method that improves funding equity, but it does not address whether funding is adequate. Simply put, adequacy means there are enough funds flowing into schools to create education environments where learning can occur that enables students to meet state standards. There is little in the research literature to support a contention that WSF provides adequate funding (Archibald 2001).

Rather, the issue of adequacy is implied by most research studies, which tend to assume that using WSF will provide adequate resources to individual schools. The theory is that if a school has additional funds for students

FIGURE 3 Comparing FTE and WSF Based on Funding

with special needs then it can develop additional programs to meet those needs. The theory, however, confuses WSF with SBM. Most of the studies that illustrate positive impacts on school programs focus attention on curriculum reforms rather than on funding levels. This creates an implied impact of the funding scheme that is not, in fact, measured by the studies. However, the difficulty of proving conclusively that WSF increases adequacy should not deter from the positive results that are being reported with the combined usage of WSF and SBM.

For example, a study conducted by the Consortium for Policy Research in Education (Archibald 2001) illustrates the positive impact a combined WSF/SBM program had on student achievement. The study reports that the district had changed its funding program to WSF where funding followed the student. Although the results indicate that student achievement improved (especially since the high school in the study was previously closed due to poor performance), the results cannot be attributed solely to the use of WSF. There were dramatic changes to the school's entire program, and the addition of basic restructuring techniques—reduced class size, reduced teacher loads, block scheduling, and so forth—may have had more to do with improvements than implementing WSF.

Impact on schools. FIGURE 3 illustrates the change in the level of per-student funding between FTE and WSF for two different schools within Appendix A's hypothetical district.

The two schools represented in FIGURE 3 are elementary schools E1 and E6. If the traditional FTE funding method were used, then both schools receive equal per-student funding. When a WSF funding method is used, the school with the highest-need students receives the highest level of

funding per student. In this scenario, the lowest-need school will see a significant drop in its per-student funding. School E1's per-student funding will drop \$963, from \$6,636 to \$5,673, a 15 percent decrease. The highest-need school, E6, will see its per-student funding increase \$439, from \$6,636 to \$7,075, a 7 percent increase.

The difference in funding between the two hypothetical schools is obvious. The higher-need school is the larger of the two, so increases in funding are spread out because of economies of scale. The impact of funding changes using a WSF system will definitely have a higher impact on smaller schools. (For a demonstration of such positive and/or negative impacts, see TABLE A2 on page 17.)

Some research on decentralization has found that changes in funding can have dramatic impacts (Ouchi et al. 2003). In Seattle, for example, a normal allocation for a student in the year 2001 was \$2,600, while the most needy student (i.e., multiple learning disabilities, low income, English language learner) was allocated as much as \$23,920. The infusion and/or loss of such a large amount of funding can have a dramatic impact on the types of programs and/or staff a school is able to fund. Just two special-needs students of this type would be enough to fund a complete teaching position.

The fact that the larger schools experience the least impact on funding levels indicates that WSF would be easier to implement among larger schools and school districts that benefit from economies of scale. Also, the majority of research that illustrates the positive impacts of WSF focuses on large urban school districts (Archibald 2001, Fermanich et al. 2000, Odden 2000, Miles and Roza 2004). Before assessing WSF's effectiveness as a budgeting tool for an overall statewide program, more research will

be needed. Even the current research demonstrates that positive changes do not occur overnight, but occur over a period longer than four years after WSF is first implemented (Miles and Roza 2004).

One cause of the delayed benefit of WSF is the complexity of the budgets that make up school funding. This complexity comes not only from allocation formulas but from previous expenditure patterns that cannot be easily changed. Thus, implementing a WSF system does not guarantee instant success in achieving equity. The overall consensus of the research indicates that implementing a WSF system requires increased flexibility at the school district and school site levels. Also, there appears to be a consensus that a successful WSF system is enhanced by the degree of SBM allowed within the district.

