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## The Importance of Costing out a Quality Education in Ohio: *Why Evidence-based Should be Ohio's Choice*

### IN BRIEF

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Ohio's attempts in recent years to correct its unconstitutional school funding system, including the current building blocks model, have failed to connect funding levels to the resources needed to provide an adequate education. Ohio's legislature essentially still works backwards, identifying a pot of money to spend on public schools and then creating a formula to distribute it.

As Ohio again embarks on fixing its school funding system, it is clear that a costing-out model must be a central part of the effort to satisfy the mandates of the *DeRolph* rulings and public perception. The question then becomes which costing-out model will yield the best result for Ohio.

Four costing-out approaches have been employed in more than 50 studies in at least 38 states since 1991. Of these, the evidence-based model offers Ohio the best opportunity to benefit from an *objective, research-rich* approach to determine what is needed to provide a thorough and effective education system.

The evidence-based model ensures that research, not the preferences or potential biases of education stakeholders, is at the center of the school funding system. It offers a solid foundation of strategies drawn from schools that have doubled performance. The state should also consider incorporating aspects of the professional judgment approach, allowing any evidence-based study to be more clearly tailored to the state context.

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**I**n 1991, the Ohio Coalition for Equity and Adequacy of School Funding, an alliance of more than 500 school districts, filed a lawsuit (*DeRolph v. State of Ohio*) claiming that the state failed to provide a "thorough and efficient" educational system, as required by the Ohio

Constitution, by relying so heavily on local property taxes to fund schools. As part of its ruling in 1997, and in several other rulings since, the Ohio Supreme Court declared Ohio's school funding system inequitable and ruled it unconstitutional, directing the legislature to enact a

“complete, systemic overhaul.”

This complete overhaul was defined by four factors that contributed to this failed system, beginning with the elimination of “the operation of the School Foundation Program” that determined the per-pupil base support level. This one factor was critical to any school funding fix that might be attempted and called into question the adequacy of Ohio’s current school funding system.

In its ruling, the court concluded that the state’s funding level, as determined by the Foundation Program, was based on “residual budgeting” – not on the components of high quality educational opportunities or the needs of students. That is, that the state historically worked backwards to arrive at the level of state funding for public K-12 education by first politically determining the amount of funds to be appropriated and then deciding how they would be spent.

In the years since, Ohio has never successfully answered key questions raised by the court’s ruling: What does it cost to educate a child? What are the components of a high quality education? Ohio has not conducted a successful and accepted comprehensive study to determine the components of a high quality education or to ascertain a comprehensive set of outcomes for students, other than high-stakes testing in core subjects. Without fulfilling this component of the ruling, any school funding fix is likely to be deemed incomplete, leaving the constitutionality of the entire funding system in doubt.

### **A Look Back: Ohio’s Attempt at Costing Out**

In response to the first *DeRolph* ruling in 1997, Ohio lawmakers attempted to address the Foundation Program, hiring the consulting firm Augenblick and Meyers to complete a

costing-out study. Augenblick and Meyers used the *successful schools* model, which calculates the average expenditure for a pool of school districts determined to be successful and uses that as a base from which to set spending levels for all Ohio school districts.

To arrive at the pool, Augenblick and Meyers identified successful school districts as those meeting performance levels in reading, mathematics and writing at several grade levels, along with achieving high attendance rates and low dropout rates. They eliminated five percent of the highest expenditure and five percent of the lowest expenditure districts from the pool and determined the average expenditures of the remaining districts. In the end, they had a list of 102 of the state’s 611 school districts.

Through this method, Augenblick and Meyers calculated the cost of a quality education to be \$4,269 per pupil, which represented a 37.5% increase in per-student funding from 1996-97 to 2001-02.<sup>2</sup>

But both the trial court and the Ohio Supreme Court rejected this costing-out process, ruling that it did not fix the school funding system.<sup>1</sup> The study was determined to be inadequate as it did not account well for differences in student characteristics and had not successfully moved beyond residual budgeting. The approach assumed that with the same funds, schools with high percentages of at-risk students could perform at the same level as schools with fewer of those students. This was seen as a significant problem because of the difficulty in determining how much additional spending would be required to bring at-risk students to state standards.

