# Moving toward Equity in School Funding within Districts

School Communities that Work: A National Task Force on the Future of Urban Districts



An Initiative of the Annenberg Institute for School Reform at Brown University

# School Communities that Work: A National Task Force on the Future of Urban Districts

was established in 2000 by the Annenberg Institute for School Reform at Brown University to examine an element of the public education system that has often been overlooked: the urban school district. Its primary goals are to help create, support, and sustain entire urban communities of high-achieving schools and to stimulate a national conversation to promote the development and implementation of school communities that do, in fact, work for all children.

To help imagine what high-achieving school communities would look like and how to create them, the Task Force convened influential leaders from the education, civic, business, and nonprofit communities to study three critical areas: building capacity for teaching and learning; developing family and community supports; and organizing, managing, and governing schools and systems.

The following Task Force members guided the development of this article.

# Task Force Design Group on Organizing, Managing, and Governing Schools and Systems

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The Task Force would like to thank the Cincinnati Public Schools, the Houston Independent School District, and the Seattle Public Schools for their cooperation in preparing this presentation.

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Task Force leaders and funders are listed on the inside back cover. For more information on the School Communities that Work Task Force, visit our Web site at www.schoolcommunities.org eform efforts of the past three decades involving school finance have focused on the state's role in equalizing expenditures across all districts within a state. Researchers have used district-level expenditures to show disparities among districts; lawyers have argued in court that these disparities violate state constitutional guarantees of equal access to quality education for all children.

The result of these reform efforts has been to force states to rethink policies that distribute tax dollars across locales; and, in many cases, states have assumed a greater role in funding basic education. Federal and state governments have also instituted new reporting codes, requiring districts to classify expenditures by function and object. Researchers now have much better information on what kinds of items are purchased with education dollars (e.g., teachers, benefits, librarians, utilities, texts, lunch programs). Policy-makers had hoped that this additional information would help researchers understand the relationship between purchased goods and student achievement.

Despite these efforts to equalize distributions across districts, little attention has been given to differing expenditures among schools *within* districts. Even with more current methods of cost accounting, districts do not have accurate information on costs separated out by schools or categories of students.

As part of the work on alternative school-funding mechanisms undertaken by the SCHOOL COMMU-NITIES THAT WORK task force, we analyzed differences in spending across schools and students within three urban districts – Cincinnati, Seattle, and Houston. We also explored the impact of a nearly universal budgeting policy among school districts – basing per school allocations on average teacher salaries.

What we found was an eye-opener, primarily because major inequities were lurking in places where many district leaders had not expected them. Our analysis demonstrated that traditional "staffbased" budgeting practices had created substantial inequities among schools in each district.

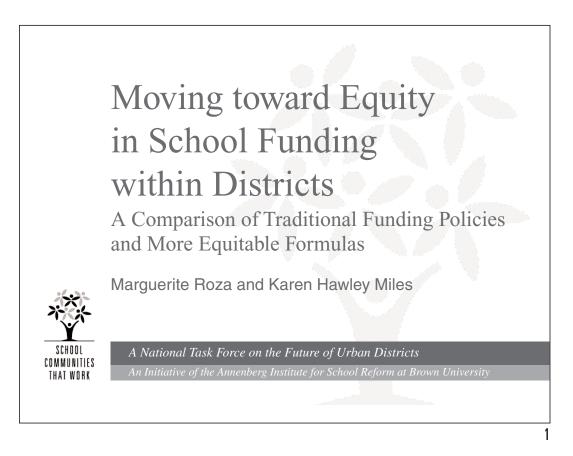
All three of the districts we chose had recently adopted student-based-budgeting policies, enabling us to examine financial data after the new budgeting policies were implemented and to explore the changes that this strategy brought about. Studentbased budgeting has many advantages. One of the most important is its potential as a tool for improving equity among schools and categories of students. Student-based budgeting also provides a foundation for serious conversations about where district dollars are spent and the reasons for these spending patterns, allowing district leaders to be more strategic in their investments and to measure progress against those investments.

We present our methods and results in briefingchart form, also available as a PowerPoint presentation on the Web.<sup>1</sup> Our intention is to provide policy-makers, researchers, and interested citizens with a succinct overview of these complex budgeting issues and with a practical way to share the evidence we gathered from districts that have implemented student-based budgeting. By offering our analysis template, we hope to inspire other districts to investigate their own spending patterns and inequities and to increase their efforts to focus money more strategically and equitably toward improved achievement for all students.

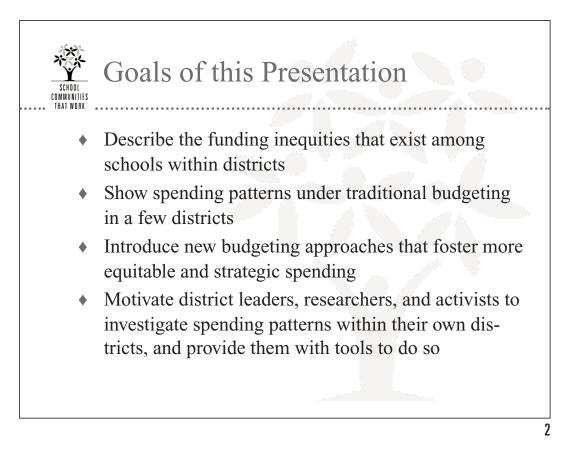
### Marguerite Roza and Karen Hawley Miles