Other complexities within school spending patterns include the methods used to determine expenses per school. For example, evidence from current research does illustrate that calculating personnel expenditures per school based on an average salary for the district greatly distorts the expenses per school. Many school districts allow experienced teachers to transfer within a district based on seniority. Thus, schools with percentages of higher-need students could have the least experienced teachers while having the lowest personnel payroll. However, such schools would receive the highest amount of funding. Although this problem can be addressed using an SBM system, there are issues regarding the quality of teaching that need to be considered and that a WSF system does not necessarily address.

Impact on school programs. This question is by far the hardest to answer. One difficulty arises from the relationship of WSF to SBM. On its Web site, the Cincinnati Public Schools (2001) provides an illustration of information pertaining to the proposed funding impact on school programs during the 2001–02 school year. Its list comprises 77 schools ranging from 181 students to 1,951 students per school. Out of the 77 schools listed, 32 (42 percent) of them will lose revenues due to the shift toward WSF. The hardest hit schools (as a percentage change) are the smallest, with one school (194 students) losing \$574,646 (30.8 percent of 2001–02 revenues). Losing almost a third of its budget is going to have a dramatic impact on a school's organizational and programmatic function. The potential for this kind of impact is one reason WSF proponents advocate using SBM with WSF and implementing a program slowly over a period of years, with some components—such as teacher compensation—implemented over a ten-year period (Deroche et al. 2004). One study

(Archibald 2001) notes that small, negatively impacted schools received additional funds to offset the negative impact.

Another impact on school programs relates indirectly to the control principals have over their individual budgets. Effectiveness becomes an issue with this variable, and most research concludes that the more decentralized a system is the more efficient the schools become. This level of efficiency translates into more funds reaching classrooms and also lower teacher/student ratios (Ouchi and Segal 2003). The amount of funds per classroom is one of the variables used to measure adequacy. The preliminary research results seem to conclude that shifting resources using WSF does provide an increase in funding that is directed toward specific areas of need, which enhances student achievement.

Questions about WSF

Are there problems? Caution should be applied at this point. Most of the research showing improvement in student performance admits that the results require more time and analysis. Thus, the findings that WSF and SBM improve student performance are preliminary. There is also the question as to whether the amount of funding can be sustained on a long-term basis. The preliminary data do support the contention that funding for special needs should be increased, but the question should be whether the current funding levels in districts will increase over time, whether they will fall prey to political forces trying to drain public education of dollars, or whether current levels are adequate. Again, preliminary data do show some improvement in student performance, with standardized tests used as the benchmark for performance. However, even the research literature raises questions about the veracity of such findings because of the variety in testing procedures, which makes uniform analysis of the findings difficult to achieve.

Would it place additional burdens on staff? The answer to this question is that the evidence is unclear. Any transition will require some smoothing, and the move from a centralized to a decentralized process will require major changes in the method of administering personnel and budgets. Such a shift in responsibility places additional burdens on already overwhelmed professionals. If additional responsibilities are added without adding additional incentives, school personnel may begin to feel overburdened, overused, and underappreciated.

One study (Apodaca-Tucker and Slate 2002) describes the impact of SBM on principals. However, it is focused narrowly on the implementation of SBM and does not address the principals' impressions of the overall program. Also, no mention is made of whether the SBM also included WSF.

Would it create transportation problems if school choice were included? One difficulty in answering this question is that no study has been conducted to address it. Does this make the question moot? The immediate answer is: not at all. School choice within districts is available in many states. Florida, for example, allows parents to send children to other schools within a district if space is available. Different states use different transportation methods. Some transport students using city bus routes. Others require parents to provide transportation. Magnet schools and special education schools are available in many states, and transportation is often provided by the districts.

Implementing a WSF program does not necessarily lead to school choice, and school choice does not necessarily lead to transportation problems. However, if choice is available, then transportation should be addressed. Parents without the means should not be penalized because they want their child to attend school across town.

