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ADEQUATE FUNDING OF EDUCATION IN GEORGIA: WHAT DOES IT MEAN, WHAT MIGHT IT COST, HOW COULD IT BE IMPLEMENTED?

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Executive Summary

I.   Introduction

In September 2004, the Consortium of Adequate School Funding in Georgia filed suit in state court claiming that the state's school funding system violates the education provision of the state Constitution. In particular the complaint argues that the State of Georgia is not providing an "adequate public education" as specified in the Constitution. In this report we consider the following questions: what does an "adequate public education" mean, how might it be measured, what might it cost, and how can the State ensure that adequate resources are available to all students?

II.   The Concept of Adequacy

Current education funding models are input or resource driven. The essential question that is addressed is, how much money can we afford to spend on education? Given that amount of money or resources, some level of education performance is achieved. Adequacy, on the other hand starts with the question, what is the desired level of education performance? Given the desired education performance, the level of expenditures necessary to achieve that education objective is determined. That expenditure level is said to be "adequate".

There are four basic steps in determining what resources are adequate for education.

Step 1: Set education goals.

Step 2: Establish performance standards by translating the goals into measurable outcomes and setting the objectives for those measures. The outcome measures are typically based on some standardized exam or set of exams, but could include measures such as graduation rates.

Step 3: Determine the resources and programs that are required to achieve that performance standard. This is clearly the hardest step to implement, as will be seen below.

Step 4: Determine the cost of the required resources.

III.   Approaches to Measuring the Cost of an Adequate Education

We focus just on step 3. There are four general approaches that have been used to develop estimates of the resources that are necessary to provide an adequate education.[1]

Professional Judgment Approach

The Professional Judgment Approach has been one of the most commonly used methods for estimating the cost of an adequate K-12 education, having been used in at least 14 states. As the name suggests, the Professional Judgment Approach relies on the opinions of experienced and accomplished professional educators, and other experts involved with cost-management of K-12 education. These teams of education leaders are asked to consider prototype schools that represent different grade levels and different composition of students. The teams are asked to determine what resources are necessary for the prototype school to reach the education standards that have been established.

The cost of providing these resources is then estimated, usually by the individuals conducting the study, to ascertain the adequate level of funding. Adjustments to this amount are made to account for differences in the make-up of the student bodies across districts and for other factors that cause the required resources or the cost to differ across school districts.

There are several concerns associated with this approach. First, while these panels of experts might be provided research on the effect of various educational strategies on student performance, the approach essentially relies on the personal experience of the members of the panel. Second, panel members are not necessarily impartial participants. Third, since the panel has no financial constraint, there is nothing to limit the resources or programs that the panel might suggest.

Fourth, panels are not usually asked to consider how the educational strategies that are recommended for the prototype school should be changed for less typical schools, including those with high concentrations of high- or low-performing students. Thus, the adjustments are some times ad hoc.

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[1] For a good discussion of the various approaches see ACCESS (undated).

Finally, it is hard to believe that the panels can distinguish between the resources required to achieve a standard of, say, a 70 percent pass rate on an exam from an 80 percent pass rate. Furthermore, the panel members may have a personal view as to what the standard should be, and propose resources accordingly.

Best Practice Approach

The Best Practice Approach relies on what research suggests are the best strategies for improving the likelihood that students will achieve the desired educational outcome. The best strategy can differ by grade and by student characteristics. This approach borrows heavily from the lessons learned from school reform models that have proven effective, and from the judgment of "experts" who have developed and analyzed those models

The principal concern with this approach lies in the reliability of and ability to generalize the research results. First, some strategies, for example, class size reduction, have been extensive researched, while other strategies have received less much attention. Second, it is generally not possible to use the research to specify a specific level of resource, e.g., the student-teacher ratio, that would be optimal. Third, the empirical evidence on some forms of whole school reform, which is one type of best practice, is based on a small sample of schools that have implemented whole school reforms. Thus, there is not strong evidence as to their effectiveness. Furthermore, schools that adopt whole school reforms could be atypical, and thus the results from implementing whole school reform may not apply to the typical school.

Successful School District Approach

The Successful School District Approach is a kind of statistical bench-marking of school districts. In this method, school districts that have achieved the specified educational standard, and are not outliers in terms of expenditures per student, are identified. The weighted average expenditure per student for those school districts provides the estimate of the per pupil expenditure required to achieve a similar level of student performance in other school districts.