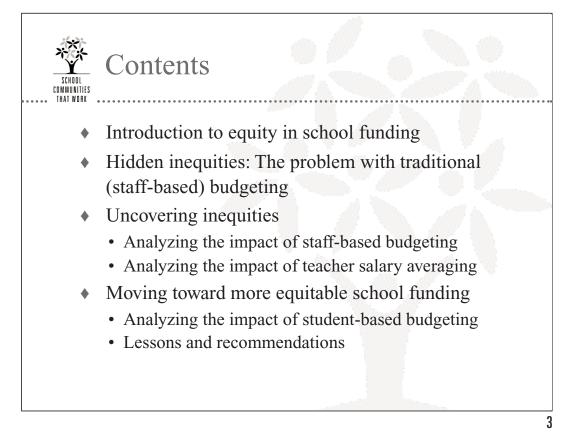
The authors wish to acknowledge the Annie E. Casey Foundation for support of the initial data analysis and to thank the many budget personnel from Cincinnati, Houston, and Seattle who made their district's fiscal data readily available and who patiently explained its historical intricacies.

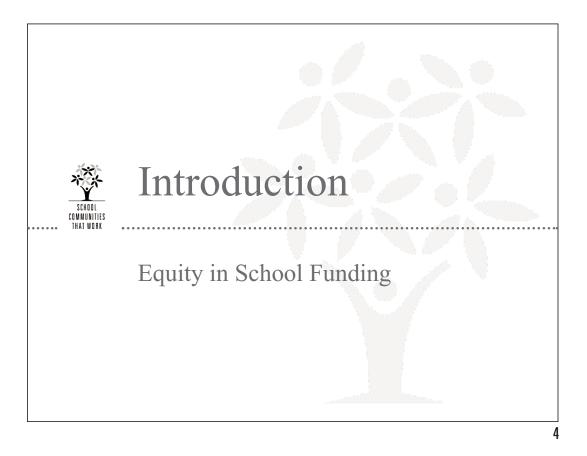
<sup>&</sup>lt;sup>1</sup> A PowerPoint presentation of "Moving toward Equity in School Funding within Districts" is available at *<www.schoolcommunities.org/ resources.html>*. The presentation may be updated from time to time after its initial posting in September 2002.



NOTE A PowerPoint version of the material in this booklet is available at the School Communities that Work Web site, <www.schoolcommunities.org/resources.html>. Information in the slides and notes on the Web may from time to time be updated from this printed version.







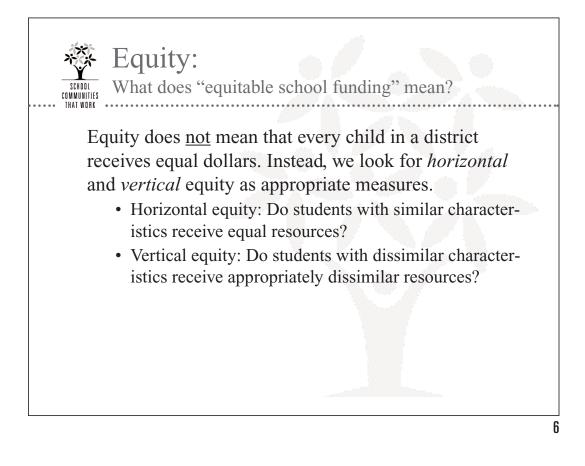


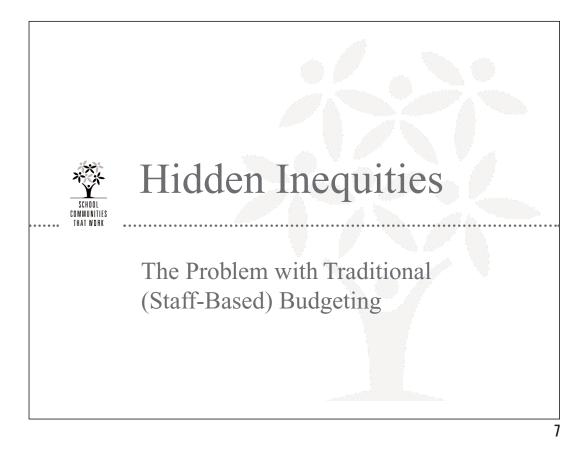
Equity: What does our research show about district spending patterns?

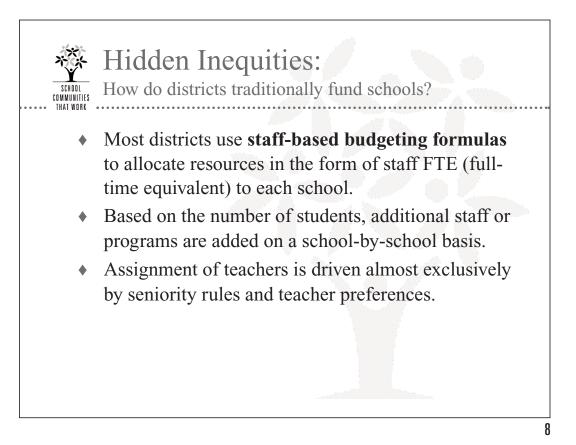
- Research to date has focused on inequities across districts or states. Here we analyze spending inequities within districts.
- We analyze the differences in district spending patterns under traditional budgeting policies and under newer approaches.
- We show the impact of these differing spending patterns on different schools and categories of students.
- We show that a district's choice of budgeting policies has a major impact on how dollars are invested and on the district's long-term fiscal strategy.

