



\$SCHOOLS IN CRISIS: MAKING ENDS MEET

Student-Based Allocation to Enable School Choice

Marguerite Roza and Suzanne Simburg

January 2013

When a student leaves one school to attend another, most people imagine that the public funds for that student move too. This notion, that movement of students implies movement of public funds, is a functional component of school choice policies. However, in practice, many districts don't yet have fiscal policies that include portability of funding with school choice, and if money is not moved with each student, the accountability function fails.

One way districts can enable funding portability is with the use of student-based allocation formulas that allocate funds to districts and schools based on enrollment of students and student types. The student-based allocation model enables "pocketbook power," creating incentives for schools to attract students, keep full enrollment, and demonstrate excellent student performance.

Student-based allocation models (also known as "weighted student funding") have been around for two decades, but not always as a mechanism to enable choice and accountability. Some policymakers implemented these kinds of policies to create more financial equity across schools, or as a component of school-based decision-making. This brief explains the need for a student-based allocation system in the context of school choice, and provides an overview of the key features that enable student choice across schools within districts. Specifically, the brief covers:

- How traditional staffing-based allocation schemes clash with choice policies.
- How student-based allocation can enable more portable funding across schools.
- Whether it is feasible for schools to lose funds as students choose other schools.

Traditional staffing-based allocation schemes clash with choice policies

School districts hold the purse strings because states task them with expending education dollars. Traditionally, district leaders then decide what gets purchased for each school (i.e., a principal, some number of teachers, a counselor, etc.). Larger districts use staffing formulas to determine how many of each type of staff a school gets. The sum total of expenditures associated with those staff (and perhaps some nominal amount for supplies and field trips) constitutes the school allocation. As Figure 1 demonstrates for a Chicago school, the allocation is effectively the sum costs of the schooling components assigned to the school—for this school the total is just over \$8 million.

Figure 1. An allocation to one Chicago School in 2005¹

Under the current budget system	
CALCULATION/FUNDING CATEGORY	AMOUNT
One per school	
■ Principal, assistant principal	\$206,000
■ Building engineer	\$69,000
Formula based on total enrollment	
■ Regular classroom teachers	\$3,084,000
■ Art, gym, counselors, other “specials”	\$451,000
■ Clerical, custodial staff	\$427,000
■ Equipment, supplies	\$283,000
Formula based on students served	
■ Special ed teachers, support staff	\$534,000
■ Bilingual teachers	\$144,000
Per pupil with free or reduced price lunch	
■ Poverty supplement	\$1,837,000
Union contracts	
■ Staff benefits	\$1,082,000
TOTAL:	\$8,117,000

Not surprisingly, this kind of allocation scheme yields uneven per-pupil spending across schools within districts. The uneven allocations happen, in part, because what gets allocated—staff—are bulky expenditures that aren't partitioned in ways that can be sensitive to small changes in enrollment. Schools might receive one teacher for every 26 students, a vice principal if it has more than 400 students, and a special education specialist for every 10-20 students with learning disabilities. A school stands to lose (or gain) substantial resources when on the cusp of the range—for example, moving from 399 to 401 students can drive a \$120,000 allocation for a vice principal's salary and benefits. Yet the school stands to gain almost nothing by adding a student between cut points, say from 401 to 402 students. The per-student costs of one per school allocations, like an art teacher or a counselor, are highly dependent on the school's enrollment—the denominator in a per-student calculation. Lastly, spending at each site varies with

staff salaries, often dependent on the extent to which a particular school's faculty are more or less senior, which can further widen the funding gaps between schools.²

The result can be wildly different spending levels across schools. For instance, in Denver Public Schools in 2005, the per-student spending levels at each elementary school varied from \$3,500 to nearly \$6,000 (see Figure 2).

Even with these data, it is difficult to get a sense whether the uneven spending supports the uneven needs of students at each school or conflicts with it. In other words, are the high-spending schools the ones with the most challenging students, or the ones with the least challenging students? Clearly, making sense of the effects of a district's allocation scheme requires some recognition of the mix of students at each school.

1. From John Myers, “CPS Budget Analysis: CPS eyes budget equity,” *Catalyst Chicago*, February 2005.

2. Karen Hawley Miles and Marguerite Roza, “Understanding Student-Weighted Allocation as a Means to Greater School Resource Equity,” *Peabody Journal of Education*, 81(3), 39-62, 2006.

