Effectiveness and Efficiency Framework –
A Guide to Focusing Resources to Increase Student Performance

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International Center for Leadership in Education
Rigor, Relevance, and Relationships for ALL Students

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Executive Summary

Schools throughout this nation are facing two difficult and conflicting challenges:

1. Improve student performance.
2. Deal with increasingly fewer financial resources than in the past.

Unfortunately, both of these trends are not temporary. We will need to improve student performance if our students as individuals, and we as a nation, are to compete successfully in the 21st century global economy. Financially, schools will receive some temporary assistance with the federal stimulus package, but this will provide only modest and temporary relief.

Therefore, schools must take the responsibility to find new and innovative ways to improve student performance with increasingly fewer resources. As we at the International Center continue to look at schools throughout the nation, we have found some great examples of how schools have done just that. To help evaluate how these and other schools have done at both improving student performance and reducing costs, we created the Effectiveness and Efficiency Framework. This paper lays out the details of that framework.

This paper also addresses the difficult process that administrators face in gaining the needed support from all constituencies — from school boards and teacher unions to community groups and parents — in implementing any fundamental change.

Anyone seeking additional information on the framework, the examples of the successful practices described in the paper, and/or the process to go through to gain support for fundamental change, please contact Lindsay Kaufman at the International Center for Leadership in Education. Lindsay can be reached at (518) 723-2064 or Lindsay@LeaderEd.com.

Introduction

How to deal with declining resources and how to continue the push toward improved student performance are the two overriding issues facing schools throughout the United States today. The decline in available resources, in particular, makes education's various support systems, organizational structures, and strategies to improve student performance difficult to manage.

As my colleagues and I travel the country, these two issues dominate the discussion in suburban, urban, and rural America; small, medium, and large school districts; wealthy districts and districts with economically challenged populations; and everything in between. As often happens during times of great challenges, however, there are some innovative and highly successful strategies emerging that we can learn from.

The International Center for Leadership in Education is in the process of:

- analyzing these innovative and successful practices
- sharing them with other districts
- assisting districts to see how these innovative and successful practices might help to address these daunting challenges of less money and the demand for higher student performance

To enable us to analyze and communicate these strategies and practices effectively, as well as develop new ones, we have created a simple guide called the Effectiveness and Efficiency Framework (E/E Framework).

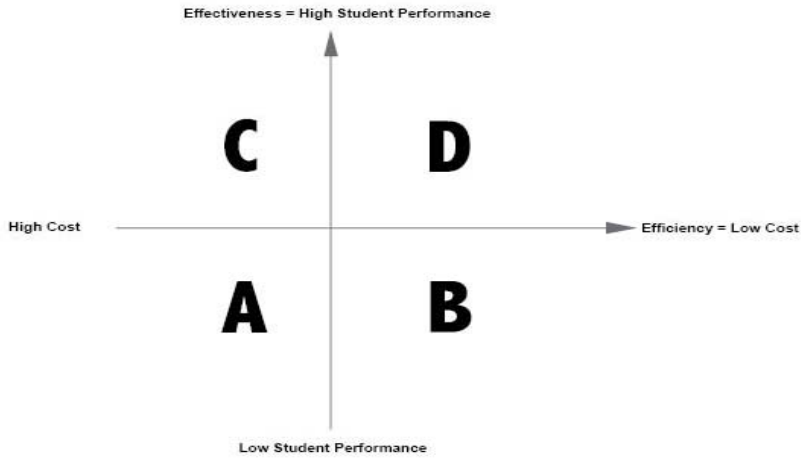
Effectiveness and Efficiency Framework

The E/E Framework is the latest tool developed by the International Center to help educators determine cost (efficiency), how to define student performance (effectiveness), and how to compare cost to performance. Using these analytical strategies, schools can begin to develop a repertoire of cost-efficient and effective practices and procedures that can substantially improve student performance.

The data gathered from the E/E Framework also can be used to guide policy and allocation of resources at the district and state levels. The approaches and structures that produce the greatest improvements for the least cost should be given priority. This is a subtle but important difference from basing the decision-making process on existing categorical funds and collective bargaining agreements. It leads to a reshaping of those agreements and realignment of funding sources.

Those who are familiar with our Rigor/Relevance Framework will find that the E/E Framework uses the same type of four-quadrant schematic.