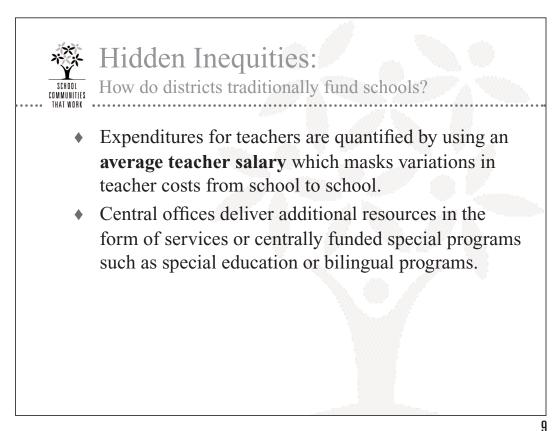
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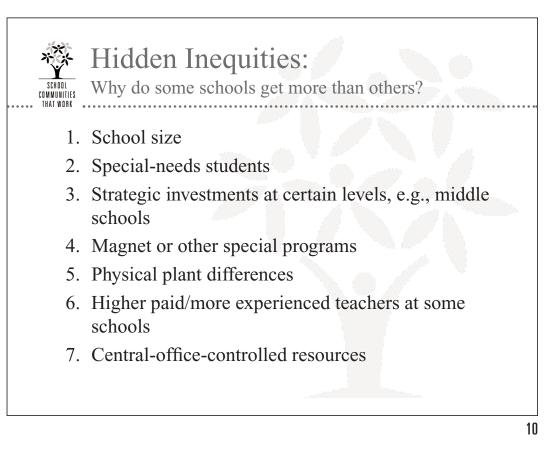
NOTE Our analysis of the school-funding patterns in three districts shows that we cannot assume that dollars get distributed fairly and equitably across all schools in a district. Schools serving the lowest-income communities and those with the largest numbers of minority students are usually the most affected.









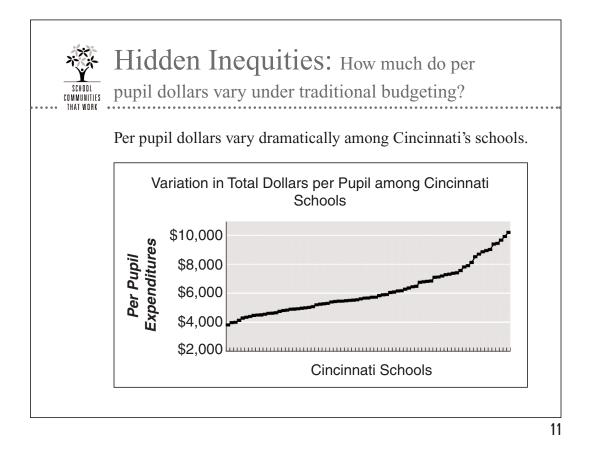


# NOTE

- 1. Some staff positions (principals, librarians, etc.) are allocated regardless of enrollment; at larger schools these costs are distributed over more students, resulting in lower per pupil expenditures.
- 2. Additional resources are provided for bilingual education, special education, etc.
- 3. Includes funds for strategic initiatives such as class-size reduction in the primary grades.
- 4. Many of these programs have historical roots and target only a few schools.
- These four sources of variation are generally included in individual schools' budgets.
- 5. Some schools cost more to maintain than others; physical plant costs can appear either in the central-office or school budgets.

Most districts maintain almost no accounting of how other variations in central-office budgets impact individual schools. Inequities in how central office dollars are used were not analyzed here.

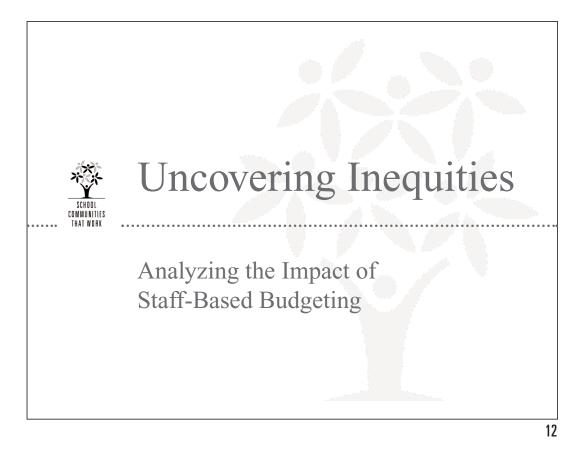
- 6. Schools with experienced staff (and thus higher salaries) use up more district funds than those with predominantly newer teachers. Since school budgets reflect only districtwide average salaries, they do not show these variations.
- 7. Between 40 and 60 percent of districts' general funds do not appear in school budgets; they are used by the central office to deliver services or resources to schools for professional development, special-needs students, etc.



NOTE The graph shows enormous variation in raw dollars per pupil. Some schools were funded at less than \$4,000 per pupil, whereas others received more than \$10,000 per pupil.

What this graph does not show is how the schools at one end differed from those at the other end. How do we know how equitable or inequitable this distribution of funds is?

School Communities that Work designed the formulas and analytical methods described in this presentation to answer these kinds of questions.





# Uncovering Inequities:

How is equity analyzed?

This three-step analytical method shows the magnitude and location of funding inequities among schools in a district.

