

**USING THE EVIDENCE-BASED MODEL IN
STRATEGIC BUDGETING:
EXAMPLES FROM FOUR DIVERSE OHIO DISTRICTS**

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INTRODUCTION

Finding a way to meet Ohio's constitutional requirement to "secure a thorough and efficient system of common schools throughout the state"¹ has been a major focus of educational policymakers for over two decades. Since the state's *DeRolph* case began in 1991, school funding has been at the forefront of educational policy in Ohio.

A major policy shift occurred in 2009 when the state enacted the Ohio Evidence-Based Model (OEBM) as its new approach for estimating and distributing the resources needed to fund the state's schools. The OEBM uses a school funding approach known as the evidence-based model to estimate an adequate level of resources for schools for them to ensure that most public K-12 students will meet the state's academic standards. In short, the model is designed to help schools fund the strategies most likely to help students learn.

Intended as a long-term solution, the OEBM has not been fully implemented, due to budget limitations and other issues around the policy changes it mandated. What's more, the future of the OEBM is in some doubt as a new governor takes office and a deepening fiscal crisis squeezes the state budget. Even so, the OEBM continues to offer a set of strategies that school districts can use to organize schools to support improved instruction and higher levels of student learning.

As part of the Ohio Smart Schools initiative, Lawrence O. Picus and Associates, the developers of the evidence-based model on which Ohio's plan is based, worked with four Ohio school districts to develop a strategic budgeting tool that they can use to better understand both how resources are currently allocated and what changes could organize schools in more efficient and effective ways to improve student performance. One purpose was to help local educators and communities find ways to stretch their education dollars and improve student achievement without raising costs.

Helping schools operate more efficiently while continuing to focus on improving student learning is a new, and often thought to be insurmountable, challenge for schools and districts. Yet research-based knowledge about what works to improve student performance today can be used to establish operating efficiencies that will enable schools to focus on learning even during times of reduced educational resources. The evidence-based model introduced in 2009 offers a framework for how to deploy staff and fiscal resources in schools for strategies that research has shown will help all students meet state standards.

This document describes the OEBM strategic budgeting project in depth, including how it was developed with the four participating school districts and how they used it to better understand and focus educational resources on improving student performance. It will also explore how the budgeting tool could be used by other districts to make their own strategic budgeting decisions.

¹ Ohio Constitution, Art. XI, Sec. 2.

THE OEBM STRATEGIC BUDGETING PROJECT

This project explored how Ohio's Evidence-Based Model (OEBM) for school funding could be used by districts and schools to engage in strategic, zero-based budgeting.² Four very different districts took part:

- Cincinnati Public Schools, a large urban district
- Olentangy Local School District, a large suburban district
- Morgan Local Schools, a modestly sized rural district
- Lorain City Schools, a fiscally challenged district close to Cleveland facing the challenges of an urban district.

The overarching goal of this project was to help each district realign its existing resources and staff to implement a more effective and efficient instructional improvement strategy and to develop a method to help other districts across the state do the same.

A computer-based strategic budgeting tool designed around the OEBM was provided to help the districts better understand the organization of their schools and resources and to focus staff and fiscal resources on strategies to improve student learning. Because the OEBM included a 10-year phase-in for some components and because some components were, in our view, underfunded, the budget tool was modified in a few areas to include more resources than are specified in the OEBM. These include things like central office staffing and guidance counselors.

The budget tool uses the concepts of school improvement embedded in the OEBM to help schools rethink their strategies for boosting student performance and identify ways to reallocate resources to strategies that would produce greater student learning gains.

School Districts

A central task of this project was to develop a computer-based budgeting tool that would both enhance school district understanding of the basic principles of the Evidence-Based funding model and how it could be used by districts and schools to more strategically allocate resources to support more powerful education improvement strategies focused on boosting student learning. KnowledgeWorks, which funded the project, identified four districts that represented as wide a range of circumstances as possible:

- Cincinnati: A large urban district in Southern Ohio with over 32,000 students, and a wide variety of magnet and alternative school programs.

² Zero Based Budgeting approaches the budget process by creating each year's budget through a process that "starts from scratch" for each program or function. If resource needs exceed budget availability, reductions are made program-by-program based on pre-determined priorities. It would be hard to make wholesale reductions in education programs in schools, but the strategy can be used to sidestep the typical incremental approach to budgeting in most public agencies, where the starting point for the next year's budget is the current budget level adjusted for inflation.

- Olentangy: A large suburban district just outside of Columbus, which is the fastest growing district in the state, enrolling some 16,000 students.
- Morgan: A relatively small rural district located in Southeastern Ohio, with just over 2,000 students.
- Lorain: A district of 7,500 students located approximately 30 miles west of Cleveland along Lake Erie. In recent years, the district has experienced considerable enrollment decline along with deterioration in its industrial and therefore its local property tax base.

Demographic and student performance data for each of the districts in 2009-10 are provided in Tables 1 and 2.

**Table 1
District Demographic Data**

District	Enrollment	Percent of Students (%)		
		Free and Reduced Price Lunch	ELL	Students with Disabilities
Cincinnati	33,179	71.0	4.0	18.0
Olentangy	16,178	2.0	9.0	9.0
Morgan	2,154	0.0	55.0	14.0
Lorain	7,652	82.0	4.0	4.0

Source: Reported by districts for 2010-11

**Table 2
District Schools (2009-10)**

District	Total	High Schools	Middle Schools	Elem	Other	Number of Schools In School Improvement*
Cincinnati	58	14	0	38	6	39
Olentangy	21	3	4	14	0	0
Morgan	5	1	1	3	0	1
Lorain	17	1	3	10	3	15

*School Improvement is a designation given to schools that do not meet their target goals under NCLB for two or more years.

source: Reported by districts and district report cards available at <http://webapp2.ode.state.oh.us/reportcard/archives/Default.asp>

Study Process

Researchers from Lawrence O. Picus and Associates met with representatives of the four districts on four occasions. We initially met individually with teams from each district to build an

understanding of the district and its goals and priorities. Our second and third meetings focused on development and use of the Strategic Budgeting Tool and the theory of action embedded in the Evidence-Based Model. Our fourth meetings took place with the districts individually and focused on specific applications of the model to each district. A detailed description of our study process is included in Appendix A of this report.

One goal of working with the districts was to identify major instructional program elements that needed to be addressed directly to ensure program effectiveness. Three major areas where it was possible to find staffing efficiencies that enable resources (staff) to be reallocated for other strategic student learning priorities were identified:

- a. Finding time for teacher collaborative work. These districts, as well as many across the country, have decided that having teachers work in collaborative teams is a prime strategy to boost student learning. The goal for each district was to find at least three 45-minute periods a week with the ambitious goal of providing five 45-minute periods a week for teacher collaborative work, and to do this using current core and elective teachers in revised school schedules, with no extra staffing needs.
- b. Reviewing elective class offerings – both the number of electives offered and the class size of those electives. Most districts agreed that elective offerings had become excessive and there were opportunities to reduce– not eliminate – electives and use the additional staff time to meet other needs. The challenge here was to reduce the number of electives and/or increase the class size of electives to at least the average for core classes, recognizing that both of those actions might include changing the number of periods in the school schedule.
- c. Reviewing the strategies for providing extra services for struggling students, which included all services provided under federal Title I, Bilingual, and at least the learning disabled portion of special education, as well as any other services provided with local and state funds. Redesigning the way struggling students receive extra help is an area rich in possibilities for improving both the structure of the way struggling students are served and the staffing requirements for those services, thus creating greater efficiencies in resource allocation.

OEBM assumes a tiered Response to Intervention approach to services for struggling students, first giving all students Tier 1 high quality and effective instruction in the core program and in regular classes. Struggling students then receive Tier 2 interventions or extra help in groups of three to five, followed by one-on-one tutoring for a small percentage of students. Some combination of extended day tutoring and/or summer school programming can also be used to help struggling students. If needed after all other support options have been found to be inadequate, the OEBM supports a Tier 3 placement in special education along with an IEP for the student.

As described below and in Appendix A, we used the Strategic Budgeting Tool to work with districts to identify resource reallocation strategies that would help them improve student

performance across their individual districts. Each district was provided with a copy of the model to use in future strategic planning for budgeting and resource allocation.

INITIAL APPROACHES TO IMPROVING STUDENT PERFORMANCE

Any attempt to help schools use their resources more effectively requires a deep understanding of each district's approaches for improving student performance, along with its goals, strategies and priorities. This project explored each district's goals, curriculum and instructional approaches, professional development, data-based decision-making and leadership.

