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ABSTRACT

This document presents the first results of a series of studies on within-district spending patterns. It provides an overview of some early analysis of variations in spending among schools within three unnamed school districts. The study was conducted with the hope of motivating district leaders and school activists to investigate their own spending patterns, make spending more equitable, and focus money more effectively on instructional improvement. The results of the study are presented in succinct briefing-chart form, which includes graphs and charts. Notes are included in the margins. The document concludes with the following recommendations: (1) Districts should monitor variations in funding levels among schools in their districts; (2) districts should commit to a student-based budget that allocates resources based on students, not schools; (3) moving more resources to the school budgets will eliminate unknown inequities; (4) districts can use funding decisions as part of their district strategy, directing resources consistently across the district; and (5) districts should uncover variations in teacher quality throughout the district and investigate new policies for compensating teachers and budgeting their salaries so as to have a more equitable distribution of teacher talent. (WFA)

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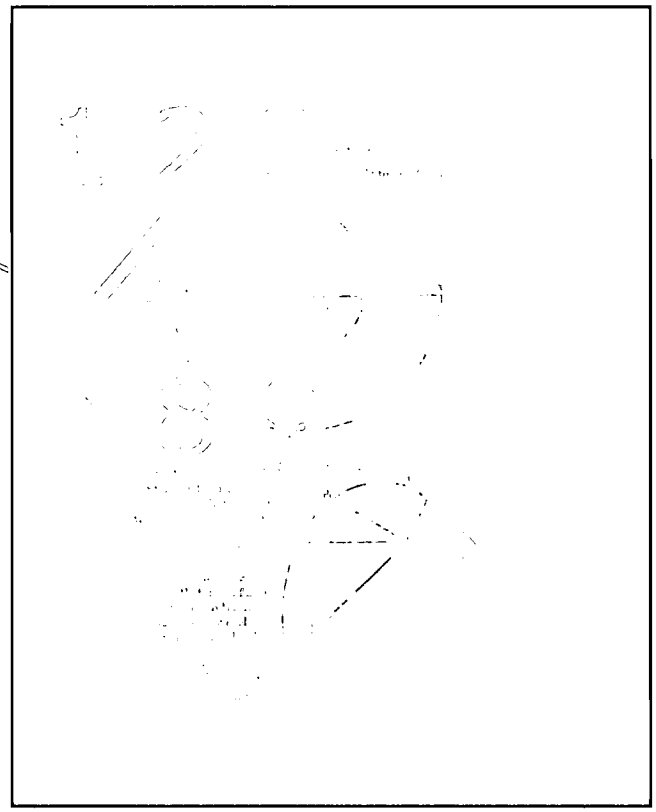
A Presentation on the Resource Variations Within Districts.

Marguerite Roza
Karen Hawley Miles

May 2002



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Since the late 1960s, school finance equity has been a major focus of research and legal action. Researchers have developed data showing the disparity of spending among the school districts of a given state. Districts with weak economic bases cannot raise as much revenue as districts with valuable real estate and thriving businesses. The tax bases of central cities are also heavily burdened by infrastructure needs and demands for spending on public health, safety, and sanitation. Low-revenue and high-cost districts – usually those in poor rural areas and big city districts – simply cannot spend as much on education as districts in wealthy suburbs or prosperous towns.

Unfortunately, the districts able to spend the least are often those that serve the poorest and most disadvantaged children. Lawyers have argued that these spending discrepancies violate state constitutional provisions guaranteeing all children equal access to quality education. On these grounds, courts have ordered many states to assume some responsibility for funding K-12 education, and to send disproportionate amounts of state money to school districts that are least able to support schools from their own tax revenues.

Researchers and lawyers thought that equalizing spending between rich and poor districts would ensure that poor children would benefit from as much public spending as rich children. However, they did not take account of the fact that school districts – even those that receive large amounts of state "equalization" funds – can create their own inequitable spending patterns.

Within-district spending inequalities have passed under the radar screens of researchers and litigators whose attentions are fixed on between-district spending inequalities. As this study shows, however, school districts – particularly the large ones that serve tens of thousands of students and spend hundreds of millions of dollars on education – can spend highly unequal amounts of money on different students. More often than not, those inequalities work to the disadvantage of schools serving the lowest-income and most heavily-minority students.