Would it create incentive to mislabel students? Currently, there is no connection between WSF (or SBM, for that matter) and the increase of special education funding within a school. The potential to seek additional funds through alternative labeling practices is possible. However, without direct statistical evidence or thorough research addressing such a potential connection, the answer remains elusive. There is anecdotal evidence suggesting that the possibility of schools practicing such a tactic exists. Apocryphal stories, however, are not reliable research data and should not be used for policy decisions.

This does not mean that states, districts, and education associations should not be diligent in monitoring such a potentiality. Even though labeling a student as a "special education student" does not carry the stigma it once did—and society's move toward diversity and inclusiveness has provided increased acceptance of special education students—some sort of control should be established to prevent abuse. However, monitoring such activity becomes problematic at the national level and remains an action requiring local effort and monitoring.

Would it increase staff training costs? Current research does not focus on this issue. Just because researchers do not focus on it, though, does not mean that increased cost would not be created by increased need. In

schools with high staff turnover rates, for example, the need for additional and ongoing training is obvious.

The solution, then, to a potential increase in costs is to lower turnover rates. Implementing WSF does not immediately reduce high turnover; the problem is systemic and not related to the type of budget or resource allocation method used. There are other concerns and reforms that need to be implemented in order to reduce high turnover. In fact, a change toward a WSF or SBM system may actually cause more problems for a school that experiences high turnover. Increased training needs, for example, could pull resources away from other categories.

Does it provide adequate funding? Surprisingly, this question is not addressed directly within the research literature. WSF is a budgeting method for reallocating resources that already exist within a district. It is not a system for increasing funding of educational services. The concepts of adequacy and equity are related to one another, but they are not identical. Equity in school funding explains how funding is provided to students at equal levels of need—parity among equals. Adequacy, on the other hand, addresses sufficiency in the level of funding for educational services. Adequacy, then, is the provision of a sufficient level of resources. WSF does not address whether a funding level is sufficient to meet the educational needs of students.

To date, no costing-out study in any state has concluded that the level of resources within a state meets an acceptable standard of adequacy. The budgeting method known as WSF only provides that the current level of funding for educational services follows the student. It does not address the question of need.

However, research should address the questions of efficiency and sufficiency. Does WSF create a resource allocation system where funds are used efficiently? Being able to measure efficiency would provide additional data for measuring adequacy. Some anecdotal evidence does not support the notion that WSF positively impacts student test scores (Archer 2005). Even the Edmonton school district, which has used WSF and SBM since 1980–81, has not seen a dramatic rise in student test scores.

Conclusions

The budget system known as WSF shows promise in helping large urban school districts provide funding equity to schools. It focuses attention on the individual student and not on the "average" student. Thus, resources are allocated to a school based on the student characteristics of the

school's student population. This is a program that should find support within schools that have traditionally struggled with staffing problems due to budgeting systems that view a school district's macro characteristics rather than a school site's micro characteristics.

There are some concerns about WSF that do not seem to be addressed in the current research literature. One major concern involves the level of funding, or adequacy. Adequacy is a different concept than equity. Adequacy addresses whether funding is sufficient to meet educational objectives. Currently, WSF does not address this issue. However, WSF may address the issue of efficiency, and the research suggests a tenuous link between efficiency and adequacy. Within the research literature, this link has not been developed well, and the question of how much money is needed to meet certain educational objectives remains unanswered.

Other concerns center around the issue of capacity. Are there enough resources to provide the level of training necessary for successfully implementing WSF? Will implementation create strain on already overworked professionals? To date, there is no research that addresses these questions. Most of the research focuses on the question of equity, and WSF does produce a more equitable system. Equity questions are sociological—they address quality. The questions above address capacity.

Whether or not WSF creates transportation problems for poor students is a question not directly related to whether or not a district implements a WSF program. Transportation issues relate to the school choice issue. If a district allows school choice, transportation could become an issue. But, most districts that do incorporate a level of choice also provide some system of student transportation. There are districts that do not, of course, but the majority of them do. Transportation is not a nonissue, however; costs charged to a school could become a concern for schools that use WSF.

