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How Money Matters for Schools

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Abstract

This brief is based upon a report that reviewed research on the role of money in determining school quality. The research documents that resource investments matter for student outcomes, especially when they are directed to under-resourced districts and students from low-income families. The research also shows that spending resources in ways that reduce class sizes for young children and those with greater academic needs and that improve teacher quality have strong payoffs for outcomes. Finally, some research suggests that increasing and equalizing school funding may be most effective when it is part of a comprehensive set of efforts to improve teaching and learning.

While money alone is not the answer to all educational ills, more equitable and adequate allocation of financial inputs to schooling provides a necessary underlying condition for improving the equity and adequacy of outcomes.

The full report can be found online at https://learningpolicyinstitute.org/product/how-money-matters-schools.

External Reviewers

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Introduction

For decades, there has been an energetic debate about whether and how money matters for school outcomes. While it is certainly possible to spend money poorly, the view that money does not make a difference is strongly contradicted by a large body of evidence from recent rigorous research, which we discuss in this brief. A thorough review of the research on the role of money in determining school quality leads to the following conclusions:

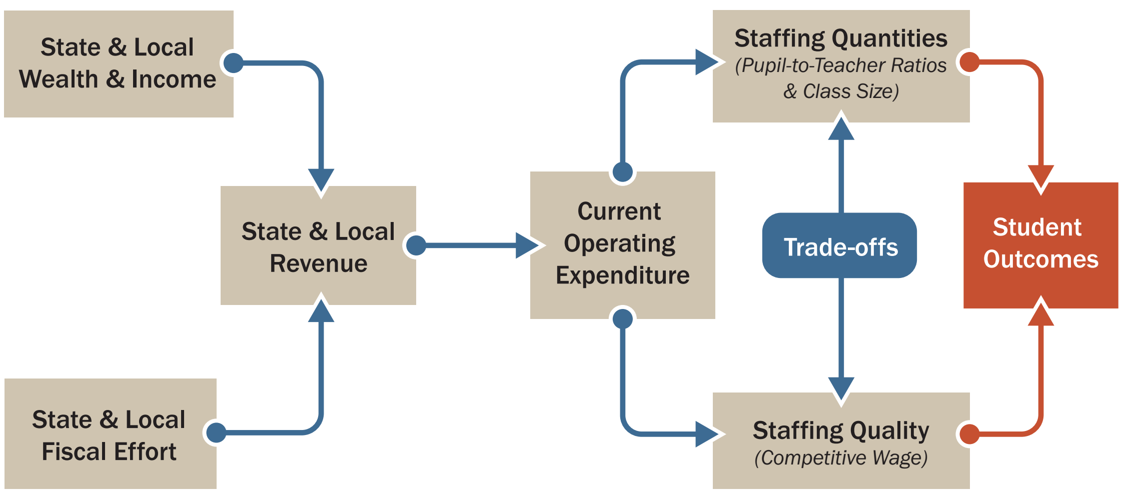
- **Does money matter?** Yes. Improvements in the adequacy and equity of per-pupil spending are positively associated with improved student outcomes. While there are other factors that moderate the influence of funding on student outcomes, such as how that money is spent, the association of higher spending with better student outcomes holds true, on average, in numerous large-scale studies across multiple contexts. The size of this effect is larger in some studies than in others, and, in some cases, additional funding appears to matter more for some students than for others—in particular, students from low-income families who have access to fewer resources outside of school. Clearly, money must be spent wisely to yield benefits. But, on balance, in direct tests of the relationship between financial resources and student outcomes, money matters.
- **Do schooling resources that cost money matter?** Yes. Schooling resources that cost money are positively associated with student outcomes. These include smaller class sizes, additional instructional supports, early childhood programs, and more competitive teacher compensation, which permits schools and districts to recruit and retain a higher quality teacher workforce. These resources typically matter more for students from low-income families and students who have been lower achieving. There is scarce evidence that one can gain stronger outcomes without these resources.

- **Do state school finance reforms that provide more equitable and adequate funding matter?** Yes. Sustained improvements in the level and distribution of funding across local public school districts lead to improvements in the level and distribution of student outcomes, ranging from graduation rates to educational attainment and wages. While money alone may not be the answer, more equitable and adequate allocation of financial inputs to schooling provides a necessary underlying condition for improving the equity and adequacy of outcomes. The available evidence suggests that appropriate combinations of more adequate funding with standards and instructional supports for learning may be most promising.