It also relied on absolute indicators, espe-

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1. Smith, Steve and Petterson, Josiah.  
2. Coleman, Soncia.

cially proficiency test scores, that largely reflect circumstances beyond the control of the school system. Also, through the winnowing down of school districts used in the calculation of the model, critics felt that the 102 districts were not representative of the state.<sup>3</sup>

Another major shortcoming of this model was that it did not address the *components* of a successful school, such as class size, teacher quality, quality curriculum and full-day kindergarten. It simply identified a funding amount, without ensuring that any specific components were in place.

With funding amounts unconnected to resources, the process could be easily manipulated to produce a desired result by changing a few numbers. And, in fact, Ohio's legislative leaders rejected the experts' per-pupil cost (\$4,269) and derived a lower figure (\$4,034) by changing the criteria for selecting the pool of school districts. Legislative leaders then determined that the cost figure should be phased in over a four-year period and set the first year cost at \$3,850, ensuring that the final numbers fit into their state budget (i.e. residual budgeting).

### **Ohio's School Funding System Today: An Incomplete Fix**

In 2003, following the Supreme Court's final *DeRolph* ruling, then-Gov. Bob Taft assembled a 35-member Blue Ribbon Task Force to address school funding. Ohio's current system of funding schools is largely derived from a selection of the recommendations from this task force, which was passed into law in its current form in 2007. The current system is built on a *building blocks* model, which breaks aid into three main categories:

- base cost – teacher salaries and benefits, other personnel and non-personnel support.

- base cost supplements – professional development, data-based decision making, intervention services
- variable categorical costs – poverty-based assistance, gifted and special education, transportation, career technical education, teacher experience and training adjustment, adjustments and guarantees.

This new building blocks model replaced the basic foundation model and was in part conceived in the context of the No Child Left Behind Act (NCLB) of 2002, which emphasized a more standards-based, accountable, data-driven education system.

In the building blocks model, the distribution of state aid to traditional public schools is calculated from a basic aid amount intended to provide an adequate education for each student (base cost and base cost supplements). The state provides additional funds for districts that, due to the nature of the district or needs of its students, require greater resources.

While the building blocks model has helped determine more appropriate levels of funding – adding poverty-based assistance and increasing school funding by \$270 million over two years – it has not been deemed sufficient in ensuring adequacy and was not considered a complete overhaul of the system. Members of the Blue Ribbon Task Force recognized the limitations of their own work as their report states:

*One of the areas of greatest debate among Task Force members centered on the size of the foundational building blocks before adding the supplemental elements proposed in this report. Whether each foundational building block dollar amount is sufficient to support a student's success is very difficult to assess. Task Force members could not achieve consensus on whether the starting dollar*

3. Benton, Joshua.

*amount of the foundational building blocks is appropriate. Some members suggested approaching this issue by simply costing out the inputs required to provide some well-defined type of education. Other members disputed this approach, arguing that a costing-out process does not accommodate the concept of efficiency and that a mix of inputs does not necessarily guarantee a particular result. . . . . The Task Force recognizes that the debate over foundational building blocks must continue.<sup>4</sup>*

So, while the task force came up with additional funding and set the policy to support some proven components (e.g. data-based decision making), in the end it did not attempt a comprehensive costing-out process to arrive at the base cost number.

The education community recognized the gains that were made in this effort but was quick to state that the education funding provisions “do not appropriately meet the needs of education in Ohio,” with critics saying that the bill simply “rearranges funds for education.”<sup>5</sup>

Simply put, even with this improvement, the per-pupil funding level continues to have no relationship to the cost of an adequate education. Ohio’s legislature essentially still works backwards, identifying a pot of money to spend on public schools and then creating a formula to distribute it.<sup>6</sup>

### **Step in Right Direction: Recognizing the Importance of Research and Data**

While the Blue Ribbon Task Force did not fix the school funding system, the task force was aware of the importance of moving towards a system that reflects what works and relies on educational research to determine the components of a quality education.

