

# SPENDING MONEY WISELY

## GETTING THE MOST FROM SCHOOL DISTRICT BUDGETS



### CALCULATING ACADEMIC RETURN ON INVESTMENT: A Powerful Tool and a Great Investment

Opportunity Brief • Getting Started • Lessons from the Field

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**OPPORTUNITY BRIEF**

# CALCULATING ACADEMIC RETURN ON INVESTMENT: A Powerful Tool and a Great Investment

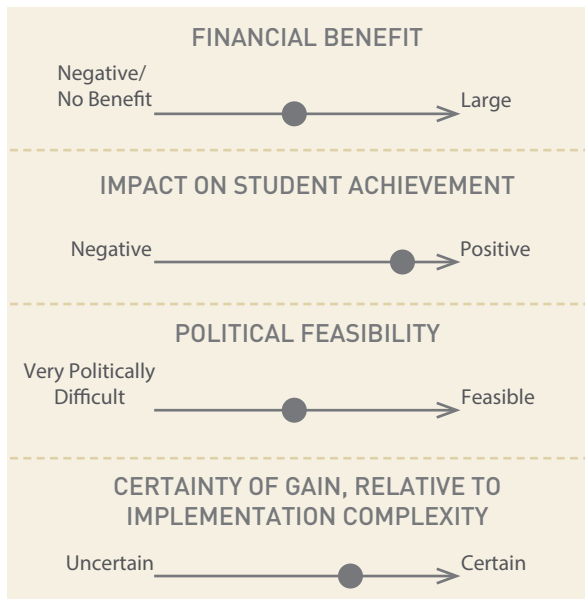


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*“Don’t keep spending money on things that aren’t working,” and  
“Don’t spend more, if less is just as effective.”*

**N**o advice for making the most out of limited education funding is more obvious or more difficult to implement. No superintendent or school board knowingly adopts a new program with the expectation that it won’t help students. No one purposely continues to fund an ineffective program. No one willingly spends more when a less expensive solution would yield the same or better results. Despite a nearly universal desire to spend only on what works, few districts have the tools, infrastructure, data, or processes to do anything but make educated guesses and hope for the best.

Budget debates sometimes include the all-too-common refrain, “Mr. Smith strongly supports this program, so we can’t get rid of it” or “The teachers really like this program.” These considerations are not irrelevant to decision-making — especially since teachers might like certain programs because they feel they help students. But, relying solely on such arguments does not serve students or the budget well.



Anecdotal evidence can be far off the mark, as it often confuses correlation and causation. Some programs, like Gifted and Talented, seem very successful because so many students in these programs have high grades and test scores and matriculate to college at high rates. But many gifted students are likely to succeed regardless of such programs. The key is to figure out which programs contribute to student success; instinct is usually not enough.

In a world of tight resources, persistent achievement gaps, and rising expectations, a rigorous system of academic return on investment (A-ROI) is a powerful lever to make the wisest use of limited funds. By providing information on

effectiveness and cost-effectiveness, the A-ROI approach can help districts determine which programs to terminate and which programs to expand. The district can save millions of dollars being spent on less-effective programs, and can redirect these funds to more-effective programs and thereby raise student achievement. Fortunately, districts need to make only a very small investment in technology and manpower to create a deep understanding of what works. Ensuring that these analyses are used effectively to guide the budget is more challenging, and in many districts, requires new skills and lots of planning ahead.

### Applying an A-ROI approach

A rigorous system of A-ROI is a powerful lever to make the wisest use of limited funds. A-ROI is a system that regularly asks and answers for every major expenditure or strategy the following questions:

**How much are we spending per student on this effort or strategy?**

**How much learning is being achieved for each dollar spent?**

**How does this “learning per dollar spent” compare to alternatives?**

Taking these questions and turning them into a formula is straightforward:

$$A-ROI = \frac{\text{(Increase in Student Learning)} \times \text{(Number of Students Helped)}}{\$ \text{ Spent}}$$

Making these calculations requires hard work, but is relatively straightforward. However, obtaining the benefits from A-ROI analysis requires creating a culture and protocols that facilitate quick and decisive shifts of resources based on the findings from this analysis.

### Alternatives to A-ROI?

Over the last few years, a number of organizations such as Broad Foundation, the Government Finance Officers Association (which actually awards honors for great school budgets), The District Management Council, the Center on Reinventing Public Education, the Wisconsin Center for Education Research, Education Resource Strategies, and school finance reform experts have been searching for districts who formally apply a return on investment approach to evaluating programs, staffing models, and strategies. The list of such districts is very short.

## A-ROI In Action

### Fulton County Public Schools

The Fulton County Public Schools sought to measure the effectiveness of a new program aimed at improving college attendance.<sup>1</sup>

A team of data analysts had uncovered a substantial “summer melt” problem, meaning that many students who had planned to go to college at the end of their senior years ended up not attending college the following fall. The district therefore decided to create a new program, the Summer PACE program, where graduating seniors were offered college-focused counseling over the summer to help ensure that they actually enrolled in college in the fall. They started by offering the program as a pilot and randomly selected students to participate. Using this approach, they could be sure that better outcomes for those in the program were really due to the program and not due to self-selection with more motivated students opting to participate in the program.

The results revealed that the program worked. Those students who received the additional PACE counseling enrolled at a 4.8% higher rate than those who did not. The effect was particularly pronounced for low-income students who enrolled at a 9.2% higher rate than those in a similar comparison group.