This paper presents the first results of a new series of studies on within-district spending patterns. It provides an overview of some early analysis of variations in spending among schools within three districts. What we have found has been an eye-opener, especially for those involved in the leadership of these districts. Major spending inequities exist, even in places where superintendents and school boards had intended to follow equitable policies.

We present our methods and preliminary results in succinct briefing-chart form, in hopes that citizens and policymakers, as well as researchers, will be able to read and understand them. We hope these results will cause district leaders and school activists in other localities to investigate their own spending patterns, make spending more equitable, and to focus money more effectively on improvement of instruction, especially in their most challenged schools.

Notes

- Can we assume that these dollars get distributed fairly and equitably across all schools in these districts? This analysis will show that we cannot.

Why study inequities within districts?

- To date, resource equity research has focused primarily on inequities across districts or states. This analysis looks within districts at how resources are distributed among schools.

- Many urban districts have enormous budgets ($4 billion in LA, over $2 billion in Dade County). The allocation of these resources has real implications for some of the nation's poorest performing students (since the vast majority reside in certain sectors of these urban districts).

Goals of Analysis

- To describe why inequity exists among schools within districts.
- To locate and quantify the inequities in a few districts.
- To provide examples of how district leaders might investigate inequities within their districts.
- To introduce mechanisms by which districts can allocate resources more equitably.

Notes

- In each district, the data are from the 1998-1999 or 1999-2000 school year and do not reflect recent budgeting policies implemented since then. They are, however, representative of many urban districts, whose budgeting practices mirror those used in these districts during those years.

DISTRICTS ANALYZED

- **Two mid-sized urban districts (Districts A and B)**
  - Each has under 100 schools
  - Each has substantial variations in wealth and performance within the district
- **One large urban district (District C)**
  - Over 250 schools
  - High poverty and ESL populations
  - An 8-year commitment to creating equity among schools

How Districts Allocate Resources to Schools

- Most districts use staffing based formulas which allocate resources in the form of staff FTE to each school. Additional staff or programs are added on a school-by-school basis.

- Typically, the assignment of teachers is driven almost exclusively by seniority rules and teacher preferences. Districts use a district-wide average salary to compute the cost of each school's staff.

- Central offices deliver additional resources in the form of services or centrally funded special programs (such as special education or bilingual programs).

Notes

- The first four sources of resource variation are generally accounted for in each school's individual budget.
- School budgets reflect only a district-wide average salary figure for teacher costs, so variations due to salaries do not appear in each school's budget.
- Physical plant variations appear in either the central office or school budgets, depending on how they are allocated.
- Districts maintain almost no accounting of how variations in central office budgets impact individual schools.

Why Do Some Schools Get More Than Others?

1. School size: Some staff positions (such as principals, librarians, etc.) are allocated regardless of enrollment. As a result, in larger schools these costs are distributed over more students resulting in lower per pupil expenditures.
2. Special needs students: Additional resources are provided for bilingual or special education, etc.
3. Strategic investments at certain levels: Includes funds for strategic initiatives such as class size reduction in the primary grades.
4. Magnet or other special programs: Many of these programs have historical precedent and target only a few schools.
5. Uneven salaries among schools: Schools with experienced staff (and thus higher salaries) spend more than those with predominantly newer teachers.
6. Physical plant differences: Some schools cost more to maintain than others.
7. Central Office controlled resources: 40-70% of districts' general fund resources are utilized by the central office and do not appear in school budgets. Many of these central office departments deliver services/resources to schools (through professional development, services for special needs students, etc.).

Notes

This analysis investigates:

I. Horizontal equity in school budgets in Districts A and C

II. Vertical equity in school budgets in Districts A and C

III. Horizontal equity in school salaries in Districts A and B

- Inequities in how central office dollars are utilized were not analyzed here.

12

What is Equity?

- **Horizontal Equity** – To what extent do students with similar characteristics receive equal resources?

- **Vertical Equity** – To what extent do students with dissimilar characteristics receive appropriately dissimilar resources? (Vertical equity assumes that high needs students get an appropriately higher level of resources).