One of the recommendations of the Blue Ribbon Task Force was that “School funding levels should be based on ‘inputs’ – the ‘evidence-based’ strategies, services and programs that are proven effective in enhancing student success.” The task force recognized that these evidence-based inputs should be incorporated into the formula for the base cost, stating that “continuing consideration should be given to research-based practices that must form the basis for determining the appropriate costs associated with educating students.”<sup>7</sup>

While the building blocks model as implemented was not a complete fix of the system, it was a step in the right direction, moving the emphasis away from relying on aggregate student spending levels and toward reviewing the critical components, inputs and education activities that need to be funded to drive achievement for all students.

The task force recognized the importance of incorporating the evidence of what works into the funding model. Where it came up short was in the failure to perform a costing-out study to arrive at the reasoning for its base cost. Without a more comprehensive examination of the key components of a quality education and their costs, the model was regarded as only a partial fix. Thus, calls to fix Ohio’s school funding system continue to this day.

### **Costing Out Approaches: A Comparative Review**

Studies that cost out a quality education are recognized as the key component to arriving at a funding level deemed acceptable and adequate

4. Blue Ribbon Task Force Final Report.

5. Shaner, Barbara testimony.

6. Carr Smyth, Julie.

7. Blue Ribbon Task Force Final Report

by the courts and many education stakeholders.<sup>8</sup> Any fix in Ohio will seem incomplete without this component clearly vetted. The question then becomes which costing-out model will yield the best result for Ohio.

Four costing-out approaches have been employed in more than 50 studies in at least 38 states since 1991:

- successful schools
- cost function
- professional judgment
- evidence-based

Each has benefits and drawbacks.

### *Successful Schools Approach*

As discussed earlier in this paper, the *successful schools* (or empirical) approach identifies school districts that are currently meeting state standards and then uses their average expenditure amount as a fair estimate on which to base the actual cost of an adequate education. The advantages of this model are that it is relatively straightforward and easy to explain, inexpensive, and draws from actual state districts.

Its major drawback is that it does not consistently identify successful schools or provide information on how to replicate their success.<sup>9</sup> Often many atypical districts are excluded from the analysis, with the successful districts usually being relatively homogeneous. Also, there is no guarantee that the successful schools identified in the calculation are spending their dollars as efficiently as possible. Additionally, the successful schools model makes the faulty assumption that schools can be scaled up to emulate successful schools at no additional cost.

The successful schools model also does not identify the educational delivery system, which allows it to be easily altered by state lawmakers to produce a desired result, as was true in Ohio's

case. In the end, successful school studies often find little difference in expenditures between schools that beat the odds and those that do not.<sup>10</sup> This model is not currently being used by any state as the sole method of costing out as the disadvantages have led to too much controversy.<sup>11</sup>

### *Cost Function Approach*

The *cost function* approach applies econometric models to determine how much a given school district would need to spend, relative to the average district, to obtain a specific performance target, given the characteristics of the school district and its student body.

The advantages of this model are that it clearly links a cost level to a result level, can be updated and replicated easily, and controls for key factors affecting cost differences.

However, this approach is not widely used as it requires extensive data that often are not available. Also, even if the data were available, there are limitations of using this model for estimating resource allocation. While it provides a dollar amount, it gives no indication of a delivery strategy.

Similar to the successful schools model, cost function models assume that most schools could achieve the gains of the average school given the student composition, which again is not a justified assumption.

### *Professional Judgment Approach*

The *professional judgment* approach relies on a panel of professionals to design an educational

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8. Although in Ohio's case, the court has removed itself from this matter.

9. Loeb, Susanna.

10. Loeb, Susanna.

11. Odden, Allan, Anable Aportela, Sarah Archibald, and Michael Goetz.

program that would meet proficiency goals and identify all the specific resources necessary for its success. With a basic prototype established, the panel then determines what extra resources would be needed for specific types of students, such as those from low-income families, students with disabilities or English-language learners, to ensure they receive an adequate education.