<sup>1</sup>Lynn Jenkins and Michelle Wisdom, with Sarah Glover, “Increasing College-Going Rates in Fulton County Schools: A Summer Intervention Based on the Strategic Use of Data,” The Strategic Data Project (Cambridge: Harvard Education Press).

To be sure, it's not that districts don't want to use this approach. In fact, nearly all districts attempt to apply the broad concepts of A-ROI, but they are hampered in their efforts. Lacking the tools and data to thoroughly analyze spending decisions, districts often rely on three surrogates:

**1- Research-based best practices:** NCLB requirements, the What Works Clearinghouse, and published research from education school professors have all fueled a growing reliance on adopting best practices, such as teacher collaboration, using common formative assessments, a focus on mastering reading by third grade, or specific purchased programs such as READ 180. If the research says it works, it is a safe bet it will be a wise use of funds.

**2- Learning from the stars:** The writer Charles Colton said in the early 1800s, "Imitation is the sincerest form of flattery," and this holds true for public schools today. The tactics and strategies of high-profile, successful school districts are often copied with confidence, such as professional learning communities from Adlai Stevenson High School (Lincolnshire, IL), extra resources for needy schools from Montgomery County, or principal empowerment from New York City.

**3- Anecdotal evidence:** First-hand evidence and first-person experiences can be compelling. Many budget discussions include stories like, "Johnny couldn't read until we switched to XYZ program," or "My teachers have really seen a big difference since switching to ABC."

All three approaches have some significant shortcomings, including:

- A program with solid research could be ineffective if implemented poorly.
- Copying one strategy from a successful district does not assure success. It is likely that many other components also contributed to the district's "star status."
- Teacher enthusiasm is not the same as student success. Sometimes there is ample praise for a strategy or approach despite no change in student achievement.
- Success for a few students doesn't necessarily mean it will work across a broader group.

Moreover, missing from all of these is the measure of cost effectiveness. Even if it is known that a program is research-based, has worked elsewhere, and is helping students in the district, a district still does not know if other alternatives are equally effective but less costly, or if the cost of a successful effort can be reduced without diminishing its effectiveness.

### Why so uncommon?

A valuable first step to building and implementing an effective system for using A-ROI is to understand some of the reasons why so few districts have done so to date.

First, district budgets often don't make it easy to calculate the relevant costs. Most budgets are so called "line-item budgets." This type of budget lists salaries by department and purchases by broad categories. The cost for math teachers and math curriculum materials are listed, but not the portion of these costs associated with a specific program, such as a remedial math effort for students who are English language learners. This problem is further complicated by the fact that districts have many budgets such as the Title I budget, Title III budget, IDEA budget, etc. Many programs are funded by multiple budgets, and it is challenging to roll up costs from multiple budgets. Creating further obfuscation is the fact that staff, which accounts for 80-85% of most budgets, are typically assigned to just one line item; often, one person works on many different programs, so a true costing requires splitting some teachers' salaries across multiple programs.

**Data is not the same as insight. Simply delivering a six-inch binder of student results and cost figures will not lead to wiser spending.**

A-ROI requires a program budget which collects all the costs (and only the costs) associated with a particular program. A greater obstacle to using a system of A-ROI is that many expenditures worthy of the approach aren't programs, but are strategies, which can be even harder to calculate. For example, a district that has an average elementary class size of 21 has, de facto, adopted a small class-size strategy. No rollup of salaries and materials alone will calculate the cost of this strategy. The same is true of many other common strategies, such as paying more for years of experience, co-teaching, or principal empowerment.

Fortunately, with a little planning and some expertise in financial modeling and cost accounting, districts can calculate the costs for nearly anything. More daunting than measuring the cost of an effort is measuring the impact of a given program or strategy. Few districts have at their fingertips data that

links academic gains to specific programs or strategies. Tracking the ups and downs in learning is possible through state tests, common formative assessments, and semester grades, but connecting these changes to specific efforts is not easy. Student mobility and the fact that students start at different levels of mastery further compound the challenge, but it is doable.

Perhaps the biggest barrier to implementing and managing resources via A-ROI is the cultural reluctance among many school and district leaders to measure student achievement or place a cost on learning. One assistant superintendent for curriculum and instruction chose to leave his district rather than “place a dollar value on kids’ learning.” He explained that if we spend a million dollars and only help one student, he would be proud. A principal in another district thought it “unethical” to calculate the per-student cost of the various remediation programs in her school. She insisted they are all “equally valuable,” despite dramatic differences in per-student costs and overall low and declining student achievement.

In a culture that often prides itself on paying all staff the same (regardless of outcomes), and staffs all schools equally (one social worker per building regardless of school size or need), this ranking of effectiveness can be very unsettling.

The desire not to know what is effective or cost-effective can run deep. In one district, a director of data and accountability was privately reprimanded by the superintendent for sharing an analysis which pinpointed effective and ineffective reading programs across their many elementary schools; in another district, the data guru was forbidden to share with principals a report that calculated student growth normalized for social-economic status (it showed many schools with more well-off students achieved very little growth in learning). In both cases, fear of embarrassing the principals or teachers led to the data’s being permanently withheld.