A Model of How Money Matters

Figure 1 provides a simple model of the relationship of schooling resources to children's school achievement: The financing of public education systems depends on states' fiscal capacity—their wealth and income—combined with how they tax states and localities.

Figure 1
Conceptual Map of the Relationship of Schooling Resources to Children's Measurable School Achievement Outcomes



As a rule of thumb, for a state school finance system to provide equal educational opportunity, that system must provide sufficiently higher resources in higher need (e.g., higher poverty) settings than in lower need settings. Such a system is called "progressive." By contrast, many state school finance systems barely achieve "flat" funding between high- and low-need settings, and still others remain "regressive," spending more money on the education of more affluent students than on those who have greater needs.

Investing in education in this progressive manner has a number of strongly positive outcomes for students and states. One recent analysis of the long-term effects of school finance reforms across multiple states, for example, found that "the estimated effect of a 21.7% increase in per-pupil spending throughout all 12 school-age years for low-income children is large enough to eliminate the education attainment gap between children from low-income and non-poor families." This size investment led to a roughly 20-percentage-point increase in graduation rates and, on average, an additional year of educational attainment for these children.[1] Even lower levels of investment made a sizable difference. Researchers have found that "increasing per-pupil spending by 10% in all 12 school-age years increases the probability of high school graduation by 7 percentage points for all students, and by roughly 10 percentage points for low-income children." They also observed positive effects on adult wages, with a 9.6% increase in adult hourly wages, and a substantial decrease in adult poverty rates resulting from this size investment.[2]

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Key to using money wisely is a strong investment in recruiting, preparing, and supporting teachers. Achieving learning results for all children requires investments in human resources. Greater overall investment in education typically results in more intensive staffing per pupil and/or more investment in teacher salaries. Investments in more and higher quality teachers are, in turn, related to higher learning outcomes for all children.

What About the Debate That Money Doesn't Matter?

The best evidence shows that **money spent wisely has a significant impact on positive student outcomes.** Nonetheless, there are those who continue to question this finding based upon research conducted in the 1960s and '70s that seemed to suggest that money does not improve student achievement. However, many of those studies had serious methodological flaws and would no longer pass muster, given advances in data quality and statistical techniques (see "Summing It Up" on page 4).

By the late 1990s, the cloud of uncertainty around the positive effects of school funding had largely been clarified or answered by rigorous studies using newly available large data sets allowing longitudinal analyses of individual student and school-level data, like the large-scale national study described above. A 1996 study[3] conducting rigorous meta-analyses of one of the most widely cited of these earlier reports found that the report's original conclusion—that money did not influence student outcomes—was incorrect. This study noted,

> Global resource variables such as [per-pupil expenditures] show strong and consistent relations with achievement. In addition, variables that attempt to describe the quality of teachers (teacher ability, teacher education, and teacher experience) show very strong relations with student achievement.

Today, the evidence is clear that money that is thoughtfully and equitably spent does matter. Schools and districts with more money are able to provide higher quality, broader, and deeper educational opportunities to the children they serve. Furthermore, the absence of adequate funding and deep cuts to existing funding leave schools unable to do many of the things necessary to develop or maintain the key elements of a quality education. As a result, achievement ultimately declines.

Summing It Up: What About the Arguments That Money Does Not Matter?

Beginning in the 1960s, some researchers argued that family background and other circumstances explain so much of the variation in student outcomes that there is no consistent relationship between school funding and student outcomes. This position, however, is no longer tenable because:

- Previous research did not have access to newer, more robust data sets that track resources in more sophisticated ways and allow analyses over time at the student level.
- New data analyses using advances in data quality and statistical techniques consistently show that money makes a difference in student outcomes. For example, as we show below:
    - National studies in the early 2000s conducted by finance scholars using detailed data sets found positive relationships between school funding reforms and student outcomes such as graduation and educational attainment, as well as achievement.
    - Similar findings pertain to reforms in Kansas, Massachusetts, Michigan, and Vermont.
    - Investments in teacher quality (teacher ability, teacher education, and teacher experience) have been found to be particularly effective in raising achievement.

Evidence From the States

Over the years, several state-specific studies of school finance reforms have validated the positive influence of those reforms on a variety of student outcomes. Massachusetts and Michigan reforms of the 1990s are among the most studied because both states implemented significant reforms of their school finance systems that were maintained for a decade or more, although both have now waned to some extent.