The main criticism of this approach is that the school districts that are used to determine the benchmark expenditure level are not likely to be representative. This is particularly the case if the educational standard is set at a high level, since school districts that typically meet high educational standards are those with low numbers of at-risk students. Thus, the average expenditure per student for these school districts may not represent the resources required for school districts with a more representative number of at-risk students. Furthermore, this approach provides no basis for adjusting the adequacy expenditure level for differences in student characteristics.

Use of the average expenditure per pupil for the sample of successful school districts is an arbitrary choice for the estimate of an adequate per pupil expenditure. There is no basis why the average, rather than say the lowest or highest per pupil expenditure, should be considered the expenditure per pupil required to provide an adequate education.

Cost Function Approach

The Cost Function Approach relies on relatively complex regressions. This approach differs from the Successful School District Approach in that it attempts to determine not only how the level of spending is correlated with academic success, but also how the level of per-student expenditures required to achieve a certain level of education performance varies with the school districts' characteristics, including differences in the composition of the student population. It is really just a sophisticated version of the Successful School District Approach.

The Cost Function Approach involves estimating a regression equation. In that equation the variation in expenditures per student across school districts is regressed against a set of variables that are thought to explain the variations in expenditures per student. These explanatory variables include education performance measures, measures of student characteristics such as percent poor, cost factors, etc. The estimated regression equation can be used to predict the increase in expenditures per student that are required to achieve a certain performance level.

One of the concerns with this approach is that it is quite complex and thus most policy makers have a difficult time understanding the approach.   Another problem is that the approach requires extensive state-wide data on district-level per pupil school expenditures, student performance, and various characteristics of students and school districts. A third problem is that the approach takes the strategies currently in use as given in determining the required expenditures; something that it shares with the Successful School District Approach.   No state has relied on this approach to establish its school funding program, although such studies have been conducted for New York, Wisconsin, Illinois, and Texas.

IV.   The Cost of an Adequacy Education in Georgia

Because Georgia has not completed an adequacy study, we use some of the studies conducted for other states to develop an estimate of the increase in education funding that might be required in Georgia to achieve an adequate education.

We selected the 16 adequacy studies for other states that provide an average expenditure per student for a representative group of students.[2] The range of required expenditures per students is from $6,302 to $9,412 for FY 2004.   The mean expenditure per student for these 16 studies is $7,600 and the median is $7,561. We selected $7,500 per student as the estimate of what Georgia might have to provide to ensure it is providing an adequate education.

It is important to understand what the $7,500 represents. It is the *minimum* expenditure per student averaged across a representative set of students, and thus, allows for special learning programs. It does not mean there will be no variations in expenditures per student by program type and school level. The expenditures are for standard education programs and associated expenses such as administration, but do not include funding required for construction or special programs such as school nurses, nor does it include federal funding such as Title I.

For FY 2004, Georgia (state plus local systems) had general fund spending of $10,084.2 million for the 1,498,777 students, or $6,728 per student (2003-2004 Annual Report Card). To increase spending in school systems that in FY 2004 were

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[2] As reported by *Education Week* (2005), page 39.

spending less than $7,500 to $7,500 would have require an increase in FY 2004 spending of $1,193 million, an increase of 11.8 percent in total state and local education expenditures.

V.   Ensuring That All School Systems Have Adequate Resources

Assume that $7,500 is the expenditure per student (in FY 2004) required for an adequate education. The State then has to ensure that every school system has at least $7,500 per student. There are at least two ways to achieve this objective. First, the State can mandate that each local school system spend at least $7,500 per student. Mandating that school systems spend at least $7,500 per student is tantamount to requiring low-spending districts to increase property tax rates. This would require an increase in property tax revenues of $1,193 million, an increase of about 5 mills on average, assuming no increase in State government funding.

The other option is for the State to set the QBE foundation level (i.e., QBE earnings) at $7,500. To increase minimum revenue per student to $7,500 the State would have had to increase its FY 2004 spending of $5,501 million by $4,533 million, or by 82.4 percent. We expect that if the State increased its funding by 82.4 percent, local school systems would reduce their property tax rates. Based on some assumptions, we estimate that property taxes would decline by no more than $3,130 million.

The State can shift some of the required $4,533 million increase to local school systems by increasing the required local contribution to, say, 10 mills or to 15 mills. The required increase in State spending would be $3,327 million if local school systems had to contribute 10 mills, and $2,120 million if school systems had to contribute 15 mills.

VI.   Summary

Adequate education expenditures are what are required to achieve specified educational objectives, such as a specified pass rate on some exam. While defining adequacy is relatively easy, measuring it is another thing. Several methods have been used to estimate the cost of providing an adequate education, but none of them is

without its flaws. Based on adequacy studies for other states, we selected a per student expenditure of $7,500 (for FY 2004) as a reasonable estimate of the cost of providing an adequate education in Georgia.