Figure 2. Per-student spending varied across Denver Public Schools prior to implementing student-based allocation³

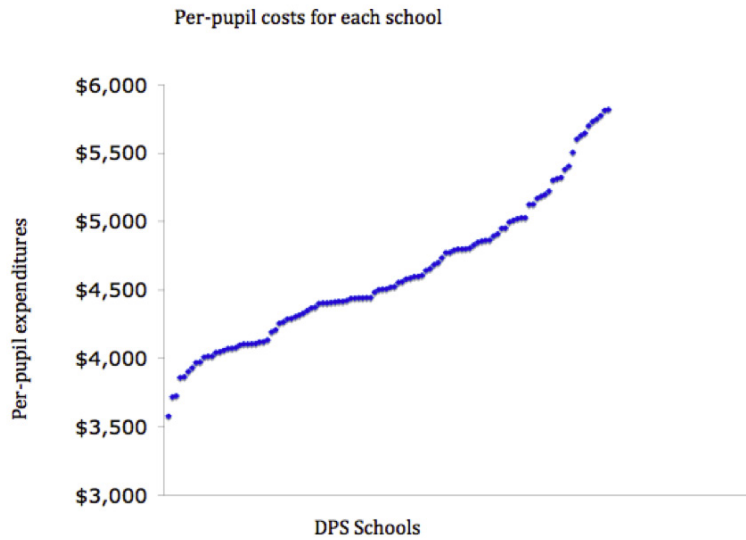
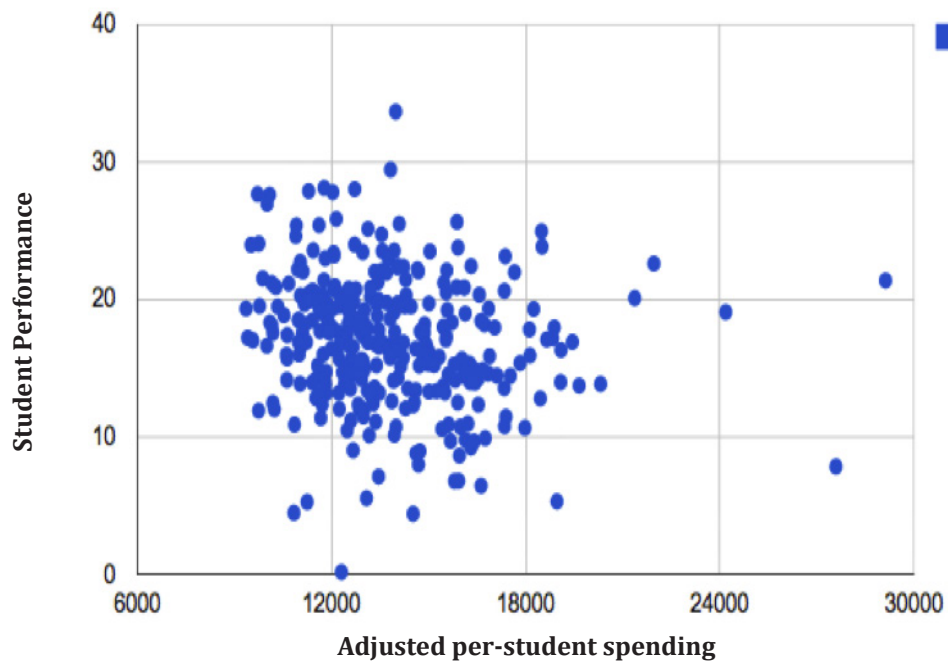


Figure 3. Student performance and adjusted spending by New York City schools in 2007, prior to implementation of student-based allocation



Source: Author’s graphic based on data provided by the Research Alliance, using New York City Department of Education weighted performance measures.

3. Based on first author’s calculations and presented at the Association for Education Finance and Policy conference, 2007.

Figure 3 arrays financial data with student outcomes data. Each dot is a New York City school in 2007 (prior to student-based budgeting), plotted on adjusted per-pupil spending and performance. As shown, some schools spent very little and had low outcomes (bottom left) while others spent more and had high outcomes (top right). Conversely, some schools spent very little and had better outcomes (top left) while others spent a lot and had poor outcomes (bottom right). Not only was spending highly variable across schools, the spending patterns were not systematically related to student outcomes.