Goals

Across the four districts goals for student performance were generally diffuse and could be considered "less than ambitious." Only one district had specific, numeric goals. In the other three, stated goals were generally to "improve test scores" or "make AYP" (Adequate Yearly Progress as established under the No Child Left Behind Act). Only one district had goals for student performance at the advanced and accomplished levels, and the same district had a goal to have each student perform above a predicted value-added³ number and to gain more than one year in learning during any one academic year. The latter goal, arguably should be a goal for students in urban districts, most of whom now perform below proficiency.

When asked for more specific goal statements, district teams were able to identify more concrete student performance goals that their systems had adopted. Despite this, when first asked about goals, three of the district teams simply did not articulate a set of clear, specific, numeric goals that were driving their districts' education improvement programs and strategies.

Overall Theory of Improvement

The districts had multiple theories of improvement, some explicitly stated and others more implicit.

The preeminent theory was to have class sizes as small as possible, generally less than 20 to 25 students per class. One district used large portions of funds from the federal Title 1 program to provide small class sizes school wide, particularly in its K-8 elementary schools.

The urban districts had done some school reconstitution, so another theory of improvement was to replace the principal and several teachers in consistently low-performing schools.

One district had an implicit talent strategy – "If you have a quality teacher, everything else follows," so district leaders focused on hiring the best teaching staff they could find.

Representatives of several districts spoke about tracking student progress in short cycle assessments and providing appropriate interventions – but later observation found that intervention staff resources generally were thin.

³ Value added analysis is a recently developed methodology to assess student learning and progress. The method uses a student's past performance to compare their actual performance with a prediction of how they would be expected to do based on that past data.

Finally, several individuals across the districts stated that to improve student performance, a school or district needed a rigorous curriculum and aligned textbooks, intensive and ongoing professional development with instructional coaches, and high quality teacher and principal talent. This represents a more comprehensive articulation of improved instruction and learning that aligns with the theory of improvement embedded in the evidence-based model.⁴

Class Size

Class sizes consumed considerable resources in most districts, although in one district that had experienced significant fiscal stress class sizes had grown to the order of 25 to 30. In one district, the goal was to have class sizes in grades K-2 be less than 22. That district provided an instructional aide for any K-2 class where enrollment exceeded 22 students and divided students into two classes when enrollment reached 26 or more. This approach results in large differences in the resources available in each class when there is an enrollment change of only one student and is very expensive.

Other districts sought to have classes of less than 20 students in K-3, between 22 and 25 in grades 3-5 and average class sizes of 25 in middle and high schools. The class size ratio of 25 to 1 at the middle and high school level matches the class size included in the OEEM.

All four districts viewed small classes as critical to an effective school improvement strategy. Interestingly, this strong support for small classes waned as the districts saw the performance potential and cost effectiveness of other strategies embedded in the OEEM.

Approaches to Reading and Mathematics

When asked for specifics about their approach to reading and mathematics instruction, the district representatives indicated strong support for “guided” or “balanced reading” with short whole class lessons, multiple student groups within classes, and heavy use of leveled books rather than a single textbook. In this approach, the four districts may be typical of Ohio, which is a center of Reading Recovery and Balanced Reading programs in the country, as compared to the more systemic and structured, and, many would argue, research-based programs in Reading First.⁵ Despite the political issues tied to implementation of Reading First, the program itself is strongly based on the National Institute on Child Health and Development research on elementary reading programs that are effective.

One district had adopted the structured Success for All reading program. This program emphasizes phonemic awareness and phonics, along with reading comprehension and writing.

⁴ Odden, Allan. (2009). *Ten Strategies for Doubling Student Performance*. Thousand Oaks, CA: Corwin Press; Odden, Allan and Sarah Archibald. (2009). *Doubling Student Performance...and finding the resources to do it*. Thousand Oaks, CA: Corwin Press.

⁵ Felton, Rebecca. (2010). *An Overview of Reading: Reading Problems and Effective Reading Programs*. Unpublished manuscript prepared for Lawrence O. Picus and Associates

There was no consistent approach to mathematics across the districts. One district that had used Everyday Math for several years dropped the program because teachers argued it was too complex to teach – despite having experienced significant gains in student achievement growth during the time that math program was used.

Data-Based Decision-Making

The term data-based decision-making, a key concept in current education thought, had many different meanings within and across the districts. The most consistent approach to data-based decision-making was the use of benchmark assessments – given every six to nine weeks – to monitor student performance and direct students who were struggling into interventions (which was somewhat confusing as the districts had thinly resourced staff for interventions).

There was little mention of using the student data to refine and improve instructional strategies, even though many labeled these benchmark assessments as formative assessments. Formative assessments are given on a short-cycle basis – every two to four weeks or less, and used primarily for improving instructional strategies before they are deployed. Benchmark assessments are given at longer intervals to track student progress and as triggers for intervention help. Across the country, however, the practice is common of administering benchmark assessments, but calling them formative assessments, and then using those assessments to place students into interventions often with little consideration of how the assessments could be used for instructional improvement.

Various district team members discussed developing their own short-cycle assessments, even though several sets of such assessments are available commercially. Adopting some version of commercial formative or short-cycle assessments would reduce the time needed to acquire a battery of formative and benchmark assessments that could be used as the foundation for data-based decision-making.

Professional Development

The four districts shared a strong belief that intensive, ongoing professional development was needed and that the district should strengthen and expand its professional development programs. Further, most stated that existing professional development was focused on core subjects such as reading, mathematics, science and writing, which differs from considerable research in the past showing that too often professional development is not focused on these key, content areas.

Considerable differences in the actual use of instructional coaches were noted, though all districts stated that good instructional coaches are an essential part of a comprehensive and effective professional development program. Some instructional coaching positions were funded in all four districts, and most wanted more coaches. One had already adopted a “whole school design” – Success for All – that required at least one instructional coach in each school using the program. As a result, that district had already reallocated resources for these positions.

One district reported an unsuccessful experience with instructional coaches. That team said that each school had chosen the individuals to staff the coach positions and often selected senior,

experienced teachers, not all of whom had been effective, nor proved to be good at coaching other teachers. This led to a retrenchment in coaching positions even though district leaders knew that good instructional coaches were key to both good data-based decision-making and overall instructional improvement.

Collaborative Teacher Work and School Schedules

There was strong support for finding time for teachers to work in collaborative teams, but effective teacher collaborative teams were just beginning to be implemented and used. Several of the four districts had teacher teams, but they often met only once or twice a month. In those districts the teachers had not yet found the time to work collaboratively on curriculum and instructional issues several times each week, although that was a goal for all four districts. One district had reorganized the high school schedule into a four blocks of 90 minutes so each teacher would have 45 minutes a day for individual planning time and 45 minutes for collaborative work in teacher teams. This district had increased class size in high school to provide this additional time for teachers. The district and its teachers valued time for collaboration over modestly smaller classes.

Most districts provided each teacher – elementary, middle and high school – with 200-225 minutes of individual planning time a week – and teachers were reluctant to give up individual plan time for collaborative work. Over time in other districts, this resistance often diminishes once collaborative teacher teams work effectively. However, these four districts needed to find additional time for collaborative work to help demonstrate its value to teachers. The problem was complicated by the fact that budgets would not increase. Organizing schools to provide this time became one of the major objectives for the project.

One district had elementary teachers work a slightly longer school day by arriving 30 minutes before students each day. They were expected to use that time for collaborative work. This district had been using this approach for nearly a decade and there was strong support for doing so from the teachers, who often also wanted to spend a portion of their individual plan time on team activities.

In terms of school schedules, which are critical to the issue of teacher time, the districts used a variety of structures:

- six-period days with teachers instructing for five periods (requiring 1.2 teachers for every period).
- seven-period days with teachers instructing for five periods (a more expensive approach, requiring 1.4 teachers for every period).
- eight-period days with teachers instructing for five or six periods (requiring 1.6 to 1.33 teachers for every period).
- 90-minute block schedule with teachers instructing for three periods (requiring 1.33 teachers for every 90-minute block).

The challenge became one of organizing school schedules, student instructional days and teacher work days in ways to provide teachers with at least three 45 minute periods each week for collaborative work.

Strategies for Struggling Students

Establishing and implementing strategies to help struggling students was a stated priority for all districts, but there was no consistent approach to providing these services and resources for these strategies were thin. The districts did mention several interventions, but often the interventions were provided by the core classroom teacher with only limited Tier 2 or small-group intervention assistance.

