Drivers of School Improvement: Efficiency and Resources

AIR®
Advancing Evidence.
Improving Lives.

A Cutting-Edge Method for Understanding the Drivers of School Improvement

Efficiency and Resources

To address school underperformance, we must first identify why schools are struggling: is it due to a lack of resources, or because they're not using their resources effectively? Broadly speaking, from an economic perspective, there are two factors that drive output: inputs and efficiency. In education, this means there are two ways to improve student outcomes: **using resources more efficiently** (like funding, staff, and materials) or **increasing the quantity and/or quality of resources**.

Many education policies are based on the idea that improving school performance, especially in low-performing schools, requires either more efficient use of resources and/or additional resources. The American Institutes for Research® (AIR®) has developed **cutting-edge methods** to understand **which schools are operating efficiently and which are not**. We can also determine whether a school's underperformance is due to inefficient use of resources or simply not having enough resources.

Unlocking Insights for School Improvement

AIR combines its unique expertise in school improvement, education finance, and accountability to provide nuanced information about school performance and resource levels to support school improvement. Our rigorous research and impactful communication make AIR a trusted source for accountability insights.

Partner with Us

AIR is collaborating with states and foundations to advance this work. For more information, contact:

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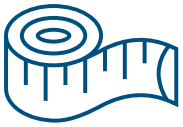
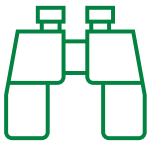


What is efficiency and how do we measure it? *School efficiency* refers to how well schools use their existing resources. To measure efficiency, we first determine expected outcomes for each school, considering factors like funding levels, demographics, and other characteristics. On average, actual outcomes across all schools match expected outcomes. However, individual schools often show differences between actual and expected outcomes, which indicates their level of efficiency.



How can we predict the resource needs of schools? Using a cost-function model, we analyze the relationships between school spending, student outcomes, and other characteristics that drive costs, such as student needs, school size, school level, and whether the school is in an urban or rural area. Based on these relationships, we estimate the spending needed to achieve a target student outcome level, accounting for differences in school characteristics.

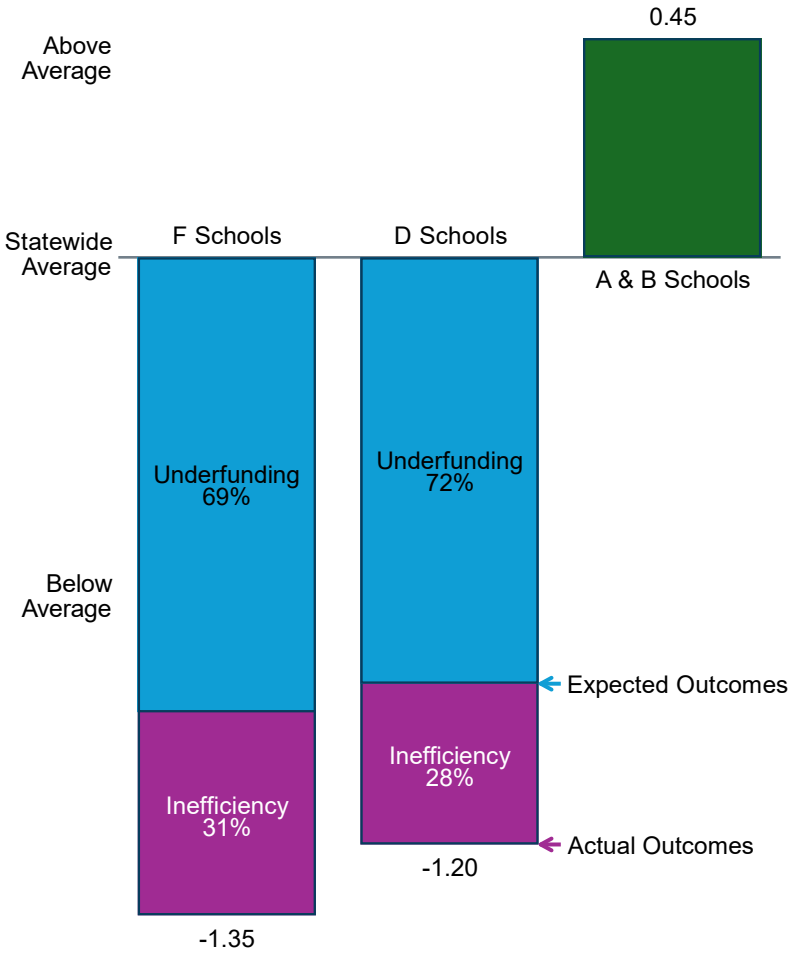
How can understanding a school's efficiency and resource needs help drive school improvement? Imagine two schools identified as low performing. School A has enough resources but doesn't use them well. School B uses its resources effectively but doesn't have enough to meet its high student needs. The support these schools need is likely very different. Understanding each school's efficiency and resource needs can help states and districts tailor their support to improve underperforming schools.

How do we analyze school efficiency?

This sample chart compares the performance level of schools with accountability ratings of F and D to those with A and B ratings. In this example, F- and D-rated schools perform far below the statewide average on student outcomes. Our analyses break down the low performance of these schools into portions attributable to underfunding and inefficiency.

F- and D-rated schools have actual outcomes that fall below their expected outcomes, which are predicted based on funding levels, student demographics, and other school characteristics. When actual outcomes are lower than expected outcomes, the difference represents *inefficiency*. Assuming a target outcome of the statewide average, about 30% of the underperformance of F and D schools is due to inefficiency (shown in purple). The remaining difference (shown in blue) is due to underfunding.

A and B-rated schools perform above the statewide average, suggesting they are sufficiently funded and efficient in meeting the statewide average outcome as a performance target.



Who can use these analyses?

States
Uncover patterns across schools in resource levels and efficiency to better allocate resources and investigate the drivers of inefficiency

Districts
Identify which schools need more resources versus better resource use, tailor resource allocations to optimize budget

Schools
Re-examine approaches to resource use and selection of interventions, evaluate staff capacity, support improvement planning, target PD

Find out more about our Ohio accountability efficiency work.

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