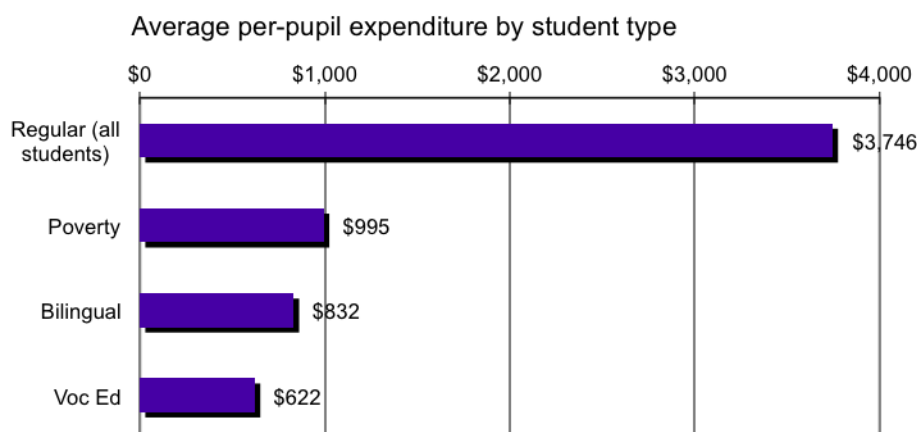
These displays trigger questions about equity, efficiency, and transparency. They also reveal problems when a district seeks to expand student choice, expecting the movement of students to be a way that schools are held accountable for their own relevance and performance. For districts, the obvious concern is how to alter allocations across schools when students transfer. If one school spends an average of \$4,000 per student, and another spends an average of \$6,000, how much money should be shifted when a student transfers? Additionally, for schools losing or gaining students, how can the allocation system support their efforts to cope with enrollment shifts?

Student-based allocation provides a more portable funding framework compatible with school choice

Student-based allocation emerged as a more equitable way to distribute funding, create transparency, allow flexibility in resource use, and enable portability with student choice. Student-based allocation, also sometimes called “weighted student formula” or “fair student funding,” puts students at the center of the funding formula by allocating funds to schools on the basis of students and needs, instead of allocating staff or funding programs.

Student-based allocation generally begins with some recognition of the average per-pupil spending by student type in a district. Figure 4 illustrates how these averages looked in Chicago in 2005, where the district continued to rely on a staffing-based formula. All regular education funds divided across the total population yielded an average of \$3,746 per student. Similarly, the district computed per student spending for poverty (\$995 per poverty student), bilingual education (\$832 per bilingual education student), and vocational education (\$622 per participant.)

Figure 4. Chicago, 2005 average per-pupil expenditure by student type



Source: Author analysis of Chicago Public Schools data.

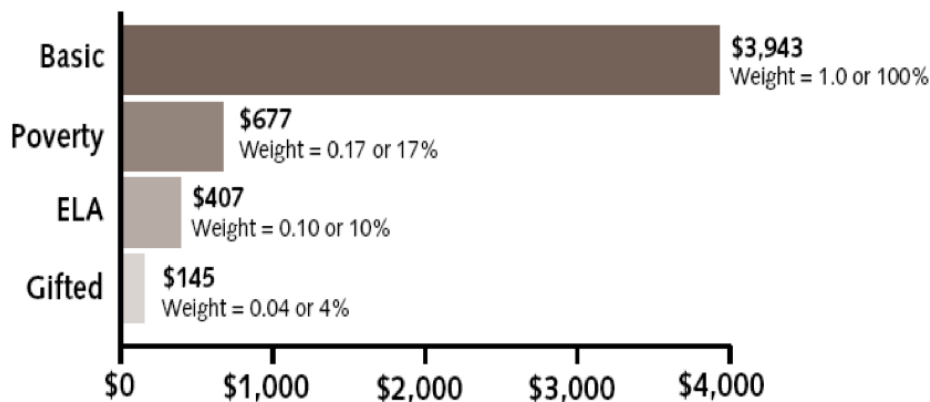
The idea behind student-based allocation is that instead of allocating staff and paying their costs, the district would simply allocate these dollar amounts to each school based on its mix of students. Ideally, the system targets some funds to certain pupil types according to their different educational needs and the cost to provide services. Every year, as the mix of students at each school changes, so does the allocation, according to the formulas above.