Weighted student formula will require time to prove effective or ineffective for large urban schools. Preliminary data show that there is some positive impact, but only when WSF is used as part of a larger decentralization program. The use of WSF for small schools or rural schools does not appear beneficial because of the impact on the smaller schools. Further, WSF appears to be a beneficial system for improving the efficiency of resource allocation. No research currently addresses the connection between resources and output (i.e., student achievement). If WSF is to become the method of budgeting funds for large urban schools, then more analysis of its impact on system efficiency and student achievement must take place.

Appendix A
Comparing FTE and WSF
at a Hypothetical District

TABLE A1 Number of Students by Percentage of Weighted Enrollment Per School

	Number of students	Percentage enrolled		
		Disabled	LEP	Low income
Elementary				
E1	100	10	1	1
E2	200	10	20	10
E3	200	10	20	15
E4	200	10	10	15
E5	300	10	50	60
E6	500	10	50	80
E7	500	10	30	80
E8	500	10	30	80
Middle				
M1	300	10	13	7
M2	400	10	15	15
M3	800	10	50	73
M4	1,000	10	30	80
High school				
HS1	700	10	14	12
HS2	1,800	10	39	77
Total students	7,500			

This hypothetical district is created to allow the elementary schools to feed students into the middle schools, which in turn feed students into the high schools. Elementary schools E1 and E2 feed into middle school M1, and so forth. Middle schools M1 and M2 feed into HS1, and M3 and M4 feed into HS2. The demographics of the students within the schools are listed in the other columns for disabled, limited English proficiency, and low income. Each elementary school is given a hypothetical number. Elementary schools E1 and E2 are sited in affluent areas within the district. Elementary schools E3, E4, and E5 are sited in middle- to upper-middle-income areas, and elementary schools E6, E7, and E8 are sited in low-income areas. The purpose of this hypothetical sce-

nario is to illustrate the impact a WSF funding method would have if certain conditions were present.

Base funding for this hypothetical district is set at \$5,000. Weighted funding is based on the scale—

Weighted Funding Scale

Student category	Weight
Disabled	1.30
Limited English proficiency	0.25
Low income	0.20

TABLE A2 Comparing overall Funding from FTE and WSF

	Number of students	Funding (\$)		
		FTE	SWF	Percentage change
Elementary				
E1	100	663,613	567,250	-15
E2	200	1,327,227	1,200,000	-10
E3	200	1,327,227	1,210,000	-9
E4	200	1,327,227	1,185,000	-11
E5	300	1,990,840	2,062,500	+4
E6	500	3,318,067	3,537,500	+7
E7	500	3,318,067	3,412,500	+3
E8	500	3,318,067	3,412,500	+3
Middle				
M1	300	1,990,840	1,764,750	-11
M2	400	2,654,453	2,395,000	-10
M3	800	5,308,907	5,604,000	+6
M4	1,000	6,636,133	6,825,000	+3
High school				
HS1	700	4,645,293	4,161,500	-10
HS2	1,800	11,945,040	12,433,500	+4
Total students	7,500			

As the funding level changes from a traditional FTE method to a WSF method, schools with a higher concentration of students receive more funds.

TABLE A3 Comparing Per-student Funding from FTE and WSF

	Number of students	Funding (\$)	
		FTE	SWF
Elementary			
E1	100	6,636	5,673
E2	200	6,636	6,000
E3	200	6,636	6,050
E4	200	6,636	5,925
E5	300	6,636	6,875
E6	500	6,636	7,075
E7	500	6,636	6,825
E8	500	6,636	6,825
Middle			
M1	300	6,636	5,883
M2	400	6,636	5,988
M3	800	6,636	7,005
M4	1,000	6,636	6,825
High school			
HS1	700	6,636	5,945
HS2	1,800	6,636	6,908
Total students	7,500		

As funding is changed from FTE to WSF, the funding patterns per school also change accordingly. Per-student funding does not appear equalized, but equity is based on need and not on dollars. With WSF, funding for all stu-

dents within a district who are disabled, LEP, or low income receive equal resources. Under FTE, those students do not necessarily receive equal resources.