The districts argued that more resources were needed for interventions, which should precede special education services for students with identified disabilities. There was a desire for additional resources for extended day programming and extended year (summer school) programming.

District personnel did not discuss a Response to Intervention (RTI)⁶ approach or accommodation within the regular classroom, which is the first step in the tiered RTI approach. However, multiple reading groups could be considered an accommodation that takes place within the regular classroom (though this came at the expense of high quality, whole class instruction in the first place).

The district that adopted Success for All and one that had a small number of Reading Recovery⁷ tutors were the primary small group or one-on-one intervention strategies discussed. One district provided Read 180⁸ classes at both the middle and high school levels, but no district described a well-structured, well designed set of Tier 2 intervention strategies for students struggling to meet performance standards but not yet identified for specific assistance such as special education, ESL or even Title 1 services.

Summary

Our review showed that the education improvement strategies across the districts could be dramatically enhanced, and each of the four districts wanted to do so. There was interest in framing more concrete and specific student performance goals, a strong desire to find time for much more collaborative teacher work focused on the curriculum and instructional program, a need for more school-based instructional coaches, and the need to strengthen district and school

⁶ Response to intervention integrates assessment and intervention within a multi-level "extra help" system to maximize student achievement and to reduce behavior problems. With RTI, schools identify students at risk for poor learning outcomes, monitor student progress, provide evidence-based interventions and adjust the intensity and nature of those interventions depending on a student's responsiveness, and identify students with learning disabilities or other disabilities.

⁷ Reading Recovery is a reading program where individual first grade students receive a half-hour lesson each school day for 12 to 20 weeks with a specially trained Reading Recovery teacher. As soon as students can meet grade-level expectations and demonstrate that they can continue to work independently in the classroom, their lessons are discontinued, and new students begin individual instruction.

⁸ READ 180 is an intensive reading intervention program that helps educators confront the problem of adolescent illiteracy and special needs reading, using technology, print, and professional development. The program addresses individual needs through differentiated instruction, adaptive and instructional software, high-interest literature, and direct instruction in reading, writing, and vocabulary skills.

strategies for struggling students. These then became the prime objectives for program restructuring and resource reallocation.

THE THEORY OF SCHOOL IMPROVEMENT BUILT INTO THE EVIDENCE-BASED MODEL⁹

The theory of improvement embedded within the evidence-based model (EBM) and thus the Ohio version (OEBM) not only reinforces the directions in which the four districts wanted to move, but also began to point to ways they could move their improvement ideas forward through more strategic budgeting.

The EBM draws from multiple research studies, both on individual programs and on schools and districts that have dramatically improved performance. It uses that research to identify 10 key strategies and their associated resource needs to point out ways schools and districts can move the student achievement needle forward. The 10 strategies are:

1. Creating a sense of urgency
2. Setting ambitious goals
3. Adopting a new curriculum and instructional vision
4. Using multiple forms of student data
5. Investing in ongoing professional development
6. Using time more effectively and efficiently
7. Providing extra time and help to struggling students
8. Creating collaborative cultures
9. Becoming professional communities and performance-oriented cultures
10. Addressing talent and human capital issues.

1. Creating a Sense of Urgency

To boost student performance dramatically, district and school staff need to feel a sense of urgency to do so, an internal force that propels them into the hard work that will be involved. A key technique to dramatize this bold psychological orientation is to have everyone in the system analyze students' current performance status using state data. The results are more powerful if all teachers are involved at each school, so they learn the precise performance condition of their students. During this process, many discover that student performance is lower – much lower – than expected; that achievement gaps are larger than expected; that student mobility doesn't explain much of the performance shortcomings; and that the school needs huge gains to move to an acceptable level of performance.

2. Setting Ambitious Goals

When faced with unacceptably low levels of achievement and large achievement gaps, schools and districts that produce large improvements respond by setting *bold* and ambitious goals, goals that are more than “stretch” goals and goals that might seem by some to be unattainable. Further, they set specific, numeric goals for student achievement growth. Examples of such goals include:

- To be the best urban district in the country
- To be the best rural district in the state

⁹⁹ This section draws heavily from Chapter 2 in Allan Odden, *Strategic Management of Human Resources in Education*, New York: Routledge, forthcoming February 2011.

- To get 95% of students at or above proficiency
- Or even to have all students achieving to advanced levels.

These “eye popping” goals are set even by low performing urban districts and schools with very large concentrations of students from poverty, immigrant or minority backgrounds. These schools and districts do not see demographics (or budgets) as constraining. Once they understand their true performance, they decide they can and must do better. They believe they can produce the results and they set very high goals, which even if they are not fully attained help pull the system toward much higher performance levels.

3. Adopting a New Curriculum and Instructional Vision

Nearly all districts and schools that go on to produce impressive gains in learning and substantial reductions in achievement gaps adopt new and more rigorous curriculum programs. Over time they also develop a very specific view of effective instructional practice. Though there are quite wide differences among specific curriculum programs adopted, each district or school generally concludes that the existing curriculum got them to their current performance situation and was not powerful enough to help them attain their bold goals, so new programs were required.

Importantly, the new view of effective instructional practice is quite explicit and every teacher is expected to learn and deploy the instructional approach over time. The district’s view of effective instruction infuses the teacher induction programs, ongoing professional development programs and evaluation programs. The goal is to get this view of instruction systemically embedded into all classrooms. Though there are some commonalities across the districts in these perspectives of effective instructional practice, there are significant differences as well.

Further, the specific instructional approaches are known and sanctioned by principals, and supported through professional development programs, evaluations and all other district actions. These districts believe that it is adherence to this instructional practice that produces student learning gains; when gains are not what are desired, they revisit and modify their instructional approach.

4. Using Multiple Forms of Student Data

Districts and schools that are making rapid progress in boosting student learning are using more than just state tests to help frame their strategies. Successful schools and districts create, buy and use a wide battery of aligned diagnostic tests, formative assessments for each curriculum unit, common end-of-curriculum unit tests (though this is a more recent phenomenon), and benchmark tests (that are given periodically such as after every nine weeks of instruction). These tests and assessments are used initially by teachers – usually working in collaborative teams – to continuously improve their instructional practices. The diagnostic and formative data is used primarily to frame instructional approaches before a curriculum unit is taught, while the benchmark assessment data is used to assess effectiveness after instruction is provided.

Many of the activities using these data occur in grade-level and content-focused collaborative teacher work teams, sometimes called Professional Learning Communities (PLC). Each PLC

needs a team leader who not only has the capacity to understand the implications of the student data but also the expertise to facilitate working together effectively.

5. Investing in Ongoing Professional Development

Not surprisingly, districts and schools making dramatic improvements in student performance invest heavily in ongoing professional development. Moreover, the professional development is systemic in that it is provided for all teachers and principals, all of whom are expected, and in most instances required, to participate. Many pupil-free days are set aside for initial training, which often occur in summer institutes.

Another resource is professional development teachers, instructional coaches and instructional facilitators in all elementary, middle and high schools. These school-based coaches provide on-site coaching to individual teachers, which the broader professional development literature has shown is key to having teachers actually change their instructional practice as a result of training. Sometimes districts hire outside consultants to provide the training, both for teachers and for instructional coaches, and other times training staff are hired by the central office professional development office.

6. Using Time More Effectively and Efficiently

Schools and districts boosting student learning gains far above normal trend lines also use a fixed resource – the school instructional day of about six hours – in more effective and efficient ways. First, they extend core time in both reading and mathematics, often stretching instruction in language arts (reading, writing, comprehension, communication) to 90 and sometimes 120 minutes a day, although some of this time is often used for reading in the content areas and writing across the curriculum. These districts and schools also protect this core instructional time from outside interference such as public address announcements.

Second, in secondary schools, struggling students are often provided double periods of instruction in mathematics and reading, the assumption being that learning to proficiency in core subjects is more important than an elective.

Third, several high schools moved to block schedules of 90 minutes so teachers had more time to develop lessons and curriculum units to thinking, problem solving and application. These and other strategies are used to provide time for teacher collaborative work – to analyze formative data to improve instruction, collaboratively create standards-based curriculum units and reflect on instruction after it has been deployed. Fourth, as discussed in the next section, time was extended for struggling students as well as for a series of extra help interventions.¹⁰

¹⁰Some of the extra time for “core” subjects was taken away from other subjects, such as science and social studies in elementary schools, as well as art, music, physical education, and so on. States, district and schools could have considered bolder school day and year changes so these subjects are not shortchanged as core, test subjects are given added priority.