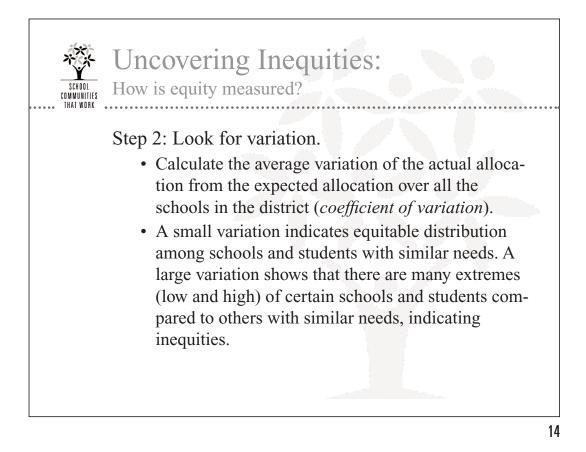
Step 1: Compare funding levels across schools with different student populations.

- Calculate what each school would expect to receive if it were allocated the district averages for its mix of students (*weighted average expenditure*).
- Compare the actual allocations the school receives with this expected allocation (*weighted index*).

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NOTE We would expect a high-poverty school with many bilingual education students to receive more resources than a low-poverty school with no bilingual students. But, we need a measure that takes into account different funding levels for the actual students in a given school. We developed a weighted index for this purpose (see slide 16).

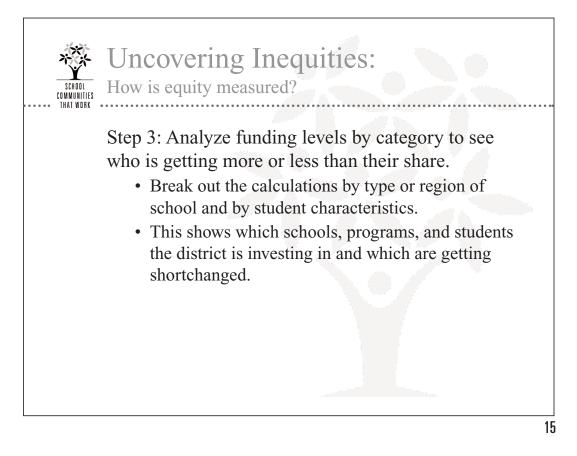
The three-step analytical method described in slides 13–15 was developed by School Communities that Work. Terms used are defined in slide 16. For more detail on this process, see *Assessing Inequities in School Funding within Districts: A Tool to Prepare for Student-Based Budgeting* (Annenberg Institute 2002).



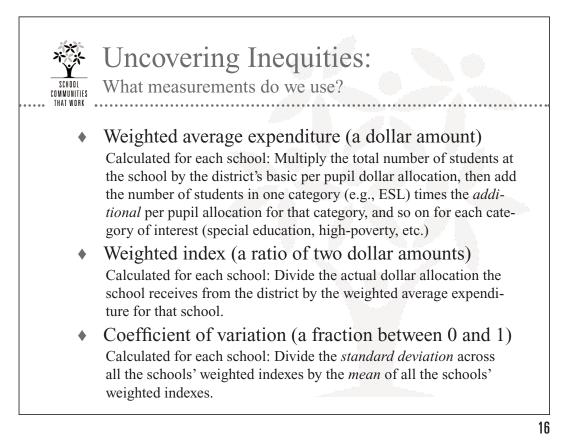
NOTE In analyzing variation, we compared:

- The minimum, maximum, and range
- The percent and number of schools above 110% and 105%, and below 90% and 95%.

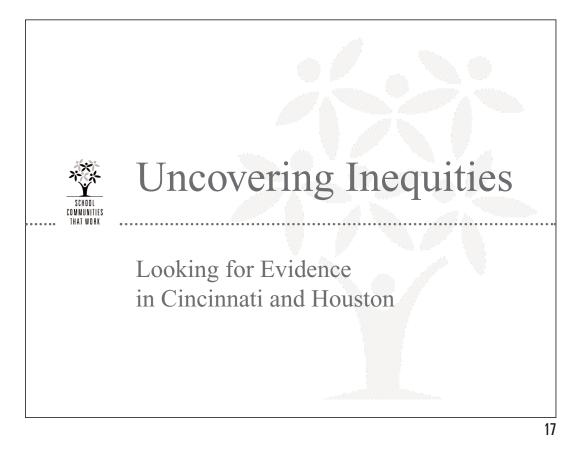
The coefficient of variation (see slide 16) shows whether the differences in funding from one school to another are extreme or whether the values for different schools are acceptably close to the district averages.



NOTE This step is similar to Step 2 (see slide 14), with the difference that the coefficients of variation are calculated for subgroups of schools (type of school, region of schools, type of program, student characteristics, etc.) rather than for the whole district.



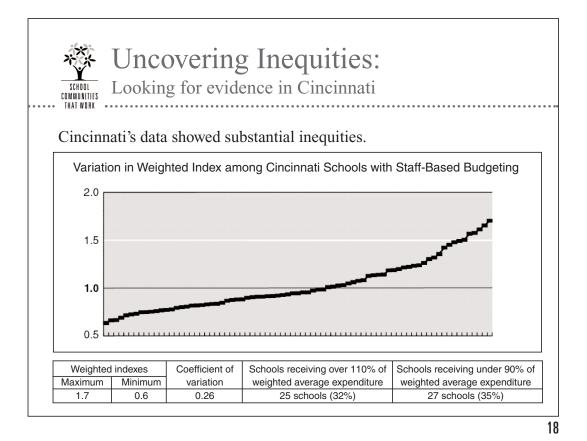
NOTE The concepts and terminology *weighted average expenditure* and *weighted index* and the formulas used to derive them were developed by School Communities that Work as part of the three-step analytical method described in slides 13–15.