Measuring Equity

- **Calculate a weighted index for each school's comparative level of funding**
  - Weighted index = Ratio of the school's per pupil expenditures to the weighted district average for the school's student population*

  *The denominator includes weighted averages for special needs students

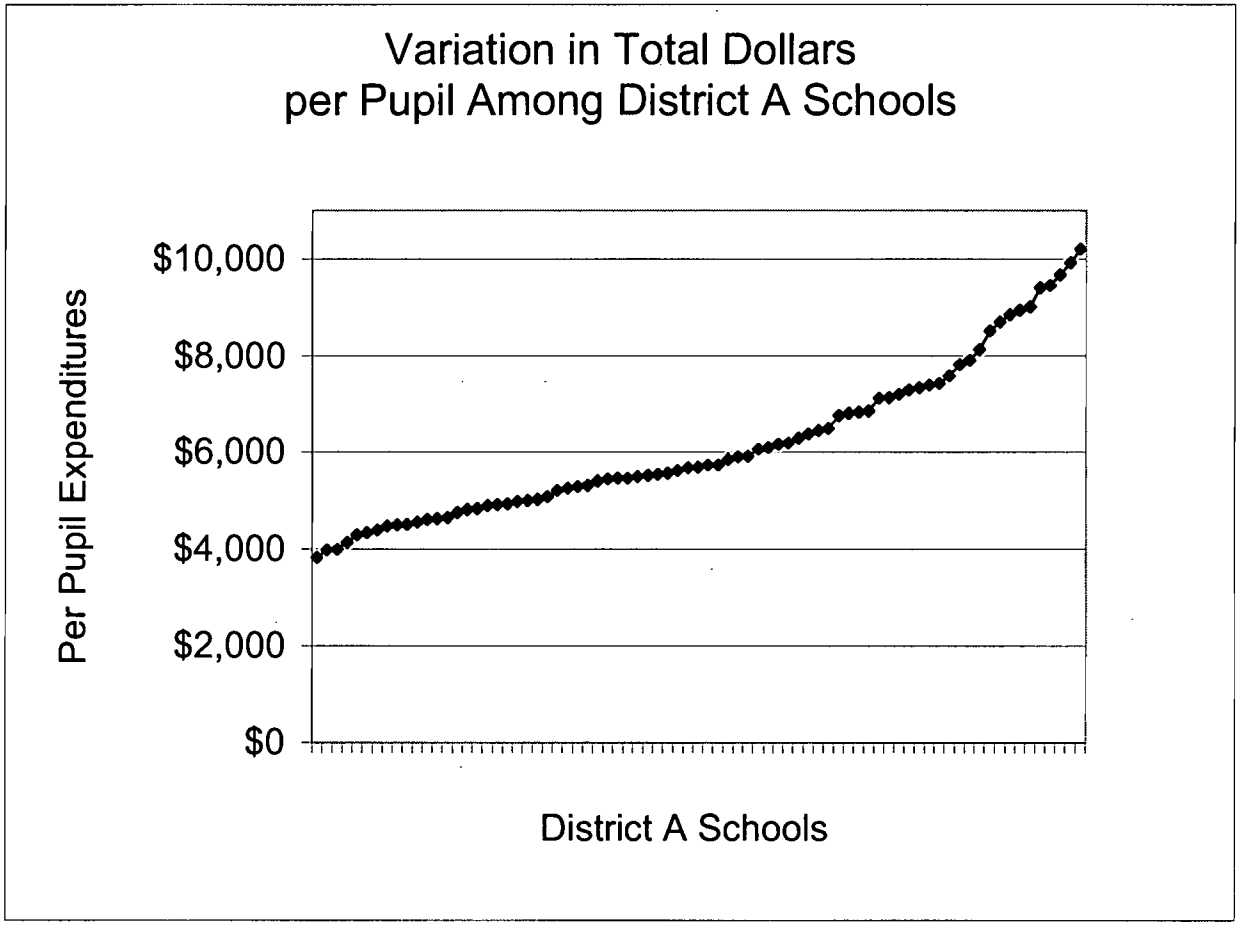
- **Look for variation**
  - Minimum, maximum, range
  - Percent and number above 110% 105%, below 90%, 95%
  - Coefficient of variation

- **How many are affected?**
  - Districts need to know how many schools are shortchanged or benefit from the unequal budgeting practices
  - Percent and number of schools that lose out (e.g., below 90%)

Notes

- The distribution of per pupil expenditures for each District A school reveals an enormous variation in school funding levels.
- Some schools are funded at less than $4,000 per pupil, wheras others receive more than $10,000 per pupil.