**Implementing A-ROI: overcoming the obstacles**

Districts that push past the queasiness of measuring results and costs will be able to target time, money, and effort to where it does the most good for the most students. Four steps can help overcome the obstacles:

**1 Build A-ROI into nearly every aspect of budgeting, teaching and learning, and central office work**

Districts must weave A-ROI into the day-to-day fabric of how they operate. This includes revising financial reporting and budgeting to capture program costs, tracking student attendance by program and strategy, and designing program evaluation into all new efforts.

It is very difficult to assess A-ROI after the fact if the district does not first create the required budgets, data-collection systems, and other systems needed to calculate accurate

per-student costs. It is even harder to measure the relevant academic gains if the district does not plan for A-ROI measurement from the outset. This includes having “before and after” student achievement data or control groups to compare results against a baseline level of achievement.

When the Food and Drug Administration wants to know whether a new medicine is effective, they spend a great deal of time reviewing and approving how the test will be structured before the test begins, not just looking at the results when the trial is completed. School districts must also take some time upfront to plan to measure cost-effectiveness in the future.

**2 Ensure strong support from the superintendent and school board**

Because it is critical that a district be “designed” to manage based on A-ROI, the superintendent and school board must strongly support the effort. Without such support, it becomes unlikely that consolidated budgets are built, that costs will be keyed to specific programs, that pilot programs will have a control group against which to make appropriate assessments, and that accurate growth data will be available. Only the active support of the superintendent will allow all the necessary pieces to be put in place across the many departments involved.

This effort cannot be championed by the head of data or accountability or the CFO. School boards can help strengthen the effort by letting the data drive their decisions. Academic return on investment is as much a mindset as it is a set of analytical tools, data points, and protocols. A district has to want to make A-ROI a key tool for managing the budget and achieving student outcomes.

**Implementing A-ROI: Overcoming the Obstacles**

**Build A-ROI into nearly every aspect of budgeting, teaching and learning, and central office work**

**Ensure strong support from the superintendent and school board**

**Create a small staff with the skillset and clout to make data actionable**

**Establish new ways of making decisions**

### 3 Create a small staff with the skillset and clout to make data actionable

Even when all the required data is available, simply delivering a six-inch binder of student results and cost figures will not lead to wiser spending. Data is not the same as insight. Making meaning of the numbers is a skill. Not every district has someone with this important skill set. Sometimes the district “data person” is an administrator or central office staff member responsible for submitting data to the state, or is the “assessment person” responsible for compliance. Both are very valuable to the district, but they may not have the needed skill-sets to turn mounds of data into actionable information, which is a key goal of A-ROI. This is the realm of Ph.D. statisticians, cost accountants, or other highly analytical people with training and aptitude for finding cause and effect from statistical data.

These experts must be skilled at running multi-variable regression analyses and ensuring data accuracy and comparability. It is not enough to know that a program is effective; through statistical analysis, a district can learn which elements contributed to success and which types of students benefit most. For example, a dropout prevention program might be effective and cost-effective, and thus worth expanding. However, a deeper look into the data might reveal that it was not helpful for students struggling to learn English or that meeting three days a week was as effective as meeting every day.

These types of skills require specialized training more typically found in college research offices or program evaluation consulting firms than in school districts. Fortunately, this is starting to change. For example, the Strategic Data Project at the Center for Education Policy Research at Harvard University has trained over 100 analysts since 2008, many of whom now work in more than 30 large school districts. The organization Education Pioneers is also attracting and training people with deep analytical skills.

Beyond the obvious benefit of bringing needed skills and experience, these data analysis experts also bring objectivity. In many districts, the director of math, for example, is asked to evaluate the effectiveness of the math program. Certainly, they should be interested in the results, but it is likely they championed the programs that are in place, are friends with the program staff, and may have a subconscious bias towards looking for good news. The bias can grow if it means that a

program found to be ineffective or not cost-effective is terminated or changed significantly. It is asking a lot of one’s staff to ask them to analyze their own work.

One very important thing to remember in bringing in an analyst is that for the analysis to be important, so must be the analyst. They will need access to senior leadership and some clout and respect in the organization as evidenced by their place in the organizational hierarchy and their inclusion in key meetings. At the end of the day, senior district leaders will

need to make hard decisions based on the results of the data. If the data analyst has little visibility within the organization and runs the numbers with little input and feedback from the district leaders, it is unlikely that the results will drive change.

Fortunately, having high-caliber data analysis expertise is not costly. For a typical district of 50,000 students, just one or two highly skilled professionals, reporting directly to senior leadership, can support a robust A-ROI system. This is not to

suggest that simply hiring two people will create the needed culture, but it can provide the analytical horse-power. Effecting the necessary shift in culture is harder, but does not cost money.

### 4 Establish new ways of making decisions

With experts on staff, good data, and support from leadership, all that is missing is thoughtful procedures for incorporating A-ROI findings into the budget decision-making process.

This might include a new budget development calendar that spans more than one school year. Since not every aspect of a district budget can be evaluated every year, planning out a schedule for what gets analyzed two or three years out can be helpful and allow time to create robust evaluation plans. As noted earlier, evaluation plan design is critical and needs input and buy-in from key stakeholders before beginning the review. An end-of-school-year retreat to review the A-ROI data gives time to digest the findings and ask for additional statistical analyses to be run. Evaluating program effectiveness in the midst of budget development tends to decrease objectivity and raise tensions.