A newer approach to this model incorporates a budget simulation and a survey of a random group of educators (teachers, principals and superintendents). Its advantages are that it uses highly qualified educators and multiple panels to increase the validity and reliability of study findings, and it is often a very transparent process.

The major drawback of the professional judgment approach is that it is subject to incentive bias. That is, the model relies on professional educators who would benefit directly from increased resources for their schools. Therefore they have an incentive to overestimate and inflate resource needs associated with a given outcome.

Also, because this model draws from the knowledge of current educators, it may miss important innovative and effective strategies or options beyond their knowledge. There is also no clear link made to student learning gains and no guarantee that the proposals are backed by research. Finally, professional judgment studies require considerable time to conduct and are expensive.

The newer approach has corrected some for overspending (through the budget simulation) and limitations on outcomes (by including more respondents), estimating various resource needs that are closer to current outcomes. However, as was found in two recent studies in California that compared the older expert panel approach with the newer budget-simulation approach, the results were very similar.<sup>12</sup> The only notable

difference was that the simulation approach gave cost estimates for a greater range of outcomes and made a stronger relationship between student poverty and resource needs.

### *Evidence-based Approach*

The *evidence-based* (or expert judgment) approach relies on research into effective educational practices and the judgment of experts who have developed or analyzed these practices to determine appropriate levels of spending. It identifies effective programs and practices to determine what works to improve student performance, selecting only methods that are supported by solid research evidence or best practices.

This model produces a detailed staffing recommendation for a prototype school to address all key educational issues. The advantages of this approach are its reliance on best practice research, the possibility for a quick turnaround, a lower cost and its detailed specifications for prototype schools.

The primary criticism of the evidence-based model is that the research base is currently lacking conclusive evidence for some of the educational interventions. This is in part because in some cases there are no examples of achievement at the goal levels currently set for many states, as per NCLB. Also, in some cases there is a lack of data available to evaluate resources.

### *Adequacy Approach Comparison*

While the cost-function and successful schools models base their calculations on the average cost of a successful school or district, the professional judgment and evidence-based approaches identify the components within a school district that are deemed successful and then identify a cost for those components. Ar-

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12. Sostelie, Jon.

iving at their calculation by determining the components of a quality education, the professional judgment and evidence-based models offer more detailed and targeted recommendations to ensure increased student performance. The evidence-based approach is more in line with the education policy driving NCLB, which emphasizes examining the data, evidence and strategies proven improve student performance.

The professional judgment and evidence-based models are similar in that they assume that resources will be used for specific purposes. They both create a prototypical school, bringing together the elements deemed essential to providing a successful program. They both identify the educational delivery strategies that can produce the desired results and much more detailed specifications than are included in the other two models. They both strive to provide the resources to determine the most powerful educational strategies for a school or district.

Where the professional judgment and evidence-based models differ is in how they arrive at the components of a quality education. While the professional judgment approach draws on the opinions of educators to compile these elements, the evidence-based approach starts with research and examples of what works, then incorporates these strategies into its model. Also, the professional judgment model takes considerably more time and consequently is more expensive.

Adequacy studies are far from an exact science and no one method has dominated over the others as the best. Even within one state, alternative methods of costing out usually identify differing levels of expenditure to fund an adequate program, with the results of these studies sometimes varying substantially.<sup>13</sup> Also, research has shown that simply increasing funding will not improve student performance.<sup>14</sup> However,

targeting increased funding on certain programs and practices such as teacher quality, lower class sizes and early literacy programs *can* improve student performance. Essentially, the debate has moved from “does money matter?” to ensuring that existing funds are being spent effectively and determining if additional targeted resources are necessary.

### **The Evidence in the Evidence-Based Approach**

Created by Allan Odden and Lawrence O. Picus, the evidence-based approach relies on research findings to develop three prototype schools (one each for elementary, middle, and high school), including the resources and specific strategies that should and should not be employed to improve achievement and ensure an adequate education. The evidence-based approach creates a set of ingredients and services, identified through research, that would deliver a high-quality, comprehensive, schoolwide, instructional program, and would determine an adequate expenditure level.