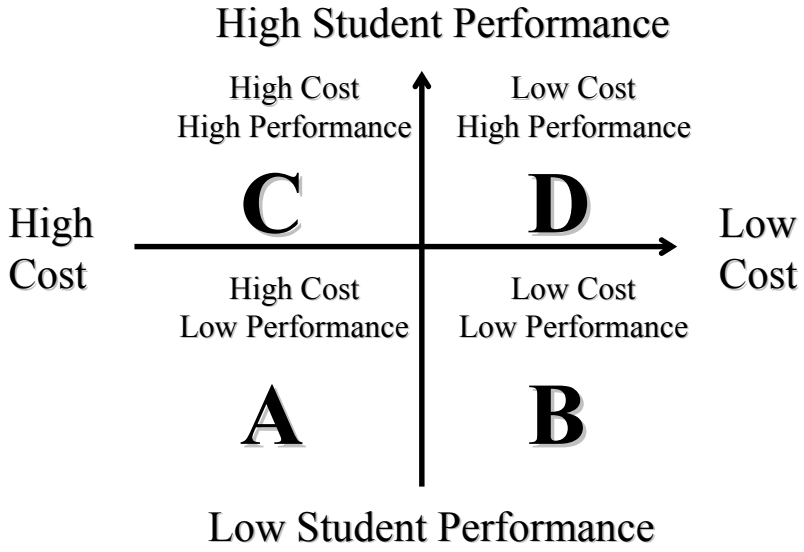
Effectiveness and Efficiency Framework



The horizontal line denotes cost of initiatives, or efficiency. The vertical line represents student performance, or effectiveness, of an initiative. In the framework:

Quadrant A – represents high cost and low student performance
Quadrant B – represents low cost and low student performance
Quadrant C – represents high cost and high student performance
Quadrant D – represents low cost and high student performance

Effectiveness and Efficiency Framework



Initiatives in Quadrant D should be considered and those in Quadrant A should be questioned.

The E/E Framework is intentionally simple. There are numerous intervening variables such as the socioeconomic makeup of student populations, size of school, teacher turnover ratio, and mobility of students that could be factored into a more complex index. Using multiple databases and variables, however, would require multiple regression analyses and other sophisticated statistical treatments of the data. We concluded that using a simpler and more accessible model to guide decision making was preferable to a far more complex approach.

The three central purposes of the E/E Framework are to:

1. guide schools and districts as to which tools, strategies, professional development, procedures, organization of instruction, etc. they should use

2. serve as a vehicle to compile a national repository of best practices for efficiency and effectiveness

3. guide policy formulation at the district and state levels, based upon #2 above

To use the E/E Framework, the following questions must be answered:

- What is student performance?
- How do you measure student performance?
- What costs/expenditures/investments impact student performance directly/indirectly/not at all?
- What is the cost of improved student performance and how do you measure that cost?

Analysis of Cost

There are both fixed and variable costs with any initiative. Educators have a tendency to consider only the variable costs when looking for cost savings. However, the reality is that most districts' payrolls represent 80-90% of the total budget. Therefore, we felt that it was important to include both fixed and variable

costs (including all payroll) in any initiative and thus we factor both costs into each E/E Framework analysis.

Decision Points – Begin with the End in Mind

To use the E/E Framework, a school/district must first determine what is important relative to both student performance and cost. For student performance, we have identified three areas that are of interest to many schools.

- **Core academic learning** is typically measured by state exams.

- **Stretch learning** includes the development of academics that reach far beyond state tests and typically are found in such programs as the International Baccalaureate Program and advanced placement courses.

- **21st century skills** in more recent times have been advocated by a wide variety of business, industry, and other groups and include such areas as problem solving, decision making, the ability to work with others, organizational skills, and communication skills.

For each of these three areas, there are short-term or immediate-term indicators that can be used to measure student success, as well as long-term indicators that come into play once students graduate. For core learning, the short- or immediate-term indicator would be performance on state tests. If that is a priority, and it would be for virtually every district in the country, the district would look at how various initiatives led to improvement in student performance on state tests.

Long-term indicators for core skills would be those that are measured as a student progresses into higher education and/or employment. For example, do they have the literacy skills required for the workplace? The literacy indicator when applied to the workplace is different from the literacy measured on state tests. The type of reading done in entry-level jobs especially is the technical reading in manuals for installing and operating machinery, for example. For success in the workplace, technical reading is critical; for success on the state test, it is not. Therefore, looking at short-term versus long-term indicators in the area of core learning provides a different set of priorities that schools need to think through carefully.

How Is Student Performance Measured?

We recommend using data indicators such as the following.