Districts might consider adding, at some point early in the budget building cycle, a formal process of program abandonment. Too often, next year’s budget assumes the continuation of all of last year’s programs, plus new efforts. Cuts are only considered to close a gap in funding. With an A-ROI mindset, abandonment is desirable, even if funds are available; ending

**At its heart, A-ROI is a system of identifying winners and losers (things to keep funding and things to stop or change).**



## Data Necessary for Calculating A-ROI

With the right information in hand, measuring A-ROI is fairly straightforward. Getting the required information is the tricky part. The following data can smooth the way.

### Student Data

- Number and names of students in a specific program or strategy
- Demographics and key characteristics for each student (e.g. grade, ELL status, reading level, school, etc.)
- Student attendance in a specific program (If a student doesn't actually participate or moves away, they shouldn't be counted.)

### Cost Data

- Staff costs, fully-loaded (including benefits) that include all funding sources
- Portion of each staff member's time dedicated to a specific program

- Materials, supplies, transportation, and other ancillary costs associated with the program
- Variable support costs, such as leadership or facilities. Only include these if they increased as a result of this program, or could be reduced or redeployed if the effort ended. There is no need to apportion fixed costs.

### Achievement Data

- Since student growth is the key, some form of "before and after" data is required. The data collected must be connected tightly to the goal of the program. For example, a new phonics program should be assessed based on a student's mastery of phonics, not a broader measure such as an NCLB state achievement in ELA.
- Results from a control group or alternative approach make it easier to compare. Did students grow more than those who got nothing extra? Did one approach create more growth than another?

or changing ineffective efforts is a student-centered decision, not just a financial one. Creating a routine for abandonment can help depersonalize it.

As the name implies, data-driven decision-making is a lot about the numbers, but it often feels very personal to those involved. When the data shows that a new math program was no more effective than the old one, it can feel like a personal assault on the director who championed it. District leaders need to create a culture that celebrates knowing what is effective and that regularly ends or modifies programs without devaluing the program leaders. In time, a new cultural norm can develop. No school leader would allow ineffective medicine to be dispensed by the school nurse; the same concern for eliminating ineffective programs would also serve students well.

### Where to begin?

As new programs and efforts are considered, decisions about when and how they will be evaluated should be built into the initial approval process. As we all know, districts already have

most of their spending committed to programs and strategies, and do not have the capacity to analyze everything right away (if ever). Prioritizing which elements of the budget are studied via A-ROI is an important decision.

Each district will have different priorities, but a few key areas for more immediate review might include the following:

- As districts invest heavily in efforts to improve teacher effectiveness, measuring the A-ROI of instructional coaching and professional development can be critical. For example, high-level questions like, "Do teachers who receive coaching in a particular topic raise student achievement in this topic more than teachers who do not get coached? How much coaching is needed to have an impact? Are some types of coaching more effective than others?" This review could also shed light on which individual coaches are more effective than others, while evaluating the coaching effort as a whole. For comparison, the cost-effectiveness of other forms of professional development can be weighed against each other.

- Since the advent of RTI (response to intervention), districts have a wide array of “extra help” offerings from reading teachers, Title I support staff, paraprofessionals, afterschool, summer school, and many more. As discrete programs, they are somewhat simpler to evaluate, and it is critical to ensure that these students in need are in fact receiving effective extra help.
- Given the size and importance of special education and ELL services, these are tempting areas for study. Given their complexity, evaluating aspects or strategies will be more actionable than a global review. For example, does co-teaching or resource room have a higher A-ROI for students with special needs? Is ELL instruction for newcomers more effective and cost-effective in smaller or larger groups?
- Having a robust A-ROI process might allow districts to pilot some more controversial ideas to assess if they are worthy of wider adoption. This could include larger class sizes or trading down – the concept of utilizing non-certified staff in non-core subjects like art or library.

### **An approach and a tool**

In a world of tight resources, persistent achievement gaps, and rising expectations, a rigorous system of academic return on investment is a powerful lever to make the wisest use of limited funds. Districts need to know how much is being spent, how much learning is being achieved for the amount being spent, and how this compares to alternatives, i.e. is there a more cost-effective way to achieve the same or better results? Districts already have their spending committed to programs and strategies, and clearly can’t analyze everything in one fell swoop. However, regardless of what is studied first, with time and practice, districts can build their capacity to do the most good for students with their limited funds.



## GETTING STARTED

## CALCULATING ACADEMIC RETURN ON INVESTMENT: A Powerful Tool and a Great Investment

As budgets shrink, districts can't afford to not know which programs, strategies, and efforts are raising achievement and which are not. Equally critical is the ability to identify the most cost-effective options. Academic return on investment (A-ROI) can provide these answers.

HERE'S HOW TO GET STARTED:

### 1 FIND OR HIRE STAFF WITH THE KEY SKILLS

A-ROI is built upon detailed cost data and somewhat sophisticated measures of student learning. Any effort must start with a few key people with experience and expertise in calculating costs, measuring student growth, and conducting program evaluation.

### 2 SELECT JUST A FEW HIGH-PRIORITY TOPICS

Starting small and staying focused helps ease implementation and helps the district gain comfort and confidence in A-ROI. Assessing just a few topics in the first year is a reasonable expectation.