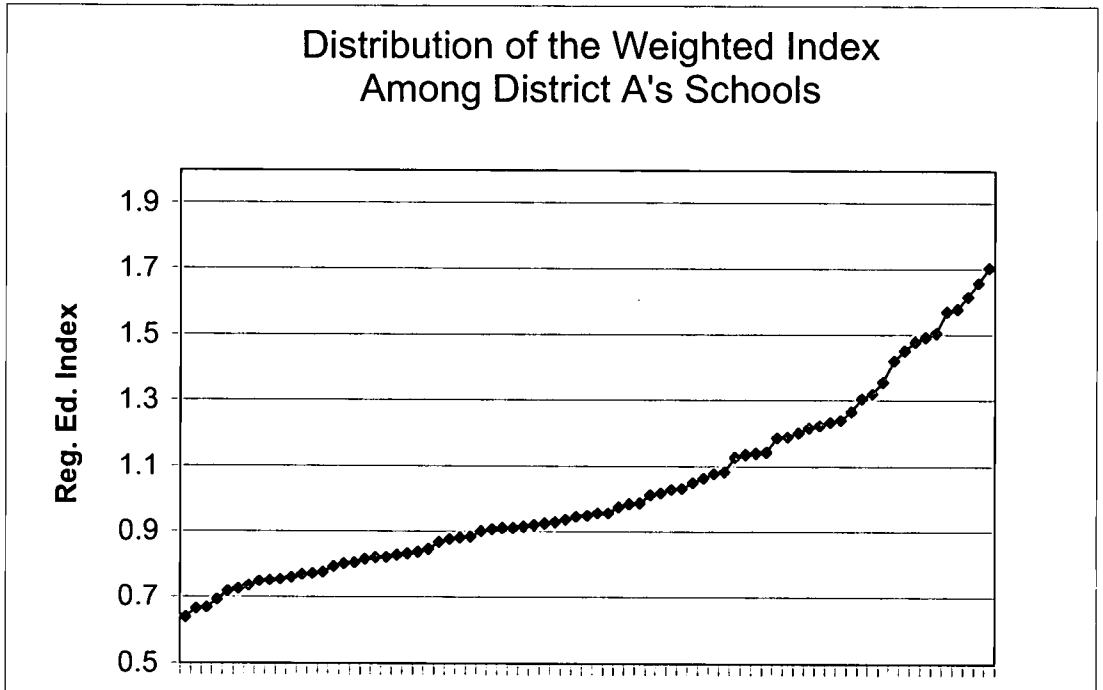
I. Horizontal Equity in School Budgets



Notes

- The distribution of the weighted index shows the similar variation as per pupil expenditures (previous slide) but allows us to compare across districts.
- The maximum index (1.70) shows that the most highly funded school receives 70% more than the district average (the average index is 1.0).
- A coefficient of variation over 0.1 is generally considered inequitable. District A's coefficient (0.26) shows unacceptable variation.
- The percentages indicate that a third of the district's schools receive funds in excess of 110% of the average, and a third are shortchanged by over 10%.