To achieve a minimum per student expenditure of $7,500 for all school districts, would have required an increase of 11.8 percent in total state and local spending on education. This increase is before any adjustment for inflation and enrollment growth. This would be a challenge, but not a huge one. To ensure that all school systems in the State have $7,500 per student, the State would either have to require a sizable increase in local property taxes, 5 mills on average, or increase its expenditures on education by up to 82.4 percent, which would allow a substantial reduction in property tax, or some combination of the two.

No one knows when or how the Georgia Supreme Court will ultimately rule on the compliant brought by the Consortium of Adequate School Funding in Georgia. But given that most states have lost adequacy suits, the likelihood that Georgia will lose its case is high.

The State has several options, but choosing among these options is not easy. The State can assume that it will win the case as it did in 1981, and thus not do anything until the Court rules. (Simply ignoring the issue is tantamount to assuming the State will win.) If the Court does rule in the State's favor, the State will have no legal requirement to make any changes in the education funding level. However, if the Court rules against the State, the State will be directed to implement changes in education funding, and perhaps major changes. At that point the State can either follow the Court's ruling or resist the Court, as many other states have done.

Alternatively, the State might assume that the Court will rule against it. In this case, the State could choose to begin to address the issue by slowly moving toward an adequate funding of education. But if the Court then rules in favor of the State, the State will have increased education spending to a level that may not have been necessary.

Deciding how to proceed is a very difficult decision since there is no one correct decision. It is also a very important decision since the expenditures at issue are very substantial.

Adequate Funding of Education in Georgia: What Does It Mean, What Might It Cost, How Could It Be Implemented?

I.   Introduction

In September 2004, the Consortium of Adequate School Funding in Georgia filed suit in state court claiming that the state's school funding system violates the education provision of the state Constitution.[1] The Georgia Constitution states, "The provision of an adequate public education for the citizens shall be a primary responsibility of the State of Georgia." (Art. 8, § 1, ¶ 1.) The complaint argues that, "A primary obligation of the State of Georgia under the Georgia Constitution is to provide an adequate public education for the children of Georgia. The children of Georgia are also guaranteed an equal opportunity for an adequate education by the equal protection requirements of the Georgia Constitution." (pp 2-3)

This report addresses the issues of what an "adequate public education" means, how it might be measured, what it might cost, and how the State can ensure that adequate resources are available to all students. We begin with a brief review of school finance litigation. Then in Section III we address the concept of adequacy, while in Section IV we discuss the four different methods that have been employed to measure the cost of an adequate education. In Section V we present a summary of the results of adequacy studies that have been conducted in other states. Since no such study has been conducted for Georgia, in Section VI we use the existing studies as the basis for a discussion of what the cost of an adequate education in Georgia might be. Finally, we discuss options for how the State might change the QBE (Quality Basic Education) in order to ensure that each school systems has adequate resources. A summary section concludes the report.

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[1] A copy of the suit can be found at the Consortium's website, www.casfg.org.

II.   School Finance Litigation

While there was litigation regarding education financing prior to 1970, the 1971 *Serrano v. Priest* case in California is considered the first of the modern era.[2] Since that time, public education funding lawsuits have been brought in all but 5 states (Delaware, Hawaii, Mississippi, Nevada, and Utah; a case brought in Indiana was withdrawn after the state adopted a new funding system).[3]

The cases brought in the 1970s and 1980s are known as equity cases and were brought under the equal protection clause of the states' constitutions. The first of these lawsuits focused on the level of inequity of available resources, for example, large differences across school districts in property wealth per student. Later equity cases focused on differences across school districts in the level of expenditures per student. In about two-thirds of these equity cases the defendant (i.e., the state) won, including Georgia in the 1981 *McDaniel v. Thomas* case.

A major shift in the nature of education funding lawsuits occurred in the 1989 Kentucky case. In *Rose v. Council for Better Education*, 790 S.W.2d 186, the state Supreme Court declared Kentucky's entire system of common schools unconstitutional. The court ordered the General Assembly to provide funding "sufficient to provide each child in Kentucky an adequate education" and to reform the property tax system. This was the first of the education financing lawsuits that relied on adequacy as the basis for the suit.

Since 1990, adequacy has been the basis for education finance lawsuits. As of February 2005, adequacy suits had been brought in 32 states. Of those, the state won 9 cases and lost or settled 18 cases; 5 cases are still in process (Griffith and Burke 2005).

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[2] For a discussion of education finance litigation, including the early cases, see Wood and Thomson (1996). Other than one case in Texas, all of the suits have been based on state constitutions.