Appendix B
Comparing WSF among
Urban School Districts

TABLE B1 WSF in 10 North American Cities*

	Edmonton	Baltimore	Chicago	Denver	Los Angeles	Milwaukee	New York	Oakland	Philadelphia	Seattle
Approximate total budget for all funds	\$545 million	\$881 million	\$4.4 billion	\$910 million	\$9.8 billion	\$1 billion	\$12.5 billion	\$600 million	\$1.9 billion	\$453.3 million
Approximate percentage of total budget for weighted-student formula	80	46	52	38.34	88	95	63.1	53	77	56
Approximate percentage of school-level budget applied to decision-making	100	93	100	100	100	70	unknown	20	67.3	100
Number of students (K-12)	81,400	101,338	435,000	67,665	732,974	103,400	1,130,580	54,000	213,842	44,300
Number of schools	205	183	597	134	929	165	1,198	93	284	97
Number of schools decentralized	205	183	567	134	705	165	233-HS 691-E and M	5	264	97

* Modified from data found on the Cross City Campaign for Urban School Reform web site at <http://www.crosscity.org/downloads/10city2001.pdf>, retrieved March 28, 2005.

References

- Apodaca-Tucker, M. T., and J. R. Slate. 2002. "School-Based Management: Views from Public and Private Elementary School Principals." *Education Policy Analysis Archives* 10(23). Retrieved March 24, 2005, from <http://epaa.asu.edu/epaa/v10n23.html>
- Archer, J. 2004. "'Weighted' funding of schools gains favor." *EdWeek.org* November 3. Retrieved March 24, 2005, from <http://www.edweek.org/ew/articles/2004/11/03/10weighted.h24.html>
- Archer, J. 2005. "An Edmonton Journey." *EdWeek.org* January 26. Retrieved March 24, 2005, from <http://www.edweek.org/ew/articles/2005/01/26/20edmonton.h24.html>
- Archibald, S. 2001. *A Case Study of Dramatic Resource Reallocation to Improve Student Achievement: Harrison Place High School*. Madison: University of Wisconsin, Consortium for Policy Research in Education. Retrieved March 24, 2005, from <http://www.wcer.wisc.edu/cpre/papers/pdf/Harrison%20SF%205-01.pdf>
- Cincinnati Public Schools Board of Education. 2001. "School-Based Budgeting per Pupil." Retrieved March 28, 2005 from http://www.cpsboe.k12.oh.us/general/reform/sbbdgtng/PerPupil12_3.pdf
- Cross City Campaign for Urban School Reform. n.d. "Advocacy & Action: School-Based Budgeting." Retrieved March 24, 2005, from http://www.crosscity.org/advocacy_action/advocacy_budget_weight.html
- Deroche, T. R., B. S. Cooper, W. G. Ouchi and L. Segal 2004. "When Dollars Follow Students: The Political Viability, Equity, and Workability of Weighted Funding Formulas." *The School Administrator Web Edition* August. Retrieved March 28, 2005, from http://www.aasa.org/publications/sa/2004_08/deroche.htm
- EdSource. 2004 "Weighted Student Formula' Concept Enlivens School Finance Debate." *EdSource Issue Brief* May. Retrieved March 24, 2005, from <http://www.edsource.org/pdf/WeightedStuForm04.pdf>
- Fermanich, M., A. Odden, and S. Archibald. 2000. *A Case Study of District Decentralization and Site-based Budgeting: Cordel Place School District*. Madison: University of Wisconsin, Wisconsin Center for Education Research, Consortium for Policy Research in Education.