Horizontal Equity in School Budgets: Application of Equity Measure in District A

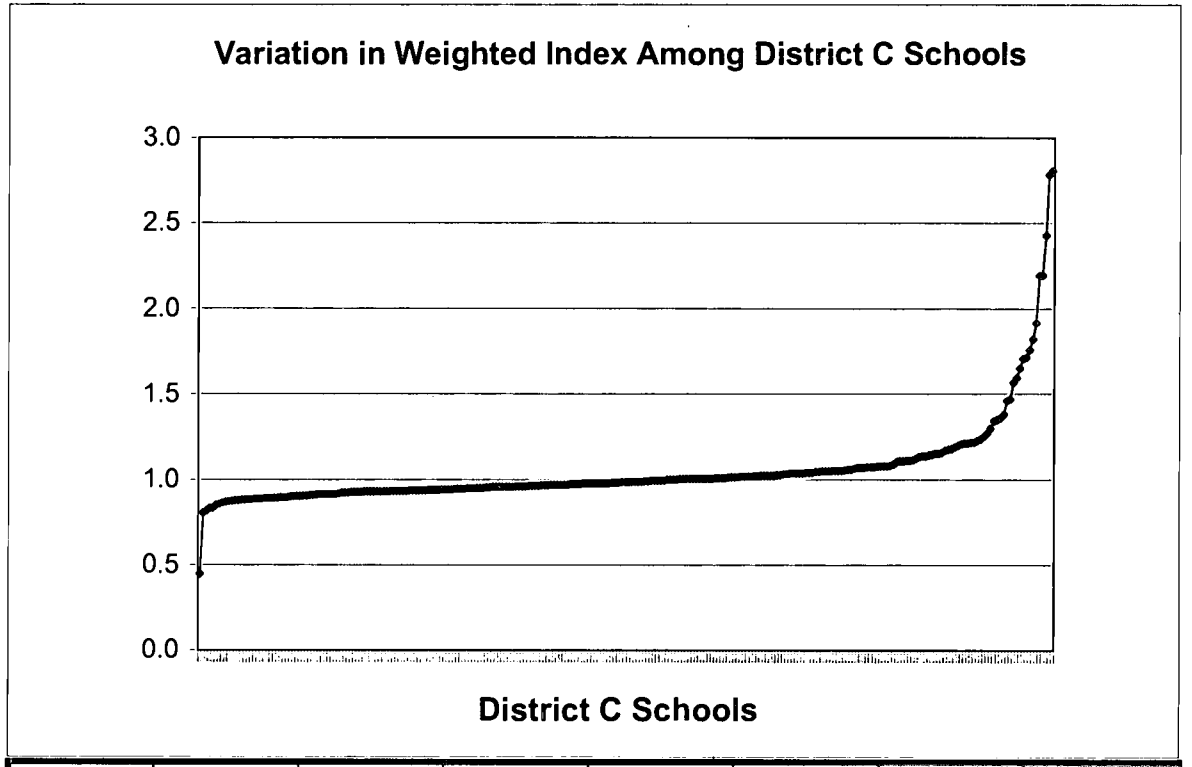


	Max	Min	Coefficient of Variation	Schools over 110%	Percent receiving over 110%	Schools under 90%	Percent receiving under 90%
Weighted Index	1.7	0.63	0.26	25	32%	27	35%

Notes

- District C's distribution shows much greater extremes (with a maximum index of 2.91 and a minimum of 0.46) but many more schools near the average.
- As a result, the coefficient of variation is much less at 0.11.
- While 22% of the schools still receive resources over the 110% level, only 6% are severely disadvantaged by the policies (with funding under 90% level).