Principals need expertise in redesigning school schedules to provide this extra time and to ensure that collaborative team leaders, teachers in those teams and instructional coaches have the expertise to make good use of the collaborative time.

7. Providing Extra Time and Help to Struggling Students

Top improving schools and districts provide a variety of extra help strategies to students struggling to reach the level of proficiency or above. Although the exact combination of extra help programs varies by school and district, nearly all provide some combination of one-on-one or very small group tutoring as the first intervention, complemented by academic help in afterschool tutoring programs as well as academically focused summer school programs. These strategies are based on the principle that most kids can learn to high standards, but some need more instructional time than others. These schools kept performance standards high for students but provided extra help through additional instruction in tutoring, after school or summer contexts.

Staffing needs for such initiatives require teacher tutors, extended day teacher staff, summer school teaching staff and sometimes paraprofessional tutors. All staff must be expert in providing additional and focused assistance to students needing extra effort to perform in core subjects, such as reading, writing, mathematics, science and history.

8. Creating Collaborative Cultures

These successful schools create collaborative or professional school cultures, characterized by effectively functioning Professional Learning Communities (PLCs). Such cultures are characterized by having high expectations for student learning, making instructional practice public and something that is worked on collaboratively. They also they take responsibility for the impacts of curriculum and instruction on student learning. In other words, taking credit when student performance rises and going back to the curriculum and instruction development board when performance is not what is expected.

As noted earlier, PLC leaders need expertise in organizing and running such collaborative groups, in addition to being good instructors themselves. Further, principals need the expertise to organize school schedules in ways that provide PLC team members with common time during the regular school day so they can engage in collaborative work on the instructional program, as well as capacity to select effective team leaders and ensure they get the leadership training needed to do their team leadership job effectively.

9. Becoming Professional Communities and Performance-Oriented Cultures

Another common strategy schools and districts use to boost student academic learning is to be performance and professionally oriented in how they approach their work. Teachers and administrators in these schools read education research, usually published in practitioner journals such as *Phi Delta Kappan*, *Educational Leadership*, the practitioner journals of the many national content organizations (e.g., National Council of Teachers of Mathematics), and *Education Week*. These publication outlets, as well as the What Works Clearinghouse

(<http://ies.ed.gov/ncee/wwc>), the Best Evidence Encyclopedia (BEE) (www.bestevidence.org) and many others provide teachers and administrators in school districts with access to the most up-to-date research on what works in education. Most staff in schools that are moving the student achievement needle access these knowledge outlets on a regular basis. The educators in these schools believe they must know the most up-to-date research knowledge in order to productively impact student learning.

In addition, these schools “benchmarked” other schools, districts and whole school models to keep abreast of and appropriately use “best practices” in education. Finally, these education organizations brought a variety of regional, state and national experts on a range of issues into their system. They tapped the best education minds in their communities and state and asked them how to improve their practice so students would learn more, the achievement gaps would diminish and schools would become more productive.

10. Leadership and Talent

Dramatically improving schools create a “density” of instructional leadership – teacher team leaders, instructional coaches, school-based content experts, principals and central office administrators who work closely with school leaders. Further, they initiate efforts to insure that all schools have sufficient teacher and principal talent, sometimes reconstituting school leadership and staff, as did one school in the Ohio project.

Summary

In sum, there is general consensus among the many different schools and districts that have dramatically improved student performance over a 4-6 year time period about what strategies are likely to be most successful. Further, there is significant alignment between what the four project districts would like to do and the strategies deployed by improving districts and schools. As the next section shows, all the strategies deployed by improving districts around the country, as well as their resource needs, are built into the Evidence-Based Model (EBM). As stated above and described in more detail below, the OEBM itself is a close replica of the core EBM. Thus, the EBM and the OEBM, together with the OEBM based Strategic Budgeting Tool, offer schools and districts a solid start for rethinking their current educational programs and strategies with the goal of crafting a restructured set of programs and strategies to produce much higher levels of student performance, all of which can be funded by reallocating the resources currently in education budgets.

THE OEBM AND THE STRATEGIC BUDGETING TOOL

In this section, we provide a comparison of the Evidence-Based model as we have developed it in work with states across the country with formulas in that model to its adaptation in the OEBM. Following that discussion, we describe the OEBM Strategic Budgeting Tool.¹¹

The basic approach of the evidence-based model is to identify school-based programs and educational strategies that research has shown to improve student learning. Although the rigor of the evidence supporting the effectiveness for each recommendation varies, this approach only includes recommends that are supported by either solid research evidence or best practices. In practice, these research findings have been used to describe the resources a school would need to dramatically improve the achievement and learning of all students. Evidence-based studies establish prototypical schools, estimate the resources needed at each school, aggregate school-level estimates to the district level, add central office costs for each district and sum the district totals to estimate the total statewide costs of the model's recommendations.

The OEBM is very similar to the original Evidence-Based model we developed. In most areas, the OEBM mirrors the resource allocation strategies identified through our earlier research. In some areas, the intent of the OEBM was to fully fund elements of the model over a ten year period. In addition, there are a number of resources where our Evidence-Based model generates more resources than are generated through the OEBM. This includes the following:

- Core Teachers: We recommend ratios of 15:1 for grades K-3 and 25:1 for all other grades. The OEBM initially allocates resources at 19:1 for K-3 and over time moves to the 15:1 ratio. It uses 25:1 for grades 4-12. Specialist Teachers: At the high school level the Evidence-Based model resources specialists at 33% of the core teachers, whereas the OEBM uses 25%.

¹¹ For more details on how the OEBM compares with the Evidence-Based model, see Picus, L.O. and Odden, A.O. (2009). *Review and Analysis of Ohio's Evidence Based Model*. Prepared for the KnowledgeWorks Foundation, April 2009.

- Instructional Coaches: OEBM provides one instructional coach per organizational unit while the Evidence-Based model resources coaches at one for every 200 students in a school.
- Extended Day and Summer School: OEBM provides fewer resources than identified in the Evidence-Based model. OEBM assumes that extended day is provided through the funding for tutors, and provides a \$3,000 stipend for each summer school teacher.
- Special Education: OEBM retains the current weighted formula for special education making direct comparison with the Evidence-Based model impossible.
- Career and Technical Education: OEBM provides an additional 2.9 teaching positions at high schools for this area, while the Evidence-Based model assumes the core and specialist teacher allocation is adequate to provide for career and technical education.
- Pupil Support Staff: OEBM provides one position for every 75 students who qualify for free or reduced price lunch, this is more than the one per 100 such students in the Evidence-Based model.
- Librarians: OEBM provides \$60,000 per organizational unit to be phased in over eight years. This compares generally with the one librarian per school in the Evidence-Based model but likely does not fund the library technician included at the high school level.
- School Site Administration: Principals are staffed at one per prototypical school in the evidence-based model and one per organizational unit under OEBM. This is basically the same level of funding, except that under the evidence-based model, principal positions are not prorated downward until a school has approximately 100 students whereas the OEBM appears to prorate downward from the prototypical sizes. Moreover, a school with 200 elementary students would generate a full-time principal under the evidence-based model and approximately half a principal under the OEBM. This means a district with a number of relatively small schools would receive fewer principal resources under OEBM than under the evidence-based model.
- Clerical Staff: The OEBM funds the same number of clerical staff (secretaries and clerks) at the elementary and middle schools, but provides one more clerical position at the high school. More importantly, OEBM funds a building manager at each school site.
- Professional Development: In our minds, professional development includes three components: additional pupil-free teacher days for training that could occur in summer workshops, instructional coaches and training funds at the rate of \$100/pupil for outside experts, central office professional development staff and/or teacher attendance at conferences. The additional days and instructional coaches were discussed above; here we compare the allocation of additional funding for professional development. The evidence-based model allocates \$100 per pupil for all students to provide funds for the training aspect of professional development. This is approximately the same as allocated

under the OEBM. The OEBM report calls for \$1,833 per teacher. At a class size of 25, plus an additional 20 percent for specialist teachers, we estimate this to be equivalent to about \$90 per student. If we assume that class sizes in elementary schools average 18 per teacher (15 K-3 and 25 4-5) then professional development funding at elementary schools would be approximately \$127.29 per pupil, or about 25 percent more than the evidence-based model.