1. Core Academic Learning — K-8 Sample Data Indicators

- Percentage of students meeting proficiency level of state testing requirements
- Achievement levels on standardized tests/assessments other than state exams, such as the use of Lexiles, DRAs (Developmental Reading Assessment), STAR (Strategic and Technical Assessment of Resources), and Scholastic Reading Inventory
- Percentage of performance-based assessments aligned with state and district standards used in reading, math, writing, and science (portfolio development and student-led conferencing, for example)
- Percentage of ESL/LEP learners and special education students who meet district and state testing or assessment standards

2. Core Academic Learning — 9-12 Sample Data Indicators

- Percentage of students meeting proficiency level on state tests
- Average scores on ACT/SAT/PSAT
- Achievement levels on standardized tests other than state exams
- Percentage of students requiring English/math remediation in college

3. Stretch Learning —- K-8 Sample Data Indicators

- Students making more than one year's growth in literacy
- Amount of interdisciplinary work and projects (problem-based learning)
- Student participation in enrichment courses (music, art, physical education, etc.)
- Completion of three or more years of a foreign language before grade 6

4. Stretch Learning — 9-12 Sample Data Indicators

- Interdisciplinary work and projects (e.g., senior exhibition)
- Average number of college credits earned by graduation (dual enrollment)
- Percentage of students completing career majors or career/technical education programs
- Achievement of specialized certificates (e.g., Microsoft, Cisco Academy)

5. 21st Century Skills — K-8 Sample Data Indicators

- Students holding leadership position in clubs, classrooms, school, sports, etc.
- Emphasis on personal skills, such as time management, planning/organizing work, working as a member of a team, and conflict resolution
- Follow-up survey of middle school students on development of personal skills

6. 21st Century Skills — 9-12 Sample Data Indicators

- Participation in service learning (number of hours)
- Students holding leadership positions in clubs or athletic teams
- Development and assessment of skills in time management, organizing work, leadership/followership, working as a member of a team, and conflict resolution
- Results of a follow-up survey of graduates on development of personal skills

Process

Perhaps the most difficult part of the E/E Framework analysis is creating and implementing a process that will gain support from all key stakeholders, beginning with the school board and the teacher unions. They both need to be part of this process from the beginning.

Let's face it. Creating real change in schools is a dynamic and difficult task. There is no recipe with a list of ingredients and simple steps, no detailed blueprint for schools to follow for success. However, there are lessons that can be learned from other schools. The International Center has worked with schools across the country to identify models, share best practices, conduct research, and support school leaders in facilitating changes that lead to improvement. This work has revealed that schools usually need to address four interconnected questions in order to achieve high academic standards for all students — *why*, *what*, *where,* and *how*. While these questions are interconnected, there is a sequence in addressing them in the following order:

1. **Why** involves convincing educators, parents, and community members as to why a school needs to change.

2. **What** is the content of change, built through a common focus. It involves using good data, research, and best practices to determine what needs to change once people understand why.

3. **Where** defines the location and directions, which involves addressing the present status, agreeing on a common direction, and defining ways to measure improvement in student achievement.

4. **How** is the process of change and involves determining how to change the school once people understand and embrace the *why*, *what*, and *where* questions.

For the end result, all key stakeholders must be brought to the table and agree on the indicators that will be used for both student performance and for costs. The key is to identify data that is clear cut and does not lead to endless emotional debates and posturing.

The International Center has closely followed the work pioneered in Maine by Susan Gendron, Commissioner of Education, and Dr. Angela Faherty, Deputy Commissioner. They have created a seven-step review process that helps districts re-examine the realities of both higher student performance and greater fiscal accountability and establishes a new paradigm in district decision making. The process guides a district leadership team to effectively come to grips with many of the old vested interests, sacred cows, personal agendas, targeted funding sources, and entrenched beliefs about what matters most and then use the basic principles of efficiency (use of resources) and effectiveness (student achievement) to create a new plan for improving student performance. The white paper, "Managing Resources to Focus on Student Performance," describes the process.

As administrators go through the process, they will want to get a few early "wins" for all sides. Doing so will build momentum in ultimately selecting three to five highly successful E/E Framework Quadrant D strategies for improving student performance with fewer resources.

Examples Derived from the E/E Framework

Using indicators listed earlier for both student performance and costs, we have identified a series of successful practices, as well as new strategies that schools and districts may want to consider. The following sections provide a sampling.

Example 1: Coordinate Professional Development with Graduate Degrees

Many baby boomers are retiring because of their age and also because of the numerous districts that are proposing early retirements as a cost savings measure. Replacing them is a growing number of young teachers who hold a Baccalaureate degree but must now obtain a Master's degree and/or permanent certification. These teachers need to receive at least 30 graduate credits, but preferably enough credits to earn a Master's degree. The challenge for them is to teach all day, get in their vehicle to drive to a university for a three-credit hour class, and then return home to focus on homework and papers related to their graduate course. Often these graduate courses prove to have little immediate relevance to what these teachers go through day to day in their classrooms. Furthermore, the cost of such a graduate program, both in terms of monetary expense and time consumption, becomes quite onerous for early professionals in our field.