Horizontal Equity in School Budgets: Comparison of Equity Measures in District C

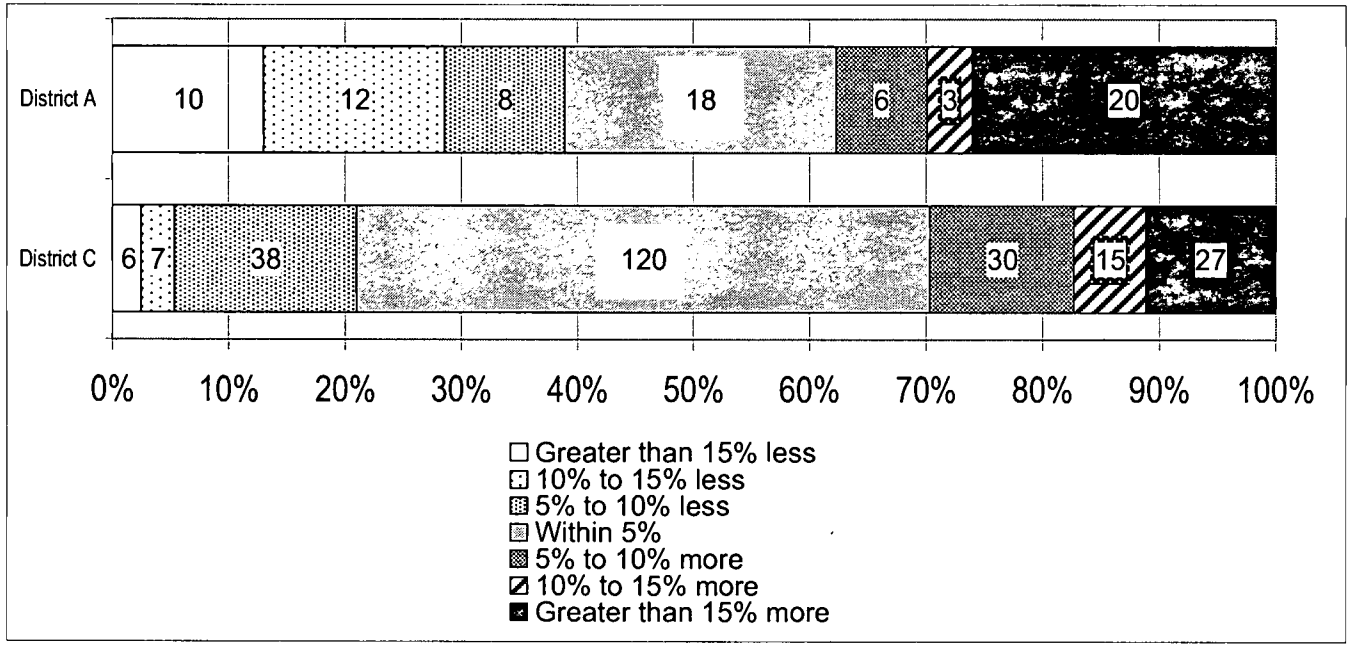


	Max	Min	Coefficient of Variation	Schools over 110%	Percent receiving over 110%	Schools under 90%	Percent receiving under 90%
Weighted Index	2.91	0.46	0.11	57	22%	16	6%

Notes

- Equity disparities impact the majority of the schools in District A (either positively, or negatively).
- In District C, larger percentages of schools receive near the average.

A Comparison of How Many Schools are Affected in Each District



Notes

- Inequities can be hidden in specific kinds of schools, among certain populations or in certain sectors of the district.
- Each district will have a different equity profile and can use the following chart to map out the inequities.

Where are the Inequities?

	Average Index	Coefficient of Variation	# and % of schools over 110%	# and % of schools under 90%
Special Student Populations Special Ed., Bilingual, Poverty, Race, Voc. Ed., Gifted				
School Size Small, Medium, Large				
School Level, Type Elementary, Middle, K-8, High, Alternative or Magnet				
Region North, South, etc. near district borders, suburban, urban, etc.				

Notes

- The coefficient of variation tells us how evenly funding for special programs is distributed.
- In District C, there was a lot of variation in funding levels among alternative and middle schools (with coefficients of 0.39 and 0.17 respectively). In other words, some middle schools got much more money than others. There was also a lot of variation among special education students (1.40), and among vocational education students (0.31).
- The coefficient of variation shows much more consistency in funding for elementary (0.09) and high schools (0.07).
- Further analysis showed that District C had substantial variations among its low poverty schools, indicating that while some wealthier schools got much more than their share, the pattern did not extend to all wealthier schools.
- In District A, the variations were in very different places. Most notable was the large variation in funding levels among high schools. Some high schools were funded at very high levels, and others were not.

Horizontal Equity for Special Populations in District C

Do students in special populations receive equal resources throughout the district?

	Coefficient of Variation
Elementary Schools	0.09
Middle Schools	0.17
High Schools	0.07
Alternative/Magnet Schools	0.39
Regular Education	0.11
Special Education	1.40
Vocational Education	0.31
Bilingual Education	0.03

Notes

- We found that districts had different funding levels for subgroups even if they were not intentional.

II. Vertical Equity in School Budgets

- **Vertical Equity** – Do students with dissimilar characteristics receive appropriately dissimilar resources? (i.e. are more resources devoted to high needs students?)

Notes

- The regular program index shows how much money was spent in these schools for the regular education program (which excludes funding for special education, bilingual education, etc.)
- District C spent fewer regular education dollars on students in high poverty schools with complex student populations (1.04 versus 1.16 for low poverty schools).
- Middle schools received a larger share of the funds (1.15), as did alternative schools (1.80).