Evidence from Massachusetts suggests that appropriate combinations of more funding with thoughtful standards and supports for students and teachers were a productive solution for linking funding with positive learning outcomes. Following the 1993 *McDuffy v. Secretary of Education* ruling in which the Supreme Judicial Court held that "the education clause is not merely aspirational or hortatory, but also imposes on the Commonwealth an enforceable duty to provide an education for all its children, rich and poor, in every city and town through the public schools,"[4] Massachusetts adopted a package of far-reaching education reforms that included a new education funding formula under Chapter 70 of the state code. State aid per pupil scaled up dramatically from 1995 through 2000 and then climbed more slowly through 2015. Over the period when state aid to high-poverty schools increased significantly, high-poverty districts received 40% more state and local funding per pupil than low-poverty districts.

While it is difficult to establish a direct connection between school finance reform and student achievement, we do know that the school finance reforms Massachusetts undertook that added money for students in poverty, English learners, and those identified for special education—coupled with investments in new standards, assessments, and extensive teacher training—resulted in higher student achievement as measured by standardized tests. The state also provided universal health care and preschool for students from low-income families. Three separate studies found that this comprehensive approach to funding had positive effects on student performance. One concluded that "changes in state education aid following the education reform resulted in significantly higher student performance."[5]

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In the early 1990s, Michigan also enacted state school finance reforms that reduced inequality in spending among rich and poor districts. Between 1993 and 2003, both revenues and expenditures increased by 60%, while funds were more equitably distributed. Research confirmed that reducing interdistrict spending disparities had a positive effect on student performance in lower performing districts.[6] Similar findings have been replicated in other states, including Vermont, where studies of the Act 60 school finance reforms in the late 1990s concluded the initiative "dramatically reduced dispersion in education spending by weakening the link between spending and property wealth."[7] This in turn led to more equal student performance.

A study of the effects of the 1992 school finance reforms in Kansas, which involved a leveling up of low-spending districts, found a 20% increase in spending was associated with a 5% increase in the likelihood of students going on to postsecondary education.

In short, a growing body of research demonstrates that state school finance reforms can have large, positive effects on student outcomes, raising educational attainment and reducing gaps.

How Money Is Spent Matters

Increased funding tends to lead to reduced class sizes as districts hire more teachers, and to more competitive teacher salaries.[8] A significant body of research points to the effectiveness of class size reduction for improving student outcomes and reducing gaps among students, especially for younger students and those who have been previously low achieving.[9] Often studies find that the effects of class size reduction on achievement are greatest when certain smaller class thresholds (such as 15 or 18) are reached, and are most pronounced for students of color and those in schools serving concentrations of students in poverty.[10] Smaller classes for young children have long-term effects on outcomes many years into the future.[11]

Spending to achieve competitive teacher wages also matters. A substantial body of research validates the conclusion that teachers' overall wages and relative wages affect the quality of those who choose to enter the teaching profession—and whether they stay once they get in. Increases in teacher wages have also been found to be associated with increased student achievement—presumably because more capable teachers are recruited and retained.[12]

Policy Implications

What do these findings mean for legislators and other policymakers? What are the actionable policy implications?

- **Use evidence about how money matters.** As we have seen, the research is clear: Money spent wisely matters in terms of student learning and more equitable outcomes. While money alone will not solve all our educational challenges, there is no chance of them being solved without adequate and equitably distributed resources.

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- **Ensure school finance reforms are linked to thoughtful standards and supports for students and teachers.** As we saw from the example of Massachusetts—which became the top performing state during the 1990s and has stayed there since—funding may be more effective in raising student learning and achievement when it is tied to a comprehensive reform strategy.
- **Invest more in students who have greater needs.** Progressive funding policies and laws that allocate the funds needed to support low-income school districts result in greater student learning and reduce achievement gaps.
- **Invest in human resources.** There is strong evidence that teacher quality is key to increasing student achievement, as is having small class sizes for young students and those with greater needs. Strong, personalized teaching is essential if all students are to have the opportunity to develop their talents.

Certainly, there are more policy and legislative implications of the research reported in this brief. And ensuring that all schools and school districts are adequately and equitably funded is a difficult political and technical task. But as the data in this brief makes clear, if we don't undertake this task, generations of students will not have access to the quality education they need and deserve.

Endnotes

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