- Griggs, F. 1999. "School money now to follow the student." *The Cincinnati Post* January 7. Retrieved March 24, 2005, from <http://www.cincypost.com/news/1999/skl-bud010799.html>
- Hawai'i Educational Policy Center. 2003. *Adoption of a Student Weighted Formula for Funding Hawai'i's Public Schools: Policy Issues*. Honolulu: Author. Retrieved March 24, 2005, from <http://www.hawaii.edu/hepc/pdf/Reports/StudentWeightedFormula.pdf>
- Miles, K. H., and M. Roza. 2004. *Understanding Student based Budgeting as a Means to Greater School Resource Equity*. Seattle: University of Washington, Center on Reinventing Public Education. Retrieved March 24, 2005, from http://www.crpe.org/workingpapers/pdf/SBB_MilesRoza.pdf
- Miles, K. H., K. Ware, and M. Roza. 2003. "Leveling the Playing Field: Creating Funding Equity through Student-Based Budgeting." *Phi Delta Kappan* 85(2): 114–119. Retrieved March 24, 2005, from <http://www.pdkintl.org/kappan/k0310mil.htm>
- National Association of State Boards of Education. 2003. "School-Based Financing." *Policy Update* 11(7). Retrieved March 28, 2005, from http://www.nasbe.org/Educational_Issues/Policy_Updates/11_7.html
- National Commission on Excellence in Education. 1983. *A Nation at Risk: The Imperative for Educational Reform*. Washington, DC: U.S. Government Printing Office.
- Odden, A. 2000. "The New School Finance: Providing dequacy and Improving Equity." *Journal of Education Finance* 25(Spring): 467–488.
- Ouchi, W. G. 2004. *The Implementation of a Decentralized Organization Design in Three Large Public School Districts: Edmonton, Seattle, and Houston*. Los Angeles: University of California, Anderson School of Management. Retrieved March 24, 2005, from <http://www.anderson.ucla.edu/documents/areas/fac/hr/ob/Decentralized.pdf>
- Ouchi, W. G., and L. G. Segal. 2003. *Making Schools Work: A Revolutionary Plan to Get Your Children the Education They Need*. New York: Simon & Shuster.
- Ouchi W. G., B. S. Cooper, and L. G. Segal. 2002. *The Organization of Primary and Secondary Schools*. Los Angeles: University of California, Anderson School of Management. Retrieved March 24, 2005, from http://www.williamouchi.com/docs/lessons_for_california.pdf
- Ouchi, W. G., B. S. Cooper, L. G. Segal, T. DeRoche, C. Brown, and E. Galvin. 2003. *Organizational Configuration and Performance: The Case of Primary and Secondary School Systems*. Los Angeles: University of California, Anderson School of Management. Retrieved March 24, 2005, from http://www.williamouchi.com/docs/primary_secondary.pdf
- Roza, M., and K. H. Miles. 2002. *Assessing Inequities in School Funding within Districts: A Tool to Prepare for Student-Based Budgeting*. Providence: Annenberg Institute for School Reform at Brown University. Retrieved March 24, 2005, from http://schoolcommunities.org/images/SBB_Tool.pdf
- Roza, M., and K. H. Miles. 2002. *Moving toward Equity in School Funding within Districts*. Providence: Annenberg Institute for School Reform at Brown University. Retrieved March 24, 2005, from <http://schoolcommunities.org/images/Presentation.pdf>
- Shapiro, T. 2005. "School board tries to put a value on each student." Honolulu Advertiser.com January 14. Retrieved March 24, 2005, from <http://the.honoluluadvertiser.com/article/2005/Jan/14/ln/ln15p.html>
- Stiefel, L., A. E. Schwartz, and R. H. Rubenstein. 1999. "Measuring School Efficiency Using School-level Data: Theory and Practice." In M. E. Goertz and A. Odden, eds., *School-Based Financing*. Thousand Oaks, CA: Corwin Press.
- Ucelli, M., E. Foley, T. Emdon, and C. Bond. 2002. *First Steps to a Level Playing Field: An Introduction to Student-based Budgeting*. Providence: Annenberg Institute for School Reform at Brown University. Retrieved March 24, 2005, from <http://schoolcommunities.org/images/SBB.pdf>



*Great Public Schools
for Every Child*

Research
1201 16th St., N.W. | Washington, DC 20036-3290
202-822-7400