Vertical Equity in District C

Regular Program and Weighted Total Index for District C

	Average Regular Program Index	Average Weighted Index
Small Schools	1.11	1.12
Large Schools	0.98	0.99
Elementary Schools	1.01	1.02
Middle Schools	1.15	1.15
High Schools	0.89	0.89
Alternative Schools	1.87	1.80
Highest Poverty Quartile	1.04	1.04
Lowest Poverty Quartile	1.16	1.16
Large Bilingual Population	1.01	1.02
Small Bilingual Population	1.20	1.20
Large Special Ed. Population	1.06	1.10
Small Special Ed. Population	1.17	1.15

Notes

- In District A, elementary schools received fewer regular education resources than others (0.86), as did larger schools (0.88).
- While high poverty schools received fewer regular education resources (0.9), their overall funding (as indicated by a weighted index of 1.00) was equalized.
- This tells us that while districts do add on more funds for these special populations, they have not leveled funding for the basic education program.

VERTICAL EQUITY IN DISTRICT A

Regular Program and Weighted Total Index for District A

	Average Regular Program Index	Average Weighted Index
Small Schools	0.95	1.07
Large Schools	0.88	0.90
Magnet Schools	1.13	1.17
Elementary	0.86	0.99
Middle	1.44	1.30
K-8	1.04	1.05
High Schools	1.29	0.99
Less than 50% Poverty	1.06	1.00
Greater than 75% Poverty	0.90	1.00

Notes

- In both districts, resource distributions evolved based on history and not on district strategy. Many variations followed no clear plan. In both districts, a regression showed that a third of the variation was unexplained by any recognizable district variable.

Conclusions Regarding Equity in School Budgets

- Districts have different inequities. Each district may have inequities buried in a variety of places and to differing degrees.
- Districts often direct special funds to selected student populations (Spec. Ed, Bilingual Ed, etc.), but don't realize that these children receive less than their share of regular education dollars.
- Districts can use the vertical equity concept to help address the needs of certain groups of kids or to target a reform effort, but only after base funding has been equalized.

III. The Equity Impact of Salary Averaging

- Most districts use a fixed average salary figure to compute the staffing costs in each school, despite the fact that real salaries vary substantially from school to school.

- The effect of this policy is that schools with less experienced and lower paid teachers spend fewer real resources than their budgets would indicate.

Notes

- On average, each school gains or loses 5-6% of their budget due to salary averaging practices.
- In District A, one school lost nearly $1,000,000 from this policy.

To What Extent Do Real Salary Costs Vary?

Variation in Teacher Salary Costs Among Schools

	District A	District B
Average percentage of impact among schools	5.9%	4.9%
Average variation among schools		
Per pupil	(+/-) $189	(+/-) $144
Per school	(+/-) $106,974	(+/-) $72,576
Maximum Benefit		
Greatest per school benefit from salary averaging	$522,495	$238,539
As a percent of average school teacher costs	15.6%	11.0%
Per pupil dollars	$497	$322
Maximum Loss		
Greatest per school loss from salary averaging	-$959,730	-$263,622
Percent of average school teacher costs	-19.2%	-21.8%
Per pupil dollars	-$613	-$637

Notes

- The weighted salary index tells us how salaries compare to the district averages. Indexes over 1.0 show higher than average salaries.
- High poverty, low performing schools in both districts lose out as higher paid teachers flock to more desirable schools.

Who Benefits, Who Loses from Salary Averaging?

Weighted Salary Index		
Type of School	**District A**	**District B**
Elementary	0.99	1.00
Middle		0.96
High Schools	1.06	0.94
High poverty	0.96	0.97
Low poverty	1.07	1.02
High Performing/Achievement	1.02	1.03
Low Performing/Redesign	0.94	0.95

Conclusions Regarding Salary Averaging

- Variations in teacher salary are real and consistently impact poor and low performing schools.
- The nearly universal practice of averaging salaries masks the inequities in teacher quality that hurt the worst schools.

27

RECOMMENDATIONS

- Districts should monitor variations in funding levels among schools in their districts.
- Districts should commit to a student based budget that allocates resources based on students and not schools.
- Moving more resources to the school budgets will eliminate unknown inequities.
- Districts can use funding decisions as part of their district strategy, directing resources consistently across the district (such as a primary grades initiative, etc.).
- Districts should uncover variations in teacher quality throughout the district and investigate new policies for compensating teachers and budgeting their salaries, so as to have a more equitable distribution of teacher talent.

The Center on Reinventing Public Education at the Daniel J. Evans School of Public Affairs at the University of Washington engages in research and analysis aimed at developing focused, effective, and accountable schools and the systems that support them. The Center, established in 1993, seeks to inform community leaders, policymakers, school and schools system leaders, and the research communities.

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