### 3 USE THE DATA YOU NEED, NOT THE DATA YOU HAVE

Sometimes the data at hand isn't sufficient to provide true costs or meaningful student growth. Don't settle for inadequate data. Build a system to collect the required information, even if it delays the analysis by a year.

### 4 LET KEY STAKEHOLDERS HELP SET THE MEASURES OF SUCCESS

Getting stakeholders involved in helping develop the research and analysis plan upfront helps ensure that the program can be properly assessed later on, and that there will be buy-in for the findings.

### 5 EMPOWER THE PROCESS

Don't let this effort drift into the shadows. It must be nurtured and championed by senior leaders, including the superintendent.

#### *A word to the wise:* PLAN AHEAD

Calculating academic return on investment is easiest when systems to measure both costs and student growth are designed before the activities take place, not after. This includes tracking student attendance in the efforts to be studied, capturing cost data like teachers' time, creating controlled experiments, and conducting baseline assessments. This ensures the right data is available and the program can be assessed accurately.



# CALCULATING ACADEMIC RETURN ON INVESTMENT: A Powerful Tool and a Great Investment



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**I**mplementing a robust system of Academic Return on Investment (A-ROI) can be the foundation upon which nearly all budget, program, and strategic decisions are built. Virtually every aspect of a district or school improvement plan would benefit from a rigorous A-ROI analysis.

While the ideas behind A-ROI are simple to understand, they are challenging to implement in the typical school district. As a mindset, it means weighing both cost and benefit when dollars are scarce, and spending money only on what works. District leaders have been making these tradeoffs since the first

public school opened in Boston in 1635, but for most of this time, the decisions were made based on professional judgment. Formal A-ROI analysis requires student growth data, controlled studies, teacher data, and detailed cost information. Unfortunately, much of this data is not readily available to many district leaders.

Fortunately, A-ROI itself has a great A-ROI. A small investment of roughly \$250,000 a year for a typical district of 50,000 students could help shift and improve the impact of tens of millions of dollars, and be one of the longest levers for district reform. Knowing that a particular program or strategy is costly and ineffective or marginally effective creates more than a financial opportunity to shift funds. Stopping an inefficient program or strategy is an opportunity to provide a better alternative to meet student need – a double victory.

## Lessons from the field

**LESSON 1** Build an A-ROI infrastructure first

**LESSON 2** Design budgets and programs to facilitate A-ROI analysis

**LESSON 3** Incorporate observations into the analysis

**LESSON 4** Be inclusive when designing each study

**LESSON 5** Provide clout to A-ROI staff and results

$$A\text{-ROI} = \frac{(\text{Increase in Student Learning}) \times (\text{Number of Students Helped})}{\$ \text{ Spent}}$$

In technical terms, A-ROI is calculated as shown above. More broadly, it means knowing how much gain students are making because of a given effort and the cost to achieve the gain. Drawing on lessons from the field, an A-ROI process can help districts do the most good with their limited funds.

**LESSON**  
**1**

**Build an A-ROI infrastructure first**

Many efforts to embrace A-ROI seem to falter almost from the start. Excited by the power of the idea, some districts rush to begin crunching numbers before they have assembled the skills, talent, and data required to do the task well.

A difficult lesson learned is not to take shortcuts when implementing this type of analysis. The goal of A-ROI is to make the wisest use of limited funds, which means expanding programs and ending programs, and making other high stakes decisions. If the A-ROI process is not rigorous, then opponents of the change will have ample fuel to resist and slow any changes, thus defeating the purpose. A rigorous A-ROI process requires that districts build a strong analytical infrastructure first. Doing the best you can with the tools, staff, and data available seldom leads to sweeping impact.

The most critical building block to creating the necessary infrastructure is to have staff with the right skill sets. One or more staff members with strong analytical skills and comfort with regression analysis and research design is a strong start, but not sufficient. Staff leading A-ROI efforts also require a deep understanding of schools, school culture, and the particular context of the district. A common pitfall is to anoint a so called “quant jock,” a strong numbers person, who has limited understanding of the nuances of school life and may focus only on the numbers, ignoring the complex realities of a large school district.

For example, one analytically strong but not-too-school-savvy analyst presented a report showing that a former high-growth, high-performing school had recently seen all its reading gains evaporate. It was an important finding for sure, but it was only part of the story. Due to changes in demographics, the school had many empty classrooms; over time, the school became a centralized location for programs for students with severe disabilities. The students who had attended the school all along had continued to make huge gains, but the analyst wasn’t aware of the relocation of special education programs to the school. Although it was an oversight, an unfounded recrimination like this can undermine faith in A-ROI for years.

Some of the most successful A-ROI efforts have been led by former principals who have deep analytical expertise and training. They bring a wealth of experience that heightens their sensitivity to issues like student mobility, redistricting, district policy, and a host of other factors that need to be incorporated into the A-ROI analysis if it is to have impact.

An effective A-ROI team also needs someone with financial savvy and an intimate knowledge of the district’s budget. Academic Return on Investment measures cost effectiveness, not just effectiveness. District budgets can be very misleading to the average researcher. Many of the costs associated with a particular program or strategy are buried within multiple line items and spread across many budgets. For example, if analysts searched the budget for all expenses related to professional development or reading instruction, they would likely miss 90% or more of spending.

One district, determined to build a robust A-ROI effort, formed a cross-functional team including a skilled K-12 data analyst, a building administrator, a finance person, and even a communications professional to help translate findings into a form that would be broadly understood and believed.