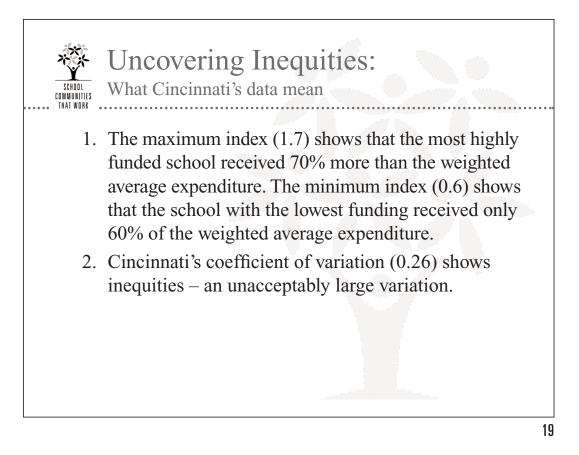
NOTE See slides 13–15 for a description of the three-step analysis process.

Cincinnati Public Schools is a midsized district with fewer than 100 schools, characterized by substantial variations in wealth and performance within the district. Data were analyzed for the 1998–1999, 1999–2000, and 2002–2003 school years.

Houston Independent School District is a large district with a historic commitment to equity. The district has over 250 schools and substantial high-poverty and ESL populations. Data were analyzed for the 1998–1999 and 1999–2000 school years.



NOTE Slide 11 showed the variation in per pupil expenditures in dollars, which cannot capture variations due to different categories of students. In slides 18–21, we apply the first two steps of the three-step analytical process described in slides 13–15. We use a weighted index – the ratio between the district's actual dollar expenditures on a given school and what the dollar expenditure would be if the school received the district's average dollar expenditure for the numbers of students of different characteristics at that school. Using this index, we are able to compare across different kinds of schools with different student populations and even across different districts.



NOTE 1. The average index is 1.0.

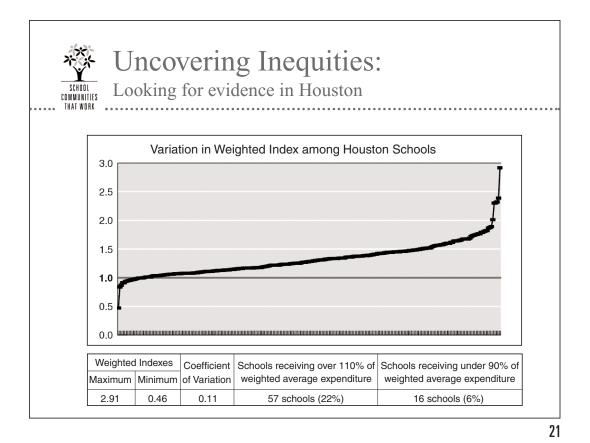
2. The coefficient of variation is the standard deviation divided by the average. It measures how extreme the high and low values are compared to the average. Generally, researchers agree that variation above 0.1 is unacceptable.



# **Uncovering Inequities:**

What Cincinnati's data mean

3. The percentages indicate that a third of the district's schools receive funds in excess of 110% of the weighted average expenditure and a third are short-changed by more than 10% under the traditional staff-based budgeting system.



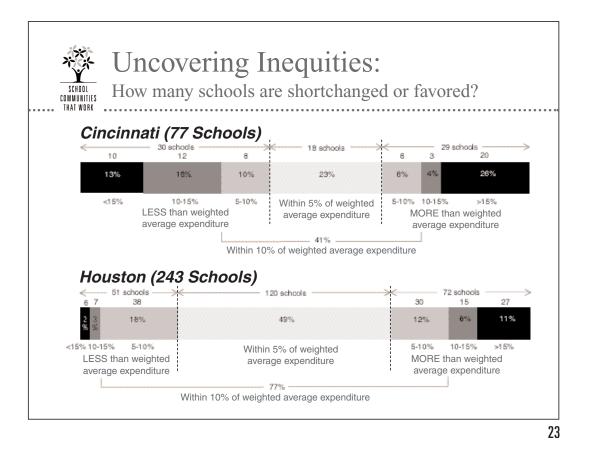
NOTE Not all districts have the same equity issues. The pattern of inequity was different in Houston than in Cincinnati.

Houston'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 lower at 0.11.

While 22% of the schools still receive resources over the 110% level, only 6% were severely disadvantaged (funding levels under 90% of the weighted average expenditure) by staff-based budgeting policies.





NOTE The number of schools receiving less than 95% (or 90%) of the weighted average expenditure shows how many schools suffer from the current unequal distributions under staff-based budgeting.

Those receiving greater than 105% (or 110%) of the weighted average expenditure are favored by the current distribution, and therefore would lose the most in a more equal distribution of funds.

A redistribution in Cincinnati would impact a greater percentage of schools than in Houston, including twenty schools currently receiving at least 15% more than the weighted average expenditure.

In Cincinnati, the *majority* of the schools showed equity disparities (either positively or negatively) under staff-based budgeting.

In Houston, more of the schools received funding close to the weighted average expenditure.

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# Uncovering Inequities:

Which schools and students are affected?