Instead, districts could form a partnership with an online graduate program focused on the specific skills, tools, and strategies teachers need in helping their students achieve greater academic success. The International Center has partnered with Penn Foster, the second largest provider of online courses in the country, in developing such an online graduate program, which could be tailored to provide teachers with specific tools and strategies based on the district's priorities and cultural background

This online graduate course, taught by the International Center's master teachers and senior consultants, is based on a repository of best practices from the most successful schools across the nation. The cost savings from this program would be substantial both for the district and the individual teacher. Improvement in student performance could be dramatic if the program is well focused.

The following scenario is one way to consider the effectiveness and efficiency of such an online graduate program initiative:

- The initiative, in which teachers can choose to participate but are not required to, replaces the school's mandatory professional development days with a three-credit-hour graduate course that teachers could take onsite.

- A three-credit-hour course at a graduate school is about 45 contact hours over the course of a semester.

- If we assume a professional development day to be six hours (which is longer than most of them truly are), the three-credit-hour course would equal to seven and one-half days of professional development.

- The cost of graduate programs presently ranges from about $300 per credit hour ($900 per course) in some state universities to as high as $1,500 a credit hour ($4,500 per course) in some private colleges. Spread that over the course of an entire Master's program and the teacher will pay between $10,000 and $30,000.

- Assuming the three-credit-hour course is 45 hours, it equals 7.5 days of professional development (six-hour days). Therefore, the course is from $120 per day (7.5/$900) to $600 per day (7.5/$4,500).

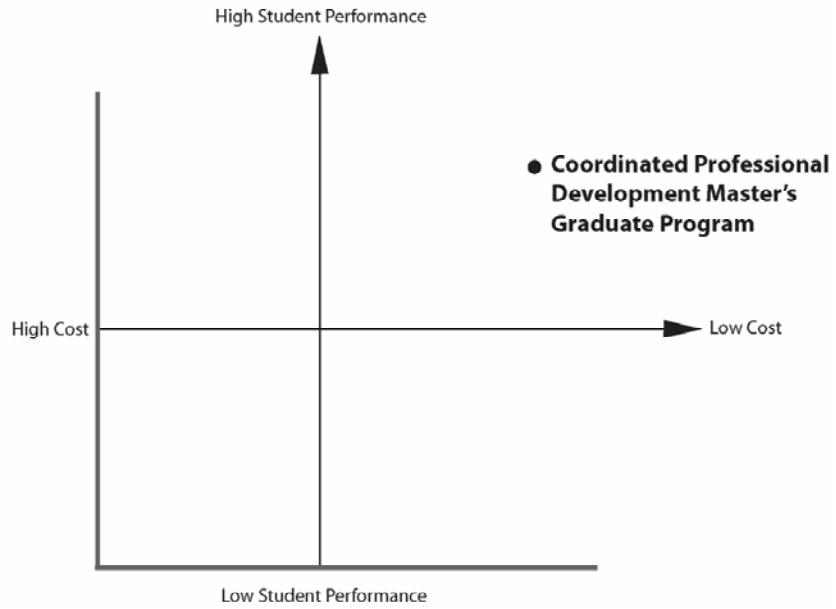
- The cost of the online program is about $150 per credit hour ($450 per course). This equals about $60 a day. Thus, anywhere from $60 (120/60) to $540 (600/60) less expensive per day per teacher.

- Because the graduate course is not mandated (it replaces the mandated professional development days), the district does not have to pay the teachers to attend. On the other hand, if it were part of a mandated professional development program, the district would have to pay the participating teachers' daily salaries. Assuming a teacher made $36,000 a year with salary and benefits, the district would save $200 per day per teacher in just salary alone.

- The district could look at its collective bargaining agreement and find a way to provide this as a fringe benefit to teachers as a condition of their employment until they get a Master's degree or permanent certification in which case the teachers would not have to pay income tax on any of this professional development program.

- The Penn Foster/International Center graduate program would be tied to the nation's most successful schools and most successful practices within those schools. Thus, it could provide relevant, up-to-date research and practices for teachers. This is something quite different than often found in today's graduate programs.

- There is no travel time or cost as now exists in graduate programs for most teachers.