Once the right people are in place, the other prerequisite to implementing an effective A-ROI system is having the right kind of

student data. School districts are awash in student achievement data, but many districts lack or overlook the type of student achievement information that can be most valuable for A-ROI.

A data scavenger hunt can be a good start to determining what relevant data already exists in the district. Identifying all the student achievement data in a district takes some legwork. State tests are a key and obvious source, but much more is often available. What reading assessments are used by

**Stopping an ineffective program or strategy is an opportunity to provide a better alternative to meet student need – a double victory.**

K-3 classroom teachers? What kindergarten screening tools (great for baseline data) are used across the district? Do high schools use common midterms and finals? Are common formative assessments given to students? Do most middle schools use the same end-of-chapter math tests? Typically, this data scavenger hunt requires conversations on an individual school basis; some of this information may not live in a centralized database, but is valuable grist for the analysis mill.

The data scavenger hunt is also a poignant reminder that having a nuanced understanding of the district is a must. In one school system, the analysis team based much of its work on the highly respected MAP scores (Measure of Academic Progress by Northwest Evaluation Association) for analyzing various programs and approaches. While the district routinely conducted formative assessments using MAP, many teachers in the district did not align their curriculum to these assessments, often failing to teach what was assessed by “central office.” An A-ROI team holed up in central office didn’t know that most teachers disregarded the official curriculum. When they presented their findings, they were quickly dismissed by many as being not relevant, which in turn made A-ROI seem not very relevant either.

## LESSON 2

### Design budgets and programs to facilitate A-ROI analysis

After a thorough student achievement data scavenger hunt, the list of available information may be long, but lack of relevant data can still be an issue. If return on investment is going to influence big decisions, then it must answer the burning questions facing the district, not just the questions it can answer from existing data.

More than a few districts, for example, focus their analysis on fourth-grade reading. Why? Is it because grade four is a pivotal decision point for their planning? No. It is because the state begins to administer reading tests in grade three, and thus growth scores aren’t available until the end of grade four. If the burning issue is to assess the effectiveness of the new K-2 literacy program, it is K-2 data that is needed – not fourth-grade reading scores.

Not having the right data, including baseline scores, growth, number of students served, student demographics, and relevant costs, cannot continue if A-ROI is to help students and the budget. Districts that are serious about getting the most impact from a return on investment process build A-ROI into how they create budgets, roll out new programs, and plan assessments.

Creating systems to ensure the right data is available for analysis can be done in steps. A common pitfall is attempting to capture costs and measures for every program and strategy in the district, including a multitude of small programs where

change is very unlikely due to collective bargaining rules, state regulations, or context. A number of districts find themselves devoting enormous effort to costing tiny programs, rather than concentrating on just the important ones. A review of the district’s strategic plan and the associated programs and initiatives detailed to implement the strategic plan is a great place for guidance on what is worth measuring. If ensuring all students can read by end of grade three is a district priority, then reading and cost data for kindergarten, first, second, and third grades seem a must; an afterschool, grant-funded civics program can avoid deep scrutiny.

Measuring, evaluating, and managing key initiatives and strategies require building an “A-ROI-ability” into many aspects of how the district functions. Many districts have found it difficult to look back and analyze their top priorities, but they find it relatively straightforward when they plan in advance. This might include using more comprehensive pre-testing to ensure baseline data is available for key grades, subjects, or programs.

One district, determined to have actionable data for all students in key programs, incorporated into their registration process baseline assessments for students who move into the district after the start of the school year. Other districts have shifted to all schools using the same assessments for comparability. For example, in one district, some schools used DRA, others BAS, and yet others DIBELS to measure reading growth. All are good, but settling on one allowed better comparisons and allowed analysis for students who changed schools within the district, a cohort for which the district wanted to carefully track program effectiveness.

Another district made simple changes to enable powerful A-ROI analysis. They implemented first day and last day assessments in reading and math for all students attending elementary summer school. They also required the daily attendance sheets from the program be sent to the evaluation office. Prior to building in these data collection protocols, it was widely assumed summer school must be beneficial and “worth it” to reduce summer learning loss. The pre- and post-tests results were eye opening. Students, on average, made three months gain in reading over the summer, but virtually no improvement in math. The reading gains were biggest for students one to two years behind grade-level, but students further behind barely improved. Marrying the cost data to the various summer programs further revealed that money spent on more days yielded better results than longer days, and that the actual costs per student were double in some schools than in others, with no increase in learning. The higher costs were associated with different staffing models and the number of absences. Not surprisingly, this information changed the following year’s summer programs. A few hours of assessing, turning in daily attendance reports, and reviewing payroll records made A-ROI possible.

For very important strategies, some districts have run controlled tests, randomly selecting some schools or teachers to try a new program or effort, while others serve as a control. The idea of excluding some students access to a program often creates much anguish and strong pushback. “How can you deny students the new ABC program? It’s wonderful!” is a hard question to confront. Two responses have helped reset the discussion. The first is to stress the importance of figuring out if ABC program is actually helping, and the second is to determine whether it helps all kids or just select students; this needs to be determined before the program is rolled out to all students. Reminding staff that the former program, now being abandoned, was once thought to be wonderful as well helps ground the discussion. The other tactic is to conduct a program audit in the district to bring to light the great variation that may already exist. Some schools or staff use different programs based on grants, history, or personal preference. The only difference this time is that the variation is intentional.