In some cases, districts compute the dollar amounts by student types in terms of “weights,” reflecting an added percentage increment on top of the base regular education amount. The student types receiving additional “weight” depend on the district but should specify characteristics of *students*, not programs or services. Districts may find that students who are poor or who have limited English proficiency may require extra funding, but the districts don’t designate participation in a language immersion program or in a magnet school as a student characteristic. Likewise, school size is not a student characteristic. Student characteristics may include:

- Poverty
- Limited English proficiency
- Disability
- Grade level
- Vocationally bound
- Gifted
- Other vulnerable students (homeless, transient, adjudicated, etc.)

Even in a staffing-based allocation system, it is possible to compute the implicit weights by computing the dollar average of the additional staffing costs allocated on the basis of student types. As Figure 5 shows, the implicit weights from Denver’s 2005 allocation method amounted to an average increment of 17 percent for low-income students, and an average increment of 10 percent for bilingual education students.

Figure 5. Denver Public Schools’ implicit weights



Source: Metro Organizations for People, *Unraveling the DPS Budget: Toward Transparency and Equity through Weighted Student Funding*, 2006.

Those implicit weights tell us the average per-student dollar amounts associated with the district’s total staffing allocations on behalf of each student type. The implicit weights provide a starting place for shifting from a staffing allocation system to a student-based allocation system. Consider again the same Chicago school illustrated in Figure 1, which received \$8,117,000 in funding in 2005. Figure 6 demonstrates that this school, with its mix of students, would receive \$11,659,000—or over \$3 million more—under the district’s implicit spending weights if the money was allocated with a student-based funding formula. While some schools, like the one from this illustration, would gain funds after transitioning to student-based allocation, other schools would lose funds in a revenue neutral situation.

Figure 6. How student-based allocation would work in one Chicago school⁴

Using per-pupil funding

<i>Basic per pupil</i>	<i>Bilingual per pupil</i>	<i>Special ed per pupil</i>	<i>Poverty per pupil</i>
\$5,000* + <u>x 1,758</u>	\$520* + <u>x 884</u>	\$4,000* + <u>x 143</u>	Same <u>formula</u>
\$8,790,000	\$460,000	\$572,000	\$1,837,000
TOTAL:			\$11,659,000

***Note:** Figures proposed by CPS budge office. CPS estimates that special education costs range from \$3,000 to \$5,000 per pupil. The midpoint was used for this example.

Source: *Catalyst* calculations based on data from CPS Office of Management and Budget; Annenberg Institute for School Reform

Previous reports have surfaced several key issues relevant to the mechanics of implementing student-based allocation.⁵ As districts adopt student-based allocation in a choice model, some additional issues have surfaced, including whether and how schools can adjust their spending each year to accommodate the enrollment fluctuations that accompany choice.

Is it feasible for schools to lose funds when students choose other schools?

Thus far, this brief has discussed how districts can redesign their allocation schemes to enable more portable funding. A second critically important question for many is whether or not such a student-based system is viable for schools—particularly those schools that stand to lose students *and funds* with choice.

Much of the worry stems from concepts of fixed costs and economies of scale. Setting aside facilities costs (which are most often managed centrally), the first concern is that schools have fixed costs associated with staff, and that at any size, a school can’t simply shrink and thus save on expenditures when students leave. Secondly, once below a certain enrollment, the concern is that a school misses out on scale economies because the costs of the principal or art teacher are divided among fewer and fewer students.

4. From Meyers, “CPS Budget Analysis.”

5. Namely: 1) what funds are included in the school-based allocation, 2) which students should be weighted and by how much, and 3) how to phase in changes to schools’ allocations.

An earlier paper illustrates that schools need not surrender to a notion of “fixed costs” and “scale economies.”⁶ Lurking behind both of these assumptions is the idea that there is only one way to serve students (for example, a prescribed mix of staff supporting schools organized in a traditional manner), and thus schools have no alternative but to purchase those services. Schools that drop below 300 students (or whatever the conventional wisdom is for the locale) simply can’t purchase the minimum staff without additional funding.