Example 2: Slightly Increased Class Size with a Focused Professional Development Program in Place

An increase in class size by one student will save a district a considerable amount of money by reducing teaching staff. Yet, this increase has no measurable impact on student performance. On the other hand, a professional development program that helps teachers focus on the most critical standards and provides them with high-quality instructional materials will have a dramatic impact on student performance. Consider the following example.

1. Increase class size for a district from 25 to 26 students. This would be a 4% increase in the average class size.

2. Assuming that payroll represents, at a conservative estimate, 80% of total budget, the change in class from 25 to 26 would be a 3.2% savings (80% of 4%) if all the employees were instructional staff. Obviously, they are not, so assume for this example that the instructional staff make up 80% of the 3.2%, which now equals a little more than 2.5% of total budget savings.

    - Change in class size from 25 to 26 = 4% increase
    - 80% of budget goes to payroll: 80% of 4% = 3.2%
    - 80% of payroll goes to teachers/instructional staff: 80% of 3.2% = 2.56%

3. If a district had a budget of $20 million and were to save approximately 2.5% by increasing class size by one student, the net savings would be $500,000.

4. Use the savings to incorporate a laser-like focus on professional development that would include the following:

    - Make the professional development activity voluntary rather than mandated. Mandated professional development requires districts to pay teachers to attend; if it is voluntary, teachers use their own time to attend.

- Provide teachers who wish to participate a copy of the International Center's Curriculum Matrix, which will provide them with concrete data on what standards to focus their instruction on.

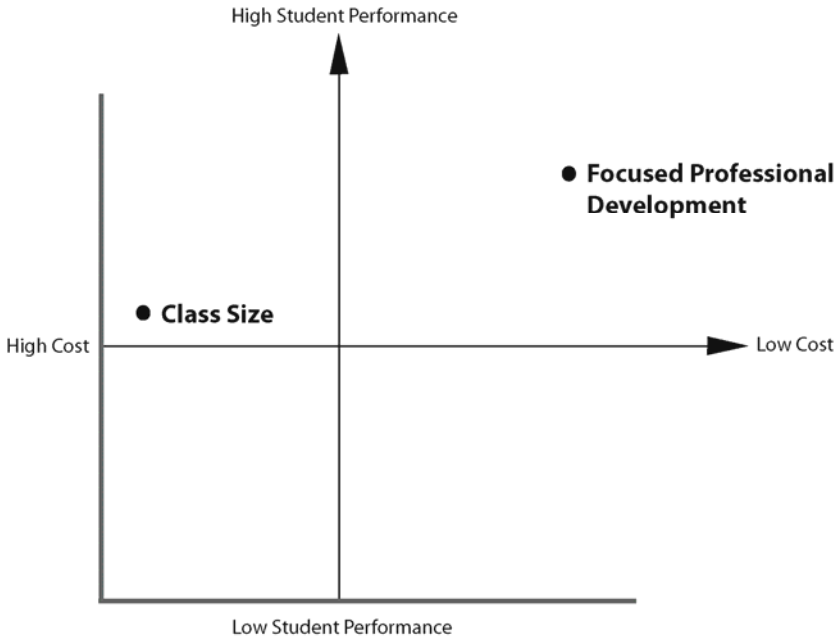
- Give the teachers high-quality instructional practices, such as the International Center's Gold Seal Lessons, which correlate to the standards that have the highest probability of being tested and that students need for success beyond school.

- Provide high-quality professional development for two days around the above information.

- As a result of implementing the previously mentioned professional development strategies, the top one-third of the faculty is pleased to participate, even if it was on a voluntary basis on their own time because of the value of the information they now have for improving classroom instruction.

- The middle one-third of faculty may be somewhat interested. The bottom one-third probably would not participate. Without the bottom one-third participating, the top one-third receives a more positive professional development experience because of the attitude of the participants, the professionalism, and commitment to excellence.

- Such a professional development program will cost a district about $25,000 to a maximum of $50,000. This is one-tenth to one-twentieth of the $500,000 cost of the change in class size by one student as outlined above. Furthermore, such a professional development program will have a substantial impact on student performance in the classes taught by the teachers who participated in the program. Thus, a major positive impact on student performance has taken for approximately one-tenth to one-twentieth the cost of the increase in class size by one student.



Example 3: Initiatives Based on Empowerment

Schools that are delivering a highly effective program to improve student performance have recognized the following:

- The present overregulation and testing requirements have killed the spirit of teaching for many classroom teachers. This, in turn, has lead to student disengagement. When a culture of disengagement exists, high student performance is difficult to achieve.

- All members of the staff must carefully consider the fiscal implications of any action or initiatives they undertake. They must be empowered to feel that they have an impact on how to most effectively use resources to impact student performance.