- In sum, the differences between the evidence-based and OEBM models on professional development are:
 - the evidence-based model provides for 10 pupil-free days for training; it is not clear if the OEBM model provides these pupil-free days through the 200-day school year.
 - the evidence-based model provides one instructional coach for every 200 students, which is more than twice the coaching resources than the OEBM model, which provides one instructional coach position for every school.
 - the evidence-based model provides \$100 per pupil for trainers, which is approximately equal to or somewhat less than the \$1,833 per teacher provided by the OEBM.
- Instructional Materials, Student Activities And Technology: The two models are similar, except OEBM has an eight-year phase-in period. Also, resources at the high school are lower for instructional materials and student activities. The evidence-based model also includes \$25 per pupil for “formative assessments,” which is a resource that all schools and districts doubling student performance now use and is something that is critical in the first year of implementation as it enables schools and districts to measure student progress as they seek to boost student performance.
- Nurses: The evidence-based model assumes nursing support would be provided through staffing allocations for pupil support, whereas the OEBM provides one nurse per school district and one nurse aid per organizational unit.
- Central Administration: Central administration appears to be severely underfunded through OEBM, which provides funding for a superintendent and a treasurer for each district, phased in over eight years. The evidence-based model projects 9 professional and 9 support positions in the central office for a district of 3,500 students projected upward and downward depending on actual enrollments.
- Operations and Maintenance: The evidence-based models we have developed generally fund operations and maintenance at the state average, which in the report used by Ohio was \$890 per pupil. OEBM uses a figure of \$902, which is approximately the same level of funding, but this support amount is to be phased in over eight years.
- Pupil Transportation: Pupil transportation was left at the previous year expenditure level pending further study. This also has been the approach of the evidence-based model in terms of estimating statewide costs.

THE STRATEGIC BUDGETING TOOL

As school districts begin to make decisions about how to allocate resources across alternative uses, the OEBM offers a set of strategies they can use to prepare their budgets. The Strategic Budgeting Tool was developed to support school district planning and decision-making under this model. It is intended to be a flexible planning and simulation tool that districts can use to consider alternative staffing and dollar allocations and to provide information regarding what resource use options are possible, and what resource allocation decisions will require additional revenue.

The Strategic Budgeting Tool¹² is designed to allow a school district to compare its existing resources (and the choices the district has made about the allocation of those resources) to the resource allocation strategies embedded in the OEBM. To use the Strategic Budgeting Tool, districts enter information about student enrollment and other characteristics by school, as well as information regarding the allocation of staff and dollar resources. The tool then compares the resource allocation choices made by the school/district with the resources generated through the OEBM.

The Strategic Budget Tool is designed to be flexible, allowing users to simulate alternative resource allocation patterns and compare those to the current allocation of resources (particularly personnel) within the district.

Input Data

Users first enter data showing their strategic vision for resource allocation within their district. The parameters of the OEBM are provided, along with data on the salaries utilized by the state in funding the OEBM. These figures can be changed to assess the differing impacts of various resource allocation approaches. Districts enter ratios of teachers to students in several categories:

- Core teachers
- Specialist teachers
- Lead teachers
- Tutors
- LEP teachers
- Special education teachers
- Pupil support (family liaison) staff
- Guidance counselors
- Summer school staff
- Librarians
- Gifted coordinators
- Gifted intervention specialists

¹² The budget tool was developed using Microsoft Excel, and it will operate on any computer that has Excel for Office 2007 or higher installed. The model itself is a set of five worksheets in one Excel workbook.

The tool also asks for ratios for principals, building managers and school secretaries, along with classified staff in the following categories:

- Instructional aides
- Non-instructional aides
- Special Education aides
- Nurses' aides

Fiscal or dollar resources are identified in the end in the following categories:

- Technology
- Instructional materials
- Assessment
- Student activities
- Professional development
- Gifted identification

Finally the state and district costs (salary plus benefits) for each type of position are included in this worksheet to enable conversion of staffing patterns into budget dollars. Separate compensation estimates are provided for:

- Teachers
- Principals
- Assistant principals
- Building managers
- Secretaries
- Summer school teachers
- Librarians
- Gifted Coordinator
- Gifted Intervention specialist
- Family/community liaisons
- Aides and paraprofessionals

Base Data

School districts enter actual student enrollment data by grade level, student characteristics data (ELL, free and reduced price lunch eligible, and special education) and information on staff. The tool provides room to enter data for positions not explicitly identified in the OEBM, but used in some school districts. The Strategic Budget Tool uses this data to compare district and school resource allocation patterns with the resource and funding options identified by the previous data.

School Calculations

This worksheet computes the resources each school in the district would receive if resources were allocated using the parameters established on the inputs page. The output displays the number of personnel by category based on each school's enrollment and student characteristics.

Full-Time Equivalent and Cost Comparison

These two worksheets compare each school's personnel and fiscal decisions (or the decisions made on its behalf by the district office) with the resources the school would generate using the model created on the input data worksheet.

RESOURCE REALLOCATION EXAMPLES FROM THE FOUR DISTRICTS

The four districts taking part in this project identified specific examples of program restructuring and resource reallocation they would implement or consider. In some cases, implementation would require changes in the collective bargaining contract with the teachers, meaning implementation would need to be considered carefully and worked out through altered contract language.

The strategies fell into four categories:

1. Strategies for providing collaborative time for teacher teams which includes the mix between core and specialist teachers as well as class size
2. Lead teachers for instructional coaching
3. Strategies for struggling students focusing primarily on struggling students who do not have an identified disability
4. Strategies for ESL students

In general, there was insufficient time to probe the districts' strategies for serving students with disabilities; we expect an in-depth analysis of those strategies would unearth additional inefficiencies and possibilities for better use of such resources.¹³

The discussion below focuses on the different way teaching staff can be used and discusses numbers of staff positions first that can be saved and then reallocated to other purposes. Though we have not translated staffing positions into dollar figures, the salary and benefits for one teacher averaged \$66,000, \$70,000, \$84,000 and \$94,000 in the four districts; these figures can be used by the reader to estimate savings or dollar amounts that can be reallocated.

1. Class size, core and specialist teachers, and collaborative time

These issues are inextricably intertwined. They also include school organization and the number of periods in the school day. The smaller the **class size**, the more teachers are needed. But small class size, which has only modest effects on student learning and which is supported by research only for grades K-3, is costly. All discussions about using resources more effectively should begin – and did in this project – with a review of class sizes.

During the four months of discussion with the four districts, the bulk of the time was spent on the largest draw on district staffing resources – core and specialist/elective teachers, class size, school schedules, individual plan time and collaborative plan time. Core teachers are defined generally as the grade-level teachers in elementary schools, and then mathematics, science, social studies, reading/English/language arts, and foreign language teachers in middle and high schools. Elective teachers are all other teachers who provide classroom instruction including art, music, physical education, health, career/technical, family and consumer education teachers, and so on.

¹³ For examples, see Odden and Archibald (2009).

School schedules impact cost by requiring different levels of staffing. Several decades ago, most schools were organized around a 6.5-hour school day, with instruction provided for six hours and 30 minutes for lunch. Most instructional days are still six hours, excluding lunch. (For simplicity, this discussion will ignore the time for moving from class to class and talk about a six-period schedule as having six one-hour class periods.) If teachers teach five periods a day, which is the norm across the country, then assuming equal class sizes, a school would need 1.2 teachers for every class period. In this case, teachers in elementary schools would teach for five hours, and then specialist teachers, such as art, music and physical education teachers, would cover the additional hour, though this hour would occur for different teachers at different times during the day (and the specialist teachers also would teach for only five hours). Similarly in middle and high schools, core teachers could cover five periods, then elective teachers would be needed to cover the sixth period.

But many schools today, including schools in several of the districts that were part of this project, have moved to a seven-period schedule. With teachers teaching only five periods, this requires 40% more teachers – one teacher for the first five periods, and then 0.4 more teachers for the sixth and seventh periods. The effect of the seven-period day is to reduce instructional time for core classes, increase costs (assuming equal class sizes which also tends to be the norm) and expand electives.

Some of the schools in the project also had an eight-period schedule, which increases costs and reduces core instructional time even more, assuming a six-hour instructional day and teachers teaching five or six periods.

One goal for districts was to find time for teachers to work in **collaborative groups**. In most cases, carving out time for collaborative work was constrained by the inability to use any individual plan time for collaborative work. The challenge was to find time for collaborative work without increasing costs.

In general, the districts also provided teachers with at least 225 minutes of individual plan time a week – 45 minutes a day. Each district took a different approach to providing collaborative time without increasing costs, but there were ways to accomplish this goal for each district.