	Average weighted index for each grou schools under staff-based budgetin	
	Houston	Cincinnati
Small Schools	1.12	1.07
Large Schools	0.99	0.90
Elementary Schools	1.02	0.99
Middle Schools	1.15	1.30
High Schools	0.89	0.99
Alternative/ Magnet Schools	1.80	1.17
High-poverty Schools	1.04	1.00
Low-poverty Schools	1.16	1.00

A value of 1.0 represents funding that exactly matches the district's average expenditures for a school's particular mix of students.

NOTE Inequities can be hidden in certain kinds of schools or sectors of the district. Examining the average weighted index for subsets of schools (step 3, slide 15) reveals systematic investment patterns (even if unintentional) among certain kinds of schools. For instance:

Alternative and magnet schools in both districts were funded at much higher levels than the rest of the schools, with an average index of 1.80 in Houston and 1.17 in Cincinnati.

In Houston, a greater share of the resources were also being devoted to low-poverty schools, with an average weighted index of 1.16.

Middle schools also received more than their share.

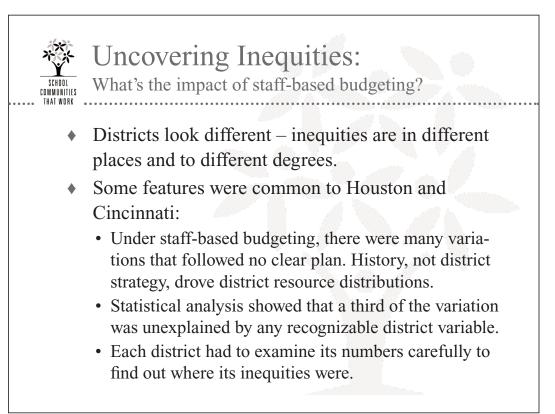
Further examination of the coefficients of variation for each subset (not shown here) also tells us how much variation there is within that subset. For instance:

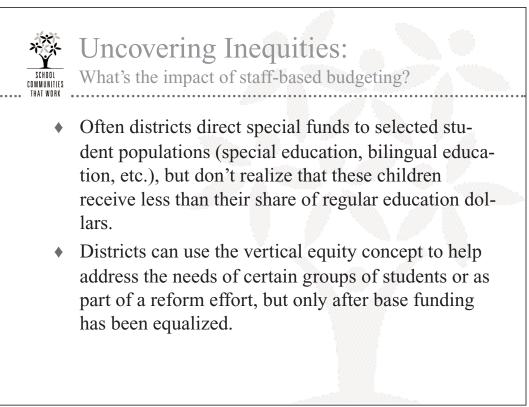
In Cincinnati, much of the variation was among the high schools (which had a high coefficient of variation). Some received unusually large budgets compared with the weighted average expenditure, and others received much less.

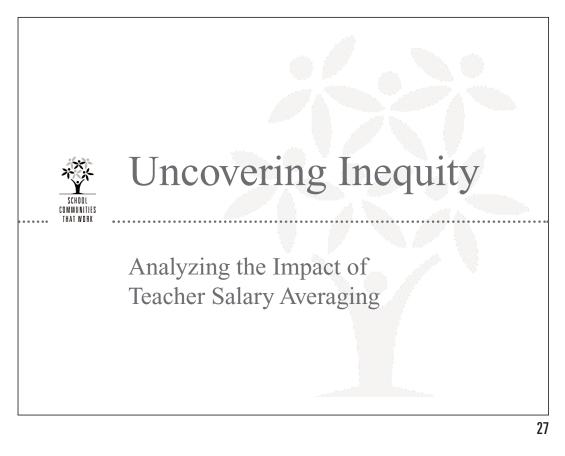
In Houston, a high coefficient of variation for the low-poverty schools (0.34) indicated that while some wealthier schools got much more than their share, the pattern did not extend to all wealthier schools.

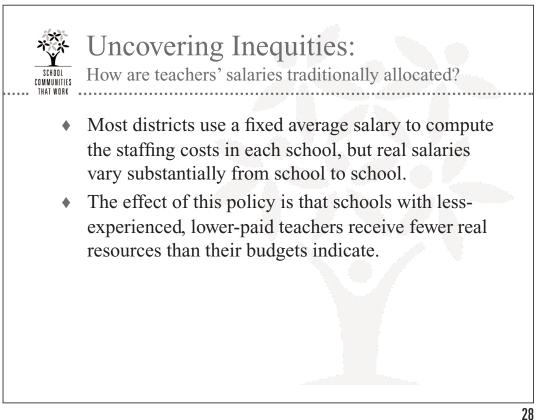
Analyzing just the basic education dollars shows how deep some inequities are buried. In both districts some schools received appropriate added levels of funds for special programs (like bilingual education), but funding for the basic education program was inadequate.

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Uncovering Inequities:

**SCHOOL** To what extent do real salaries vary?

Variation in Teacher Salary Costs Among Schools

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		Cincinnati	Seattle
Average percentage of impact among schools		5.9%	4.9%
Average variation	Per pupil	(+/) \$189	(+/) \$144
among schools	Per school	(+/-) \$106,974	(+/-) \$72,576
Maximum benefit	Greatest per school benefit from salary averaging	\$522,495	\$238,539
	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

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# NOTE For information on Cincinnati, see slide 17.

Seattle Public Schools is a midsized district with fewer than 100 schools, characterized by substantial variations in wealth and performance within the district. Data are from the 1999–2000 school year.

On average, each school gained or lost 5% to 6% of its budget due to salary averaging practices.

In Cincinnati, one school lost nearly \$1,000,000 from this policy.