- When the administration takes a basic philosophy that it will provide top-down support for bottom-up reform, student performance generally improves.

The teachers involved in an empowerment-based initiative do so on a voluntary basis. Typically the top one-third of the staff are very interested and jump at the opportunity initially. The middle one-third cautiously watches with interest. The bottom one-third refuses to participate. By incorporating a voluntary approach, the top one-third needs little motivation. The initiative itself motivates them. It also prevents the administration from having to fight the many battles with the bottom one-third of teachers. They simply do not participate initially.

Organization of the Initiative

- A faculty team volunteers for the initiative. Teams can be as few as two teachers, such as a math and a science teacher, or be composed of many members, which might include a teacher in math, science. English language arts, social studies, art/music, CTE, special education, and physical education.

- The team members have the same average class size as the rest of the teachers in their building.

- The administration and team of teachers agree on how student performance will be measured. The most typical way to measure it is through state test scores. Other indicators include SAT scores, ACT scores, International Baccalaureate Programs, number of students who participated in four years of a foreign language, students taking four science lab courses, student attendance, and student dropout rates.

- The team is given the total budget for the selected group of students. The budget consists of both fixed and variable costs, which includes salaries and fringe benefits.

- The team agrees with the administration that the students in this initiative will at least meet, but preferably exceed, the performance anticipated for the students they have. This will require considerable discussion by looking at individual students and predicting how they would do on the agreed-upon measures of success. If, for example, the performance indicator is state test scores, then both the team of teachers and the administration must agree on what the typical average state test score will be for this group of students. They then agree on the test score that will serve as the new base to measure student growth.

- The group of teachers will receive 50% of cost savings if it maintains the present expected level of student performance for the students. If it can improve student performance by 10%, or any other percentage mutually agreed upon by the administration and the team, it will receive 80% of any cost savings.

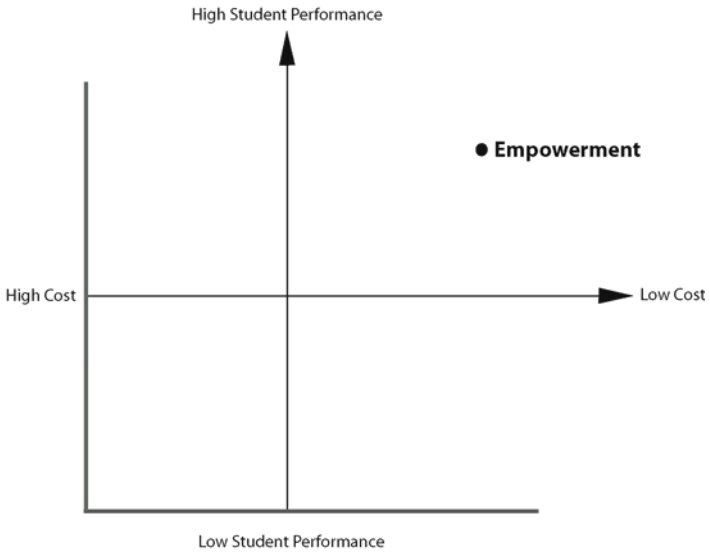
Team Actions

Given the above charge, the teachers become interested in improving student performance and in working together. As the math teacher attempts to prepare the students for the state test, for example, he or she asks the science, physical education, CTE, and the art teacher to reinforce the math concepts being taught in an applied setting. Thus, multiple teachers in a wide variety of settings are working on developing student proficiency for the most important standards.

The teachers then begin to think about how they can reduce the cost of effectively teaching their students. One of the quickest areas they look at is class size. They typically go to the administration to discuss adding additional students to their group. This increases their class size and they get credit for the savings for that group of students. As we know, increasing class size by one, two, or even three students does not have a measurable impact on student performance, but it has a dramatic increase on cost savings.

The teachers increasingly become interested in obtaining new data that will help them measure performance indicators that are critical to the agreed-upon student performance goals. As this happens, the administration could offer a copy of the International Center's Curriculum Matrix, which crosswalks state standards to state assessments in English, math, and science. They become far more focused in their instruction. The practical reality of what students need to know and be able to do begins to trump the debates that permeate faculty meetings across the country.

Moreover, the teachers begin to look at technology as a more effective way to teach the standards most critical to improve student performance.



Some E/E Framework examples for increasing efficiency and decreasing costs in particular areas follow.

Example 1: **Interdisciplinary Department Chairs**

This initiative calls for the elimination of the present department chair people and the creation of interdisciplinary department chairs. It has minimal impact in terms of reducing cost, but it can lead to dramatic improvement in student performance.