In order to accurately assess the cost and benefit of programs, cost data as well as student growth data are needed. Accurate, comprehensive collection of cost data also must be planned for in advance. Traditional district budgets are not designed to facilitate program costing. They are typically line-item budgets that categorize costs by role, not program. For example, at a high school, salaries for all math teachers are grouped together, as would be all special education teacher salaries. Nowhere would the budget indicate that a portion of each line is dedicated to a math remediation program, which is to be reviewed for cost-effectiveness. A bit of forensic accounting is required to identify all teachers participating in the program and prorate their salaries and benefits based on how much of their time is dedicated to the program. A number of districts have conducted large-scale lookbacks to create this type of program cost data. Typically this requires outside consultants and six-plus months of data crunching. Other districts, however, dual code their annual budget, creating program budgets as well as line-item budgets. Each line item is also apportioned to a menu of programs to be costed and tracked. To fully capture all costs, central office staff, like lawyers and accountants, can also track their time and allocate costs based on the major efforts they support.

### LESSON 3

#### Incorporate observations into the analysis

A-ROI is more than just crunching numbers. Having knowledgeable people observe the programs and strategies being studied can make the final data more actionable. To be sure, this type of anecdotal data cannot overwrite the A-ROI findings, but they can add much understanding.

In one district, analysts observed teachers to gauge whether new materials and strategies were being used. When they observed that many teachers had opted, under the radar, to stick with the old materials, corrective action was launched immediately. Relying on a small group of researchers and analysts to monitor implementation across a large district is a daunting task. Some districts embed data collection into existing structures and systems, particularly principal observations and instructional coaching visits. For example, with the growing acceptance of principal walk-throughs, mini-observations and the like, building administrators are making dozens or even a hundred classroom visits a month. By incorporating key program metrics into either the rubric or write-up form, all building administrators can help collect data that will inform program analysis.

A valuable side effect of principals or instructional coaches participating in program review data collection is that it can dramatically increase the effort by teachers to implement the program well, and focuses building leaders on ensuring strong implementation. This interaction between the act of measuring and the result being measured is called the observer effect. The symbiotic relationship of measuring success and achieving success is clear in the case of one district that had invested heavily in an effort for staff to reteach some lessons based on the results of common formative assessments. Having seen no overall increase in achievement after a year, the district decided to analyze the effectiveness of the program on a teacher-by-teacher basis. Such a detailed study required the participation of building administrators, who at first struggled to meet the time demands of this new effort. Only when re-teaching, a key strategic priority of the district, became part of the rubric for classroom observations, could the principals find the time – since it did not take any extra time. They also learned that many teachers struggled to reteach using different methodologies, and therefore used the same less-than-successful lesson again. A-ROI would show that the re-teaching effort had not met expectations, but the data from the thousands of principal observations helped explain why, and guided a reboot of the effort.

### Fortunately, A-ROI itself has a great A-ROI.

**LESSON  
4****Be inclusive when designing each study**

Change, not measurement, is the ultimate goal of A-ROI. Unfortunately, some common approaches to implementing A-ROI focus heavily on getting the measurement side of the equation right, and not enough on the change management issues. Having the right stakeholders involved in A-ROI projects and creating the right momentum can be as important as the findings themselves.

One district learned this lesson the hard way. They hired a Ph.D. statistician from a top university who also had K-12 experience. He conducted a thorough study of the effectiveness and cost-effectiveness of co-teaching. As luck would have it, an unplanned control group existed, since the program rollout had been stopped midway due to funding constraints. A near random group of schools did co-teaching and another group did not. Few A-ROI studies could be better positioned. The results, controlling for student demographics and other variables, were resounding. Despite spending more than \$10,000 per student vs. \$3,200 per student, co-teaching yielded no benefit in student learning over its traditional, lower-cost alternative. However, three years after presenting the findings, nothing has changed. The schools that used co-teaching continue to do so, with no modification to the program, pedagogy or staffing.

This discouraging example is a case of being right, but being alone. One smart individual, working mostly in isolation, designed and conducted a thorough study, but did not have key stakeholders involved in the process. When the results were shared, special education staff and principals, who favored co-teaching, aggressively attacked the validity of the study. It should have included X, excluded Y, and controlled for Z, they pushed back. Whether their concerns were valid or not didn't matter. They believed the study was flawed, rejected the findings, and fought the change.

A different district used an inclusive approach to designing an A-ROI review of dropout prevention efforts. They brought together guidance counselors, principals, staff who run dropout prevention programs, and other key stakeholders who might be impacted by the findings. The researchers asked how the stakeholders would measure success, what data they thought would be relevant and valid, and what factors should be controlled for. The researchers went a step further and probed as to what each person at the table believed was the root cause of dropping out. This was important because it revealed what drove current plan design and what preconceptions would need to be refuted if changes were proposed.

The first phase of the research found that none of the current efforts had reduced dropout rates, and that the district

lagged behind many like-communities in graduation rates. The A-ROI was nearly zero. Change was clearly needed, and the inclusive planning effort would eventually ease the way. The researchers investigated each of the key stakeholder assumptions regarding root causes. The facts showed that most of the commonly-held assumptions were not true. Students dropping out were not disproportionately poor, did not have IEPs, were not significantly impacted by home life (based on a sibling analysis), and did not have lots of suspensions. The researchers were able to identify the true root causes. In middle school, students failing core classes were promoted without consequences; then, in high school, these students were shocked and discouraged to find that this same performance would delay graduation. Disheartened, they would drop out.