This model is created for states to set their base state funding per student, or foundation amount, at a level that ensures a high-quality educational program. Most evidence-based studies require increases in education funding over the existing levels.

Evidence-based studies have identified some strategies that work, including:<sup>15</sup>

- a rigorous curriculum program
- intensive professional development for teachers, including school-based instructional coaches
- strategies to help struggling students, includ-

13. Picus, Lawrence O.

14. Smith, Steve.

15. Odden, Allan and Picus, Lawrence O., *Primer*.

ing as the first intervention individual and small-group tutoring and followed up with academically focused extended-day and summer school programs for some students

- class sizes of 15 in grades K-3

The approach also has found that successful schools:<sup>16</sup>

- use data to drive decision making, including state tests and curriculum-focused, formative assessments
- engage teachers in collaborative work centered on the instructional program
- establish a professional school culture
- orchestrate efforts at the district, school and teacher leader levels toward improving the academic achievement of every student

Additional key guiding components/principles of the evidence-based approach include:<sup>17</sup>

- analysis of data for continuous improvement
- providing extended learning opportunities and personalized learning environments so all students achieve to high standards
- holding performance standards high
- restructuring teacher compensation
- paying teachers individually for what they know and can do, and collectively for improving student learning
- ensuring a rigorous curriculum program in all core content areas
- focus on teaching critical thinking skills

### Four key aspects of funding reform

The evidence-based approach has identified four aspects of funding adequacy.<sup>18</sup>

- **Identify what it takes to dramatically improve student performance.** The approach assumes educators have sufficient information to be specific about this, with the evidence-based model a good summary of that evidence.

- **Cost out those strategies.** The evidence-based model offers a solid place to start, providing states with what currently is the most reasonable adequacy cost estimate. States could start with this level of resources and make sure this amount is used effectively before adding more resources.
- **Surround any school finance reform based on an adequacy study with a sharp accountability system.** This would hold students, teachers, schools and districts appropriately accountable for results, so that there is at least some pressure, other than local discretion, to use resources for the most effective strategies.
- **Establish some constraints to ensure that schools use key resources as part of a strategy to double student performance.** These resources can include instructional coaches, tutors and formative assessments for data-based decision making.

### How could the evidence-based approach be applied in Ohio?

In a recent article for KnowledgeWorks Foundation, Allan Odden and Larry Picus suggested an approach that would focus on the resources it takes to “double” the performance of Ohio’s students over the next 4-6 years, rather than what it would take to educate all students to Ohio’s proficiency standards.

They wrote, “This goal is still ambitious, though more achievable than the rhetorical goal of educating all students to high standards embedded in Ohio’s reforms and most adequacy studies.”

16. Odden, Allan and Picus, Lawrence O., *Primer*.

17. Odden, Allan, Lawrence O. Picus, Michael Goetz, Michelle Turner Managan, and Michael Fermanich.

18. Odden, Allan and Picus, Lawrence O., *Primer*

This approach would consist of:

1. Reviewing the evidence from research and best practice on what programs work in education, i.e., produce student learning gains.
2. Studying schools and districts that have dramatically increased – what is rhetorically called doubling – the level of student performance over a four- to six-year period.

### **How much more would an evidence-based approach study cost Ohio?**

While evidence-based studies have usually required increases in state education funding, Odden's most recent research, completed for the School Finance Redesign Project and published in the journal *Education Finance and Policy*, examines national demographic data and national average prices to cost out an evidence-based model that could ensure doubling student performance.<sup>19</sup>

The research found that the total cost of the model is close to the national average expenditure per pupil, meaning that “the nation's investment in K-12 education is almost enough to adequately fund an education program that can double student performance.” States spending below the average would likely need additional money for their schools, while those spending above probably would not.