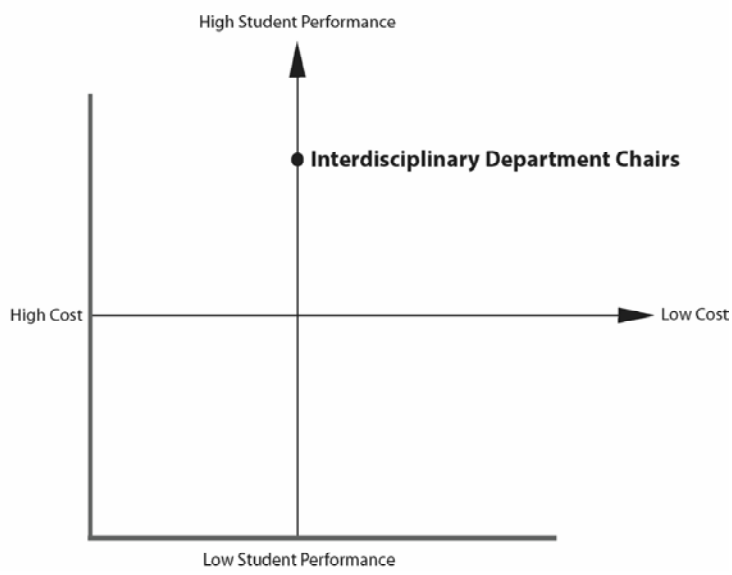
The staff in middle schools and high schools are reorganized around interdisciplinary departments. Core subject matter teachers in math, science, social studies, and language arts are the anchors of these

interdisciplinary departments. Physical education, art/music, CTE, special education, ESL, and other teachers are added to form a truly interdisciplinary cadre of educators. The teachers are given a common group of students. Often, these students and the teachers stay together for multiple years. Teachers are then evaluated based upon how well all the students in the interdisciplinary team have done and how they as individual teachers contributed to student and team success. The key to success in this approach is in the faculty evaluation process.

In this type of initiative, teachers soon realize that they are responsible for teaching not simply in their narrow subject matter area, but in the application of knowledge across disciplines. When a core-area teacher is covering a standard that may be on the state test, he or she immediately reaches out to teachers in the non-core areas to encourage them to integrate the application of the standard to be tested in the core discipline. Thus, students are given the same standard taught by multiple teachers in multiple instructional settings. They get both academic rigor and relevance by being exposed to a broad spectrum of examples in different subject areas. Thus, student performance improves.

Teachers begin to push for common planning periods so that they can more adequately integrate their disciplines. They also begin to share information and background about individual students. All of us who have been in education know that certain students connect with some teachers better than others. The sharing of the information, background, and support of students through the interdisciplinary team becomes important in assisting all students to be academically engaged and successful.

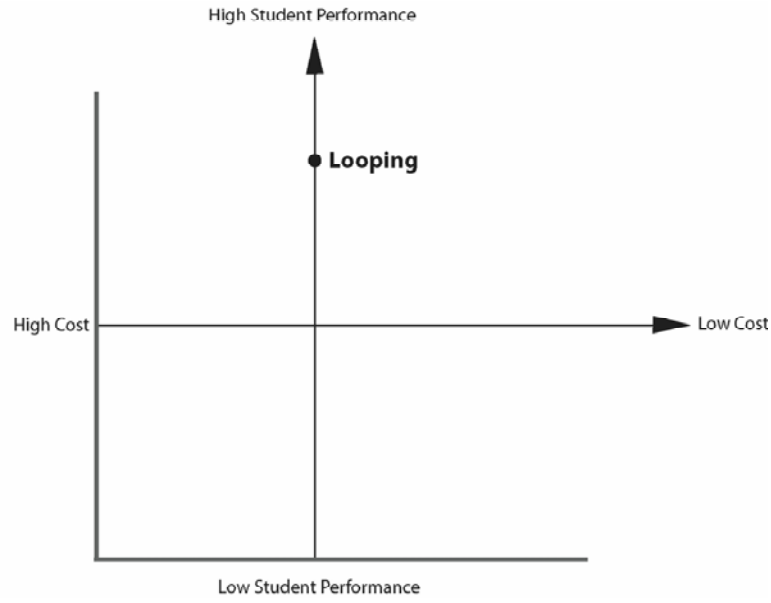
There is some cost reduction in this initiative. Often, the interdisciplinary teams incorporate a larger number of teachers than individual departments traditionally have had. Thus, fewer chair people are needed, which provides some reduction in cost. In addition, as student performance improves, it becomes increasingly obvious that larger class sizes are possible if the teachers and districts work together. The biggest impacts likely are on the special education and ESL students. As teachers take a more active interest in students, more students are able to be declassified, which has a positive impact on the school budget.