These forces have dominated the thinking on smaller schools, namely that basic staffing in smaller schools should be structured in much the same way as in larger schools. Small schools, the argument goes, still require a full-time librarian, receptionist, principal, nurse, physical education teacher, etc., and thus some minimum level of fixed costs is unavoidable. Furthermore, popular thinking around enrollment loss and small district expenses often focuses on the high “fixed costs” that schools face.⁷ However, in other industries, personnel costs (the majority of school expenditures) are *not* considered fixed costs.

In fact, it is possible that staff can shrink with smaller enrollments, and school designers can rethink delivery (for example, the principal might also teach algebra). As school enrollments drop, it is possible that services could be purchased in smaller increments with part-time staff or by contracting with service providers (such as for online learning). It is clear that it is technically possible to operate schools at different sizes. A scan of thousands of schools in this country shows that they can, and do, operate at all different sizes, most of which are much smaller than the urban schools perpetually in fiscal trouble. In some cases, districts will need to confront some barriers in collective bargaining agreements or state regulations, although most of the barriers will likely reside in their own local district policy decisions.

That said, adapting to declining enrollment is not something most schools have yet been asked to do, and making the kinds of changes discussed here requires increased flexibility, new processes, engagement with staff and communities, and training. Specifically, if schools are to adapt to enrollment shifts (particularly enrollment drops), here is what is needed:

1. **Transparent** funding formulas that don’t leave schools guessing about next year’s allocation. Structuring allocation by enrollment makes the funding arrangement very clear to all at the school level, so building leaders are not left wondering if they will be allocated a counselor or not.
2. **Flexibility** to hire and apply staff in ways that reflect the school’s enrollment. Schools with shrinking enrollments might consider shifting to language software programs in order to reduce full-time Spanish teachers, or contracting with a health care provider instead of employing a full-time nurse.
3. **Tools** to model financial tradeoffs for the school site. Many principals never see the financial costs of the staff allocated to their building and thus don’t have a sense of what possibilities exist to serve smaller enrollments in different ways.⁸
4. **Training** to build skills in financial management at the school site. Where principals have been asked to lead their teachers, learning how to better apply their resources will be a new challenge

6. Marguerite Roza and Jon Fullerton, “*The Phantom Menace*”: How state finance policies that protect districts from declining or low enrollments drive up spending and inhibit adaptation, Working paper (Seattle: Center on Reinventing Public Education, 2012).

7. For an example of this, see Massachusetts Association of School Superintendents Charter School Task Force, *Beyond Discord: Resolving the Tensions between Charter and Public Schools*, March 2005, Appendix C.

8. Pivot Learning Partners uses this kind of tool in their work with districts to re-design their structures, processes, and metrics.

5. A plan to trigger closure when school enrollment drops to an unsustainable level. While there is no clear size at which schools are too small to survive, the principal may know when it is time to call it quits. As an earlier study found, having the principal consider school closure as part of the yearly budget process can help minimize the politics involved.⁹ Where schools do opt to close, they might stop taking new students, but be eligible for additional funds to allow existing students to finish out over a period of 3-5 years.

Effective student-based allocation requires these additional changes to address the inevitable enrollment shifts and other challenges that school systems likely will face. However, schools and districts have found many creative and effective ways to solve these challenges in order to ensure that family and student choices enhance school accountability, and that funding models provide schools with the resources they need to serve diverse student and family needs.

9. Kacy Guin and Marguerite Roza, "Lessons from the Headlines," *American School Board Journal*, 2007.

The \$SCHOOLS IN CRISIS: MAKING ENDS MEET series of Rapid Response briefs is designed to bring relevant fiscal analyses to policymakers amidst the current economic crisis. For more information, please visit www.crpe.org



Dr. Marguerite Roza is Director of the Fiscal Analytics Unit at Georgetown University and Senior Research Affiliate at the Center on Reinventing Public Education.

Suzanne Simburg is Research Consultant at the Center on Reinventing Public Education.

Funding for this work was provided by the Bill & Melinda Gates Foundation. We thank the foundation for its support, but acknowledge that the findings and conclusions contained here are those of the authors alone and do not necessarily reflect the opinions of the foundation.