# Uncovering Inequities:

Who benefits and who loses from salary averaging?

Weighted Salary Index

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Type of School	Cincinnati	Seattle
Elementary Schools	0.99	1.00
Middle Schools		0.96
High Schools	1.06	0.94
High-poverty Schools	0.96	0.97
Low-poverty Schools	1.07	1.02
High-Performing/Achievement Schools	1.02	1.03
Low-Performing/Redesign Schools	0.94	0.95

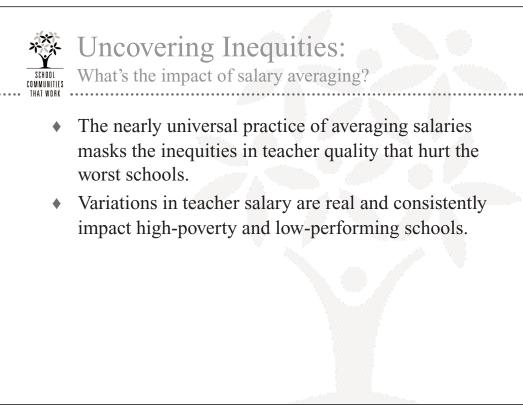
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NOTE In this slide we apply the weighted index described in slide 16 to the policy of averaging teachers' salaries.

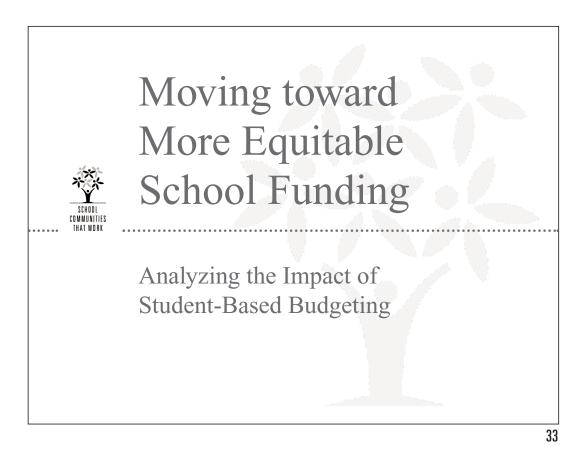
The weighted salary index tells us how salaries in a given school (or set of schools) compare to the district averages. Indexes over 1.0 show higher than average salaries.

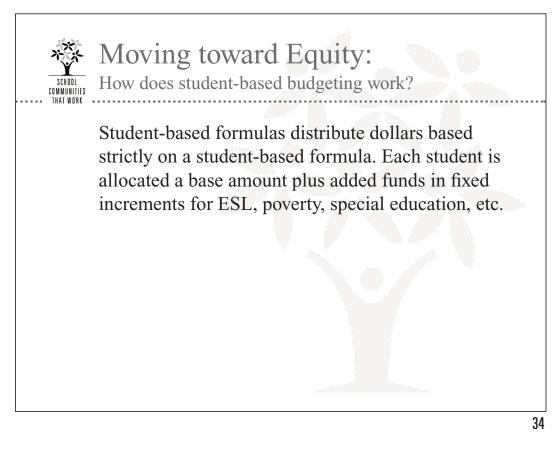
High-poverty, low-performing schools in both districts lose out, as more highly paid teachers tend to end up in more desirable schools.

# What's the impact of salary averaging? Most researchers agree that salaries are not a perfect indicator of teacher quality, because salary is dependent on a scale that does not accurately reflect quality. Equalizing salaries without reforming salary scales will not fully remedy inequities in teaching resources. However, equalizing schools' ability to purchase quality teaching resources is vitally important.

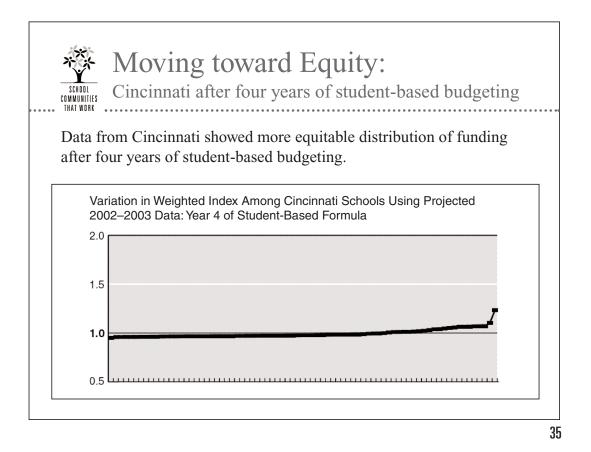


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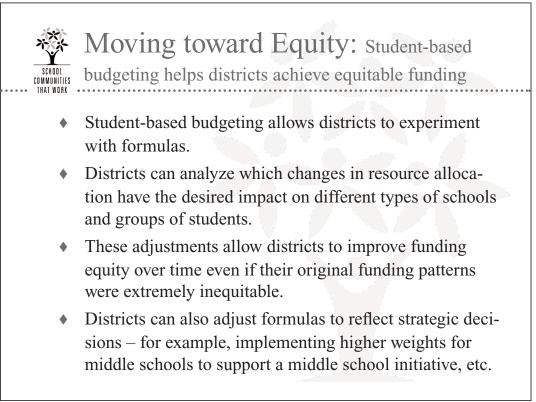




NOTE A formula of this type is given and explained in *Assessing Inequities in School Funding within Districts: A Tool to Prepare for Student-Based Budgeting* (Annenberg Institute 2002).