Example 2: Looping

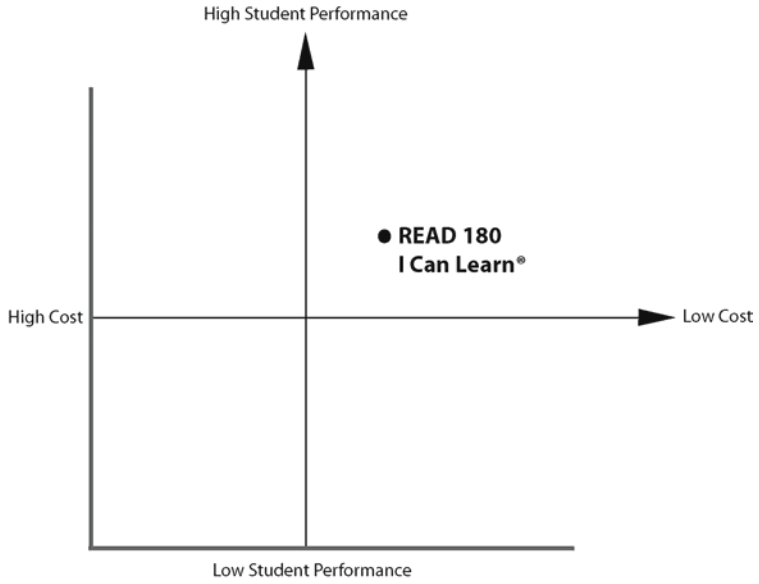
One way to improve student performance is through the looping of teachers from one grade to the next with the same group of students. This technique often is used in elementary school, but high-performing middle schools and high schools have found a similar positive impact in looping.

Under this scenario, schools encourage their teachers to be involved in looping. They move from one grade to the next with the same group of students. Innovative schools have looped middle school teachers from 8th grade into 9th grade. Research clearly shows that student engagement begins to drop precipitously in 9th grade, often leading to dropouts. Looping the 8th grade teachers into 9th grade provides an important anchor for these students who are transitioning from middle to high school. The teachers loop back to 8th grade the following year and pick up another group of students. There are clearly better 8th grade teachers in that following year because of what they have learned as 9th grade teachers. They know what the students need to become successful freshmen. An initiative such as this leads to an increase in student performance at no additional cost. In other words, there is no increase or decrease in cost, but an increase in student performance.



Example 3: Technology

Online and /or computer-facilitated instructional programs such as *READ 180* and I CAN Learn, while having upfront costs initially, will save costs in the long term. Schools that have used *READ 180*, for instance, have seen dramatic improvement in student performance and have allowed special needs and ESL students to be declassified, leading to a substantial savings because the regular education program is much less expensive than special education or ESL services.



Conclusion

Educators can anticipate an infusion of federal economic stimulus dollars, but these one-time funds will be only a partial and temporary solution to the fiscal challenges facing districts and schools as they seek to improve the performance of all students. Schools and districts must find ways to allocate their limited resources to the tools, strategies, and procedures that will result in the *most* efficient and effective use of available dollars. To help schools achieve this difficult task, the International Center has developed the Effectiveness and Efficiency (E/E) Framework that can be used as part of a cost/benefit analysis in measuring student performance and cost reductions.

Several examples have been outlined in this paper to show how the E/E Framework can be used to analyze strategies in the effort to increase student performance while reducing costs or keeping those costs at a minimum. In using the Framework, educators are forced to answer three questions:

- What is student performance?
- How do you measure student performance?
- What is the cost of improved student performance and how do you measure that cost?

As schools and districts struggle with the challenges of raising student academic performance during a time of increasingly declining resources, it is imperative that they encourage everyone in the organization to look for different approaches to effect change. These approaches involve focusing resources and accountability around specific tools, strategies, professional development, procedures, and policies that can be documented to improve student performance. This is a subtle but important shift; it means using student learning as the basis of making funding decisions, not what exists in terms of current programs. It is a shift from a focus on inputs (programs) to a focus on output (student performance). At the end of the day, all key stakeholders — administrators, teachers, parents, and community leaders — need to be part of the process of equipping all students with the knowledge and skills they need to be productive citizens and lead successful lives.

Visit www.leadered.com/MaximizingResources.html for more information about the International Center's Effectiveness and Efficiency Framework.

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