Olentangy. Using the Strategic Budgeting Tool, representatives from Olentangy set class sizes at 22 for half-day kindergarten, 22 for grades 1-2 and 23 for grades 3-5, which generally reflected existing practice for elementary schools. It set class sizes at 25 for both middle schools (grades 6-8) and high schools (grades 9-12) which generally reflected existing practice, except for one area – Advanced Placement classes in high schools. It set specialist and electives teachers at 15% over core teachers for elementary schools, 30% for middle schools and 33% for high schools.

The district had been staffing Advanced Placement classes at one teacher for every 15 students, the class size recommended by the Educational Testing Service. But the district concluded that the bright and able students in those classes would do just as well in classes of 25, which would free up staffing positions for use elsewhere without harming performance. The Strategic Budgeting Tool showed the district would save 13 staffing positions with this approach; what's

more, if middle and high school class sizes were increased by just one student, a total of 28 staffing positions could be saved.

The district organized teacher time in creative ways that allowed time for teacher collaborative work. The most traditional approach was used in high schools: instruction was organized into eight 45-minute periods with each teacher teaching six periods a day, including a homeroom. This could be accomplished through providing specialist teachers at the rate of 33% above core teachers. So each day on average, teachers had 45 minutes for individual plan time and 45 minutes for collaborate work; teams also could change the approach to have 90 minutes of individual plan time and 90 minutes of collaborative time every other day.

The district currently uses a different approach for middle schools. Core teachers provide four hours of instruction in core subjects in the morning. Then they have a 30-minute advisory period with a home room group of students and another 30 minutes for a duty, tutoring or something else. That totals five hours of teaching work time. Students have 90 minutes for elective classes; so the formula for elective teachers in addition to core teachers is 30% more – somewhat less than the 33% for high schools. The 90 minutes for electives extends the school instructional day to 6.5 hours, which with a 30-minute lunch totals seven hours.

The 90 minutes of pupil free time for core teachers provides the same 90 minutes that high school teachers have, which can be divided multiple ways to provide individual plan time and time for work in collaborative teams.

In elementary schools, the district organized the teacher's instructional day so only an additional 15% is needed for elective/specialist teachers over core classroom teachers. First, the school day for teachers is actually 7 hours and 40 minutes, a bit longer than the day for middle and high schools. Teachers arrive at school every day 30 minutes before students arrive for teacher collaborative work. The instructional day is six hours and 40 minutes, minus 30 minutes for lunch and 35 minutes for individual planning, so core teachers provide instruction for a total of five hours and 35 minutes.

In sum, Olentangy would like to increase class sizes in high schools to 25 for all classes, including Advanced Placement classes, and currently and going forward has elementary class sizes larger than in the OEBM: 22 for grades 1-2 and 23 for grades 3-5. The district believes that these modestly higher class sizes do not harm student learning and, if the district can implement the high school changes, could produce 13 unallocated staffing positions; if class sizes in high school were increased by just one more student to 26, then an additional 28 staffing positions would be freed up. Further, these class sizes with varying ratios for specialist and elective teachers, and revised school schedules, can also produce 30-45 minutes of collaborative time for teachers every day at all levels and retain the same for individual planning. With this plan, Olentangy can free up positions for interventions as well as provide for both collaborative and individual plan time.

Cincinnati has significant potential to free up both teaching positions and instructional aide positions if it moved to a different way of staffing its elementary and high schools. Over the past several years, it has restructured all former elementary and middle schools into 32 K-8 schools,

which it calls elementary schools. It staffs these schools by grade level with the goal to have class sizes at 18. If the pupil count is not an exact multiple of 18, a teacher plus an instructional aide is used for class sizes from 19 to 26. If the class size exceeds 26, that student group would be split into two classes. This approach produces several cliff effects, where one additional student requires adding a position, and requires considerable numbers of additional teachers and instructional aides.

On the other hand, the district provides one specialist/elective teacher for every seven teachers, which means that the specialist/elective classes are somewhat larger than regular classes in grades K-8.

When Cincinnati used the Strategic Budgeting Tool to simulate a different approach to staffing its schools, including high schools, it set class sizes at 22 for grades K-3 (including full-day kindergarten), 28 for grades 4-8, and 30 for grades 9-12. It also set specialist/elective teachers at 20% for grades K-5, 30% (drawing on the Olentangy approach) for grades 6-8, and 33% for grades 9-12. At these levels, the district would require 65 fewer core teachers and 67 more elective teachers, which essentially becomes a staff reallocation approach with virtually no extra cost. What the district would gain is the opportunity for all teachers at every level to have 30 to 45 minutes each day for collaborative team work, in addition to individual plan time.

Further, this approach to staffing schools would free up several hundred instructional aide positions. The district now has about 587 instructional aides, of which approximately 64 are for preschool programs, leaving 523 that would be unallocated with the new approach to class size. The OEBM model calls for supervisory aides (for helping student get on and off buses, lunch duty, etc.) at the rate of one per organizational unit, which totals 65 positions in Cincinnati; the original evidence-based model provides about twice that level of nonsupervisory aides, or 130 in the Cincinnati system. So it is safe to assume the different staffing approach would free up about 400 instructional aide positions, the equivalent of approximately 133 teacher positions that could be used for other purposes.

Lorain implemented a staffing reallocation for the 2009-10 school year. It merged two high schools into one building and organized the new building into a block schedule, with four 90-minute blocks each day. With teachers providing instruction for three of the blocks, it needed an additional 33% over core teachers for elective classes. It was able to accomplish this by setting average class sizes at 30 for the high school. This schedule gives each teacher 45 minutes of individual plan time and the possibility for collaborative time, and the district is now trying to reduce the duty requirement (supervising hallways, lunch rooms, etc.) for that extra 45 minutes and allow teachers to use it for collaborative time.

Morgan, with just five schools, took a more focused approach to reconsidering staffing levels. For its three elementary schools, each with an enrollment close to 400 students, leaders felt they could increase class sizes to 22 students in grades 1-2, 25 in grades 3-4 and 28 in grades 5-6, retaining, as the OEBM provides, 19 for kindergarten.

At these class sizes, each of the three elementary schools has grades that have either two or three sections. In the past, all elementary schools had three sections, but that has changed in some grades during the past few years.

The district also did not want to use a ratio to provide elementary elective teachers, but to retain its current practice of putting three elective teachers – one art, one music and one physical education – into each elementary school, which is slightly less than the OEBM model would provide at a 20% ratio. With this staffing, every elementary teacher is provided 40 minutes of individual plan time every day.

The district has set the work day for elementary teachers at a half hour longer than that for students. The district asked and it has become standard practice for teachers to use those 30 minutes before students arrive three days each week for collaborative team work, with a mixture of meetings of the entire staff, teams at grade levels and subject-focused teams. When the district started these practices 10 years ago there was some pushback, but today this practice seems to be accepted and the teachers value the available time for collaboration.

The district organizes six hours of instruction provided in its elementary schools into nine 40 minute instructional periods divided as follows for grades K-2:

- 2 periods for mathematics each day
- 4 periods for reading/language arts each day
- 1 period for either art, music or physical education each day
- 1 period for science and social studies on alternate days
- 1 period that includes 20 minutes for lunch and a 20 minute recess during the day.

For grades 3-6, the periods are divided as follows:

- 2 periods for mathematics each day
- 3 periods for reading/language arts each day
- 1 period for either art, music or physical education each day
- 1 period each for science
- 1 period for social studies
- 1 period that includes 20 minutes for lunch and a 20 minute recess during the day.

Each elementary teacher thus has one 40-minute period (generally the period for art, music or physical education) every day for individual planning.

Collaborative time in middle and high school is somewhat different. In the past, both the middle and high schools have been organized on a six-period day, with teachers teaching five periods and having one period for individual plan time. To allow for collaborative time, the district used the Strategic Budgeting Tool to experiment with creating block schedules for each school, which required 33% more for specialist teachers above core teachers, with teachers providing instruction for three blocks and freed for one 90-minute block a day. The district kept the cost neutral by raising class sizes. This approach would have provided for 45 minutes of individual plan time as well as 45 minutes of collaborative plan time.

But the district's preference is to extend the teacher work day by the same 30 minutes as for elementary teachers and use the bulk of the additional time for collaborative work. This was seen as a better approach than raising secondary class sizes and expanding elective offerings. The goal was to keep secondary class sizes at about 25, with just three elective teachers in the middle school and four in the high school (excluding a larger and program-funded career-technical program).