While the data was very disappointing to the stakeholders, the new understanding led to rapid change. Just two months after the findings were released, many of the key players, who had been told their cherished programs were not working, instituted major changes to address the true root cause. In fact, many of the changes were implemented by teachers and principals before central office could formally organize new efforts.

Stakeholders' believing A-ROI analysis is valid and accurate is as important as the analysis being valid and accurate. In most cases, it is easier to gain buy-in through up-front participation than after-the-fact persuasion.

**LESSON  
5****Provide clout to A-ROI staff and results**

A-ROI is an important cornerstone to raising achievement, especially in times of limited resources. It is important that the district signals a belief in its importance. In a number of districts, despite strong analytical capabilities, good data, and sound findings, A-ROI has not created large-scale change. In these situations, opportunities were missed because the messengers and their messages were too easily dismissed. Inertia and human nature can tip the balance away from data-driven decisions.

If the bearer of bad news has little standing in the organizational chart, then it is easier to dismiss the findings. Sometimes, out of respect for seniority, other cabinet members will avoid siding with a mid-level researcher against a more senior peer. This power imbalance can turn a data-driven discussion into a referendum on allegiances.

Often the researchers are not even present at cabinet meetings when big decisions are made. There is no one at the table to push back against a senior leader contradicting or whitewashing the results presented in a written report. When



leaders heap uncertainty on research findings, the research becomes ineffective, even if it is accurate.

The districts that take full advantage of cost-effectiveness research and analysis ensure that A-ROI staff and their findings have clout in the district. There are a number of ways to do this:

- Ensure A-ROI staff report to someone influential in the district. If the function lives three layers down below a cabinet level leader, it becomes easier for other cabinet members to overlook findings. Bring the researchers to cabinet meetings to present the findings. When a surrogate, such as a department head, presents the findings, it is hard to answer all the questions and forcefully address any doubts. Bring the researchers back to the table when big decisions are being made. Their voice needs to be heard throughout the decision-making process.
- Build data collection into teacher observations and classroom walkthroughs. Engaging principals in the research signals importance, and deepens buy-in and understanding.
- Create a formal data-review process with senior leaders. Routinely looking at A-ROI data as a cabinet sends the message that performance and cost data influence how decisions are made.
- Minimize anecdotal defenses of spending during budget deliberations. Budget debates are always emotional, but giving airtime to a passionate defense of a program undermines the focus on results and cost-effectiveness. If there is disagreement on a program and strategy, then steer the conversation to “How can we create a study to determine the A-ROI?”
- Live by the findings. Nothing undermines the impact of A-ROI analysis than disregarding the results. If a program or approach is too cherished to change, then it may not be a good place to start a review.

### **Not new, but taken to the next level**

A-ROI is not a new idea. All leaders do this intuitively. They do it often and take it seriously. No district intentionally spends money on programs, strategies, or efforts that are not good for kids and are not a prudent use of limited funds. District and building leaders consistently assess what is working, and wrestle with how best to allocate too few dollars.

A small investment in A-ROI infrastructure and systems, however, can supercharge district decision-making and student outcomes. By providing robust analytical tools, better data, and a process for review, leaders can do the most good for students, despite tight finances.



# SPENDING MONEY WISELY

## Getting the Most from School District Budgets

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This chapter is from *Spending Money Wisely: Getting the Most from School District Budgets* by Nathan Levenson, Karla Baehr, James C. Smith, and Claire Sullivan of The District Management Council. To access this chapter and the rest of the series, please go to [www.dmcouncil.org](http://www.dmcouncil.org). Topics in this series include:

1. **Calculating Academic Return on Investment: A Powerful Tool and a Great Investment**
2. **Managing to Existing Class-Size Targets: Systems and Tools to Staff More Closely to Current Policy**
3. **Adding Precision to Remediation and Intervention Staffing Levels: Data-Driven Guidelines Improve Schedules, Building Assignments, and Workload**
4. **Finding Politically Acceptable Ways to Increase Class Size or Teaching Load: Freeing up Funds for Strategic Priorities**
5. **Strategically Spending Federal Entitlement Grants: Making the Connection to District Priorities**
6. **Ensuring More Students Read on Grade Level: Cost-Effective Strategies**
7. **Improving the Cost-Effectiveness of Professional Development: Reducing Expenses While Increasing Impact**
8. **Rethinking Purchasing: A Strategic Approach to Increasing the Value of Each Dollar Spent**
9. **Lowering the Cost of Extended Learning Time: Creating Financial Sustainability**
10. **Targeting New Investments: Funding a Better Future Despite Declining Resources**

### About the Authors

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### About the District Management Council

The District Management Council (DMC) partners with public school district leaders to help improve student outcomes, operational efficiency, and resource allocation. DMC was founded in 2004 to address the most pressing and important management challenges facing American educators. The trusted advisor to school district leaders, DMC works with districts on these important issues to achieve measurable results. With the firm belief that leadership and management matter, DMC helps to strengthen and increase the managerial capacity of the people leading school districts to systemically improve the performance of the American public education system. To learn more, visit [www.dmcouncil.org](http://www.dmcouncil.org).

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