Below is the model that was used as the basis for the 1998 final state Supreme Court decree in the 25-year-old school finance litigation in New Jersey that can serve as an example of how research comes together to create a prototypical school.

The services and ingredients required for adequately funding a school, based on a school of 500 students, were:<sup>20</sup>

- 1 principal
- 2 instructional facilitators, coaches or mentors
- Preschool for three- and four-year-olds, at least for children from lower income backgrounds, with a teacher and an educational assistant for every 15 students
- Teachers for a full-day kindergarten program
- Teachers to provide for class sizes of 15 students in grades K-3 and 25 for all other grades
- An additional 20% of teachers to provide for planning and preparation time for the above teachers and to teach art, music, physical education and other noncore academic classes, with the requirement that a substantial portion of such time be used by regular classroom teachers for collaborative instructional improvement work
- Tutors (professionally licensed teachers) for struggling students, at a rate of one tutor for every 20% of students from low-income backgrounds, with a minimum of one tutor for each school, which should provide sufficient resources to serve slow learners, mildly disabled and/or English language learning students
- Sufficient funds for all severely disabled students
- An additional \$2,000 per teacher for the training component of professional development (the above facilitators provide the ongoing coaching within the school)
- About \$250 per pupil for computer technologies (hardware and software) to cover purchase, upgrades and repairs
- One to five positions for a pupil support/

19. Odden, Allan R., Michael E. Goetz, and Lawrence O. Picus.

20. Odden, Allan, Phi Delta Kappan.

family outreach strategy, with one position for each 20% of students from low-income backgrounds, with a minimum of one position

- Other resources for materials, equipment and supplies; operation and maintenance; and clerical/secretarial support.

According to Odden, the funding levels determined here would “allow schools to deploy just about every strategy research has shown to have statistically significant impacts on student learning, and to deploy just about any comprehensive school reform model that exists.”<sup>21</sup>

A variation of this approach was used for Wisconsin (Norman, 2002). This approach was also the basis for a recommendation to the Kentucky State Board of Education (Odden, Fermanich & Picus, 2003) and is the method being used for a Joint Legislative Committee in Arkansas. The most recent work reflecting the evidence-based model was for the state of Washington.

### **Recommendation:**

*Employ the evidence-based method to determine an adequate amount of funding in Ohio.*

As Ohio again embarks on fixing its school funding system, a costing-out model must be a central part of this effort to satisfy the mandates of the DeRolph rulings and general public perception. Ohio has already attempted the successful schools approach unsuccessfully, falling victim to the adjustments by the legislature, among other shortcomings. Also, like many other states, Ohio lacks the data to perform an effective cost-function study. This leaves two approaches – professional judgment and evidence-based. Of these two, the evidence-based approach offers Ohio the best opportunity to benefit from an objective, research-rich approach to determine

what is needed to provide a thorough and effective education system – and then determine the associated costs.

The evidence-based approach ensures that research and evidence, not the preferences or potential biases of education stakeholders, is at the center of any educational components of the school funding system. It offers a solid foundation of recommendations based on proven strategies, drawing its research from various research methods (randomized trials, quasi-experimental designs and meta-analyses) and focusing on results from schools that have doubled performance. This research examines how students learn, what are the resource dimensions of programs that work and how schools that have doubled student performance are using their resources. Additionally, as No Child Left Behind has shifted the focus to evidence-based practices, this approach will help provide the guidance to districts and schools about ‘best practices’ and can help ensure accountability.

While the evidence-based approach will offer an objective research-based core, the state should consider whether, when and how to incorporate the professional judgment approach into its school funding fixes. Research has shown that using more than one costing-out approach is beneficial.<sup>22</sup> In Arkansas’ evidence-based study, two large professional judgment panels were employed to advise the legislature and the consultants about the adequacy of the model to enable students to meet the state’s proficiency standards. By incorporating a professional judgment component, any evidence-based study can be more clearly tailored to the state context and help ensure that Ohio has the best estimate possible.

21. Odden, Allan, Phi Delta Kappan  
22. Picus, Lawrence O. and Blair, Leslie.

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