At these levels, the district found that it could free up four full-time equivalent positions across all five schools.

Using collaborative time well. During the discussions on the search for teacher collaborative time, all districts made the point, multiple times, that districts needed to provide training to principals, teachers and lead teachers (instructional coaches) in how to make good use of collaborative time. Each district recognized that time for teachers to work in collaborative teams was just the first step in having collaborative activities contribute to improved instruction and student learning. Principals would need to organize school schedules so all team members had free time at the same time during the day; clearly, the Morgan approach to have the first 30 minutes of the day for collaborative work was the easiest to schedule. Lead teachers and team coordinators need expertise in setting agendas, running meetings, keeping team members on agenda and helping diverse people make decisions; and teachers need training in how to work effectively in collaborative groups. The consensus was that putting in systems, and considerable training, to ensure that collaborative time was used well and the potential of this new resource realized.

2. Lead Teachers

Under EBM, instructional coaches (or lead teachers, in OEBM) are key to making professional development work – these positions lead to change in teachers' classroom instructional practice that in turn leads to improved student learning. Increasingly, instructional coaches also play crucial roles in collaborative teacher teams, helping them analyze the implications of formative student data, revise lesson plans, craft standards-based curriculum units, create and use common end of unit exams, and reflectively analyze student performance on the common assessments.

Through using the Strategic Budget Tool, each district realized it needed additional positions for lead teachers,¹⁴ or instructional coaches. The OEBM includes one lead teacher for each organizational unit (or one for every 418 elementary students, 557 middle school students and 733 high school students); the EBM provides one lead teacher for every 200 students. To meet the OEBM levels, the simulation showed that Cincinnati needed 65 new lead teacher positions, compared to about 52 currently in the system, or 13 more positions. Olentangy needed to provide lead teachers to its three high schools, having already amply staffed its elementary and middle schools with instructional coaches. Morgan needed about 1.5 additional coach positions – the

¹⁴ The label of Lead Teacher in the OEBM is different from that in Cincinnati, which has had Lead Teacher positions for many years. The OEBM Lead Teacher position is that of an instructional coach who provides assistance to teachers. This report separated Cincinnati's previously developed Lead Teacher positions from these in the new funding model.

half for its middle school and a full position for its high school – and Lorain needed 15 positions, which required an increase from the eight already in the schools. Lorain in the previous year had installed one lead teacher in each of its elementary schools as part of implementing the Success for All reading and whole school reform program.

There was no specific agreement in any district on exactly how to provide the staff for these new roles. Further, all districts had had some unsuccessful experience with instructional coaches – individuals chosen by seniority and not expertise – so knew that if they addressed this reallocation agenda they needed to insure that the individuals hired had the appropriate skills to work in lead teacher, instructional coaching positions.

3. Strategies for Struggling Students

As each district moved through the budget simulation exercises, it became clear that the area that needed the most analysis for improving performance were the districts' strategies for providing extra help for struggling students – students who were not labeled as having a disability, were not ELL or did not qualify for any other special program. These services would be viewed as Tier 2 services in the traditional Response to Intervention (RTI) approach, where Tier 1 is high quality, core classroom instruction, Tier 2 is extra help provided to any struggling student through some kind of intervention, usually in small groups or one on one, and Tier 3 is services provided under special education. The resources for these services in the EBM and OEBM are staffing for tutors, extended day and summer school. The OEBM provides just for tutors (using the same formula as the EBM for tutors) and specifies that districts provide extended day and summer school tutoring with that staffing allocation; the EBM provides separate staff for each of tutoring, extended day and summer school programming. The discussion here will focus on the tutoring staff, the extra help provided during the regular school day and school year. Resources for extended day and summer school programming were scarce and generally not funded in the OEBM.

Cincinnati identified extra help for struggling students as a major shortcoming of its current curriculum and instructional programs. Nearly all Title 1 funds have been used to decrease class size (with additional aides and teachers), and there are only a nominal number of tutors, so unless a student has a specified disability or is ELL, he or she will not receive much if any extra help even if they are struggling to learn. The Strategic Budgeting Tool, using the OEBM formula for tutors, showed that the district needed to have 235 staff in this area, compared to the 28 already engaged in tutoring or other Tier 2 interventions. The 133 full-time equivalent positions freed up by reducing the number of instructional aides in the system was identified as a prime source for beginning to provide this needed service.

Though the district knew that it would be difficult to alter the way they staffed elementary schools, with the large number of instructional aides now supported across the district, leaders believed it was time to reassess this strategy, because research indicates that such staff does not add much value in terms of increased student achievement and reducing instructional aides would free up resources to provide more Tier 2 intervention assistance. The understanding was that appropriately provided Tier 2 help – generally instruction in groups of three to five and perhaps one-on-one tutoring for students in the bottom quartile – would not only dramatically

impact the learning of struggling students, but also reduce the need to move students into the special education program.

Olentangy also focused the positions it was freeing up with its modestly larger class sizes for Tier 2 intervention. Though the current 35 lead teachers actually spent 30% of their time as tutors, the district decided it should strengthen its Tier 2 staffing resources. By adjusting the budgeting tool to show tutoring intervention staff resources at the OEBM level (one for every 100 at-risk students with a minimum of one for every school organization), the district found it needed 17 Tier 2 staff, compared to the 11 that it had allocated. The district's plan was to provide these staff from the 13 positions freed up from raising the sizes of advanced classes in high schools.

Morgan has several creative strategies for providing extra help for struggling students, even though the district decided it needed even more staff in this area. The Strategic Budgeting Tool showed that the district needed about 12 positions for tutoring and related Tier 2 intervention assistance.

First, the district currently provides three Reading Recovery tutors, one in each of the three elementary schools, though such individuals generally only work with struggling first graders.

Second, the district provides two Read 180 teachers in the middle school and one Read 180 teacher in the high school; students needing extra reading help take the Read 180 classes instead of an elective, so these positions are coded in the specialist/elective category. However, these three teachers provide tutoring for 2/3 of their time, which totals to 2 full-time equivalent tutoring positions, 2/3 in the high schools and 1 1/3 in the middle schools.

Third, there are about three additional tutoring positions in the three elementary schools. As noted above, the district provides three elective teachers for each elementary school, one each in art, music and physical education. This strategy worked perfectly when each grade in each school had three sections. However, as enrollment has declined a couple of grades in each elementary school has just two sections. That means every third class period has no students needing electives instruction, so the elective teachers tutor other students during this time. This produces three teacher periods of tutoring per grade or 30 periods of tutoring each week, which equals about one position. Creative use of tutoring by elective teachers has produced a total of three tutoring positions in elementary schools.

With the three Reading Recovery positions, two Read 180 positions and three elective teacher tutoring positions, the district provides eight positions for Tier 2 assistance. With the Strategic Budget tool suggesting the district needed a total of 12 such positions, the challenge was to find four additional FTE positions, which it could do from modestly increasing class size in core and elective classes.

In sum, each district concluded that it should focus more attention and resources on Tier 2 intervention help, extra assistance for students (without special education labels) struggling to learn to performance standards. All districts decided that staffing resources freed up in other

areas would be allocated as a first priority to strengthen programs for providing extra help for struggling students.

4. Strategies for ELL Students

While the number of ELL students was rising in the four districts, the numbers were still small and often not concentrated in any specific school, so ELL servicing was not yet a major issue for them.

We identified one example among the four districts that was similar to districts with higher concentrations of ELL students, who needed not only solid core instruction but also ESL instruction in smaller classes. What often happens is that when ELL students are pulled from regular classes for appropriate instruction in English, the non-ELL students who remain are then educated in small classes. In one school, these non-ELL students actually took a foreign language but in classes half the size of the regular class – so received enriched foreign language instruction. The issue is whether the non-ELL students can be grouped into classes of normal size, which would free up some teacher-periods, either to strengthen ELS offerings or to be used for other purposes. Since this phenomenon has been seen in several schools across the country, any district should be aware that programming the class size of the non-ELL students has the potential to produce extra teacher-periods that could be used for any other school need – more Tier 2 intervention tutoring, lead teachers or time for teacher collaborative work.

Special Education

Each district spent considerable sums on services for students with moderate and mild disabilities and acknowledged that funding these services required a significant draw on the district's overall budget. While this project didn't allow review of these services, this is an area that should be addressed by all districts rethinking their overall instructional programs with an eye towards rooting out inefficiencies and using resources in more effective ways (see Odden & Archibald, 2009, for examples). The districts agreed that strengthening the Tier 2 intervention help, if done well, would reduce the need for special education services over the medium to long term.