NOTE Compare this chart with the chart for the same district under staffbased budgeting (Slide 18). Under student-based budgeting, the funds received by the district's schools are grouped much more closely around the weighted average expenditure, indicating greater equity.



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Moving toward Equity: Student-based

budgeting allows more equitable allocations

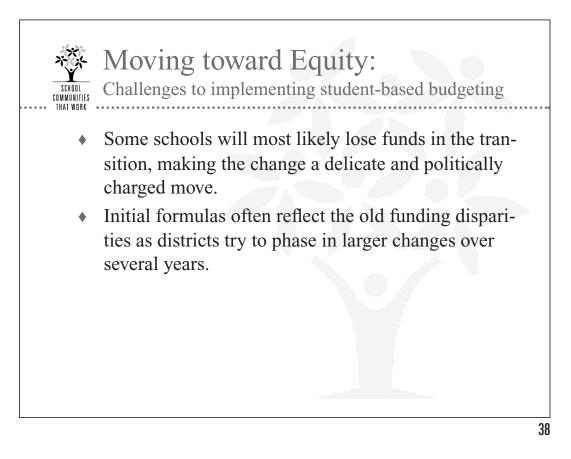
		Percent of schools that had allocations within 5% of the weighted average expenditure	Percent of schools that had allocations within 10% of the weighted average expenditure
Houston	Traditional staff-based budgeting	49%	77%
	New student-based formula (Year 1)	72%	82%
	Traditional staff-based budgeting	23%	42%
Cincinnati	New student-based formula (Year 1)	23%	49%
	New student-based formula (Year 4)	87%	97%

NOTE As these districts implemented student-based budgeting formulas, resources were reallocated among schools, creating substantial improvements in equity (more schools receiving allocations near the weighted average expenditure).

In Houston, the student-based formula equalized distributions substantially, with only 1 in 4 schools deviating from the weighted average expenditure by more than 5%.

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Cincinnati initially used a more complicated formula that accommodated a larger range in the distribution of dollars. The Year 1 result was only a modest move toward equity. The district continued to adjust the formula, and the Year 4 data show much more equitable distributions.



NOTE For the three districts we studied, the transition to a student-based formula has been gradual, with incremental changes each year following implementation.

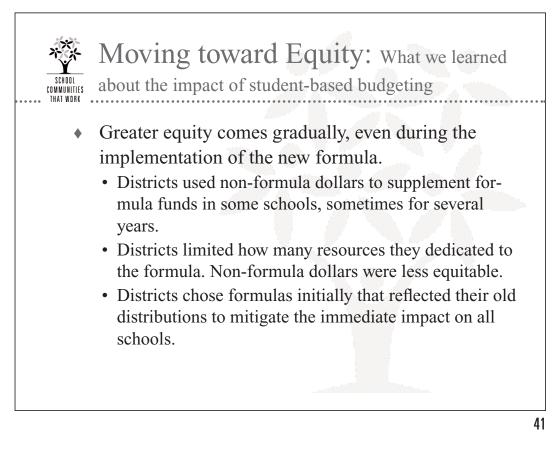
	ing toward E	-		
The impact a	after one year was differ	rent for Cir	ncinnati and	d Houston.
Movement of	of Resources in Transit	ion to a St	udent-Base	ed Formula
	Change in	Average Change	Largest Gain	Largest Loss
	Per pupil revenues	\$250	\$3,661	-\$1,240
Houston	Total school revenues	\$174,406	\$507,154	-\$991,480
Year 1	Percent of school revenues	9.1%	16.8%	-33.8%
	Per pupil revenues	\$266	\$1,131	-\$1,546
Cincinnati	Total school revenues	\$120,170	\$730,881	-\$595,316
Year 1	Percent of school revenues	4.2%	16.8%	-16.4%

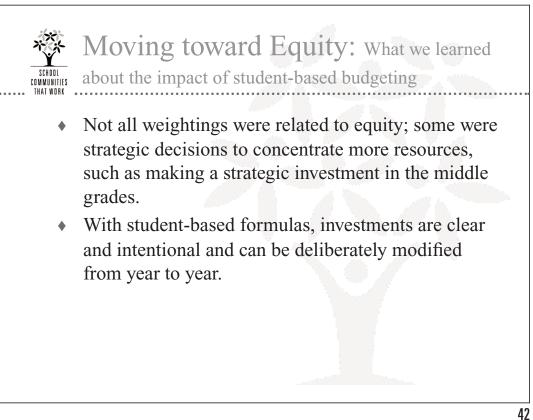
NOTE These data reflect changes after the first year of implementation.

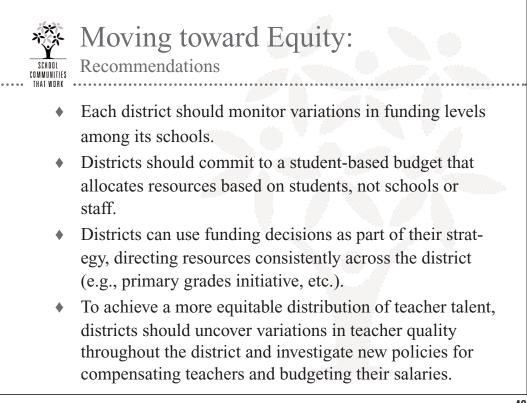
For each district, many schools experienced substantial changes in their funding levels.

Success in the first year depends on previous inequities and on the particular formula adopted.









# School Communities that Work Task Force Core Group

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