Summary

This project demonstrated that all schools and districts – rural, urban, suburban, large and small – have multiple opportunities to reallocate resources, including staffing resources, in significant ways. Each of the four districts that participated identified ways they could shift staffing resources that were likely to boost student learning. A major strategy for producing flexibility with staffing resources is openness to altering class size. Small class size, which has only modest effects on student learning and which is supported by research only for grades K-3, is costly. As the examples from these districts show, modest increases in class size can free up significant staffing resources that can be deployed to other needed strategies that have more impact on student learning gains.

The districts' objectives for education program change and resource reallocation blended well with the theory of action embedded in the EBM and OEBM, and included in the Strategic Budgeting Tool. Districts sought to provide more time for teachers to collaborate on curriculum and instructional issues, a school practice that has emerged in nearly every study of districts and schools that have moved the

student achievement needle by large amounts. This was found to be possible *without* late start and early release days, which is where the districts began the discussion and which reduces instructional time for students.

Districts also wanted to expand their use of lead teachers or instructional coaches, which research shows is critical to helping teachers implement new instructional practices in their classrooms. Further, instructional coaches were critical to districts' efforts to have collaborative teacher teams work collectively to analyze formative assessment data in terms of their implications for instructional change.

Districts also sought to strengthen Tier 2 intervention strategies – extra help designed to get students back on a track to learning at least to proficiency levels. Finally, it became clear that there were opportunities to improve the cost and effectiveness of programs for ELL as well as special education students.

In short, the project showed that in all areas of the curriculum and instructional program there were opportunities in virtually all districts for change that would both cost less and impact student performance more.

The process of rethinking curriculum and instructional programs, and the overall education delivery system, takes time. The project made significant progress over five months, but more time probably would have identified additional places where resources could be restructured or refocused on important student learning goals. Districts first need to fully understand current instructional programs, structures and resource needs. They then need to decide that a different way of organizing instruction and education service delivery would be significantly better. This new belief provides energy to make the changes and the will to move through the tough decisions that must be made to shift program, strategy, people and staff to a different approach.

The state would be wise to follow these districts to track the degree to which they – or other districts picking up on the ideas in this report – implement the changes, use staffing resources differently and boost student achievement. Most educators find it hard to believe that more can be done with the current education resources (or even reduced resources if that happens) but the strategies these districts identified have the potential to boost student learning with the resources currently in the system.

Appendix A

Detailed description of the study Process

Researchers from Picus and Associates met with representatives of the four districts on four occasions. We initially met individually with teams from each district to build an understanding of the district and its goals and priorities. Our second and third meetings focused on development and use of the Strategic Budgeting Tool and the theory of action embedded in the Evidence-Based Model. Our fourth meetings took place with the districts individually and focused on specific applications of the model to each district.

Our initial district meetings took place in Columbus at the end of July. At that time we met individually with each district's team for half a day. Our goal was to meet with the superintendent, treasurer, chief academic officer, chief human resource office, principals, teachers and representatives of the teachers' union. The membership composition of each teams varied by district but we sought a diverse team with individuals representing the major roles within the district. The purpose of the first meeting was for us to understand the education improvement strategies of each district, how they allocated resources to schools, and any particular issues or challenges the district faced.

In September we met with representatives of all four districts for a day and a half (to the maximum extent possible we sought to meet with the same individuals we met with in July). At that meeting we engaged in the following activities:

- We shared our district summaries from the first meeting with all of the district representatives. This included:
 1. The goals driving each district
 2. Their education improvement strategies
 3. The major issues they faced overall, and
 4. The macro issues they should consider regarding resource allocation and use.
- We provided participants with a summary of what we have learned from working with other districts and schools across the country, focusing on schools and districts that have literally “doubled” student performance as measure by state tests over a 4-6 year time frame.
- We identified the major resource allocation issues the project was designed to focus help them with and shared our previous findings drawn from books we have written including Odden (2009) and Odden and Archibald (2009).
- We introduced the Strategic Budgeting Tool the morning of the second day showing them how each district's tool was tailored to their specific district. This included data on:
 1. School and school district enrollments and student characteristics

2. District and school level staff in the schools organized by the staffing categories of the OEBM model.

One of the objectives of the September meetings was for everyone to understand our perspective on the strategies – and their resource needs – that districts and schools across the country have mounted to boost student learning. The strategies and their resource needs provide the substantive basis for the staff and resources included in the Evidence-Based funding model, so we included a series of exercises designed to begin the process of reallocating resources to more effective education improvement strategies in each of the districts using district alike groups in some instances and job alike groups in other situations.

One goal of working with the districts was to identify major instructional program elements that needed to be addressed directly to ensure program effectiveness. Three areas where it was possible to find staffing efficiencies that enable resources (staff) to be reallocated for other strategic student learning priorities were identified:

- d. Finding time for teacher collaborative work. These districts, as well as many across the country, have decided that having teachers work in collaborative teams is a prime strategy to boost student learning. The goal for each district was to find at least three 45-minute periods a week with the ambitious goal of providing five 45-minute periods a week for teacher collaborative work, and to do this using current core and elective teachers in revised school schedules, with no extra staffing needs.
- e. Reviewing elective class offerings – both the number of electives offered and the class size of those electives. Most districts agreed that elective offerings had become excessive and there were opportunities to reduce– not eliminate – electives and use the additional staff time to meet other needs. The challenge here was to reduce the number of electives and/or increase the class size of electives to at least the average for core classes, recognizing that both of those actions might include changing the number of periods in the school schedule.
- f. Reviewing the strategies for providing extra services for struggling students, which included all services provided under federal Title I, Bilingual, and at least the learning disabled portion of special education, as well as any other services provided with local and state funds. Redesigning the way struggling students receive extra help is an area rich in possibilities for improving both the structure of the way struggling students are served and the staffing requirements for those services, thus creating greater efficiencies in resource allocation.

OEBM assumes a tiered Response to Intervention approach to services for struggling students, first giving all students Tier 1 high quality and effective instruction in the core program and in regular classes. Struggling students then receive Tier 2 interventions or extra help in groups of three to five, followed by one-on-one tutoring for a small percentage of students. Some combination of extended day tutoring and/or summer school programming can also be used to help struggling students. If needed after all other

support options have been found to be inadequate, the OEBM supports a Tier 3 placement in special education along with an IEP for the student.

We met with the district representatives for a third time in October, this time for one day. At that meeting we covered four topics that emerged from the discussions in September. The four topics were:

- Establishment of strong and transparent student performance goals at the district and school level
- Finding time for teachers to collaborate and using the Strategic Budgeting Tool to simulate options using alternative class sizes and varying numbers of core and specialist teachers to accomplish this goal
- Potential changes in elective course offerings included reductions in the number of elective classes offered, the class size of those electives and the possible options available to each district to change current elective course offerings
- Providing appropriate levels of service for struggling students including ways to restructure these services, and making sure all students in need of extra help have it available to them.

During this meeting, we also reviewed the Budgeting Tool with each district's team to ensure that we had appropriately entered all the district data and to begin the process of turning over control of the resource allocation simulation capacity of the tool to district staff. Over the course of the day, we asked each district to use the budget tool to identify alternative ways to:

Districts then began using the strategic budgeting tool to identify alternative ways to:

- Develop school schedules that provide teachers with collaborative time
- Rethink their elective offerings (as most districts agreed that they provided excessive elective courses)
- Analyze their staff and time structure to provide additional services for struggling students
- Seek out possible inefficiencies in current service strategies, and find different ways to provide those services in a more effective manner.

The tool allowed them to simulate the costs and effects of each new approach.

Relying on strategies embedded in the OEBM, research into resource allocation and general district strategies, the districts worked to identify within existing resources constraints:

- a. Time for teacher collaborative work
- b. Instructional coach positions (coaches have been found to dramatically improve the effectiveness of professional development)
- c. Teacher tutors and sufficient numbers of other intervention teachers to provide extra help for students struggling to meet performance standards, and
- d. English as a Second Language (ESL) teachers to adequately serve English language learners (ELL) in appropriately sized classes.

Our fourth meetings took place in November, where we again met individually for a half day with each district's team. The objectives for these meetings were to get much more specific, and using the Strategic Budgeting Tool, finalize multiple ways the districts could organize staff, and use time and resources in more effective ways to boost student academic achievement.

This document summarizes the results of this work with the four districts and outlines many of the strategies they developed to focus resources more coherently and tightly around the goal of improving student performance in all schools.