[3] For a list of court cases and their outcomes, see "Outcomes of Education Finance Litigation as of April 2005," available at http://www-cpr.maxwell.syr.edu/efap/HelpingChildrenLeftBehind/ RevisedAppendixA-1.pdf (accessed August 9, 2005)

III.   The Concept of Adequacy

Current education funding models are input or resource driven. The essential question that is addressed is, how much money can we afford to spend on education? Given that amount of money or resources, some level of education performance is achieved. Adequacy, on the other hand starts with the question, what is the desired level of education performance? Given the desired education performance, the level of expenditures necessary to achieve that education objective is determined.   That expenditure level is said to be "adequate."

The difference between the resource driven model and the adequacy model and the issues involved in determining adequacy can be illustrated by considering a simple program that provides grants to homeowners to pay for heating their house during the winter. The resource driven approach would ask, how much can we afford to take out of the state budget for such a program? Given that level of funding, the size of the grants would be determined and then allocated to homeowners. Homeowners would then heat their homes based on the available financial resources.

The adequacy approach, on the other hand, starts by determining the goal for the program. The goal might be to prevent residents from freezing to death, or to make the owners "comfortable", or to make them "warm and toasty".

Once this goal is set, the next step is to quantify it. For the heating program, setting some minimum temperature is one obvious way of quantifying it. Suppose we decide we want the owners to be "comfortable" and that a room temperature of 68 degrees would achieve that goal.

Given the objective of 68 degrees, the next step is to determine how much heating oil, natural gas, or other energy source is needed to achieve that temperature. The amount of energy needed to achieve a temperature of 68 degrees for a given house will depend on several factors, including the weather (over which the owner has no control), how big the house is, how well insulated it is, and whether someone consistently leaves the front door wide open.

Should all of these factors be taken into consideration in determining the adequate amount of energy that will be provided to the owner? Consider first the factors outside the control of the owner, for example the weather and the price of

energy. Fairness principles suggest that the program should adjust for those factors. But how should the other factors be incorporated into the decision? For example, should the grant be based on the actual house size or an average size house, on the actual amount of insulation or an appropriate amount, on the actual behavior regarding the front door or on the assumption that the door is normally kept closed? These are no obvious correct answers to these questions; arguments can be made on either side.

Once the adequate level of energy is determined, multiplying that quantity by the price per unit of energy yields the size of the grant that would have to be provided to assure that the person had an adequate amount of heat.

But before turning to education funding adequacy, it should be noted that neither the resource approach nor the adequacy approach is consistent with rational economic decision making. To make an economically rational decision, we would not set the desired temperature without knowing the cost of the resources necessary to achieve it. Nor would we decide to spend a given amount of money on heating grants rather than some other program without knowing what would be achieved. For example, if the price of energy was to double, we might say that "comfortable" should be 65 degrees, not 68 degrees. And, if we were a poor state, we might say that 62 degrees would be just fine. In essence, adequacy requires us to set some objective without knowing the cost.

There are four basic steps in determining what resources are adequate for education.

Step 1: *Set the education goals*. These are usually aspirations statements and typically are somewhat vague. The National Conference of State Legislatures (1998) (NCSL) lists several alternative sets of goals that were proposed in New Hampshire by various organizations. Some goal statements make reference to developing responsible and productive citizens. For example, one of the goal statements was:

> Guarantee that students will graduate with the academic and vocational skills and attitudes necessary to become positive caring and contributing members of our current and future society.

Other goal statements refer to the development of educational skills, for example:

> Emphasize educational programming and learning resources which allow all
> students to function in all aspects of written and verbal communications,
> mathematics, sciences, foreign languages, and the fine arts.

Step 2: *Establish standards*. Setting performance standards requires
translating the goal statements into measurable outcomes and setting the objectives
for those measures. The outcome measures are typically based on some standardized
exam or set of exams, but could include measures such as graduation rates.

There are two aspects to the standard. First, some minimum level of
performance, for example a certain score on a standardized exam, is set. Second, the
percentage of students who are expected to achieve that performance level is set.
One could follow the example of No Child Left Behind, for which all students are
expected to achieve the performance standard. An alternative is to set a certain
percentage of students who will achieve the performance standard. Many times the
later is stated with less specificity; for example, the NCSL's statement that an
adequate financing system is one that "provides every student a reasonable
opportunity to accomplish clearly articulated and measurable educational objectives."
(p. 3)

Step 3: *Determine the necessary resources*. Once the performance objective
is set, it is necessary to determine the resources and programs that are required to
achieve that performance standard. This is clearly the hardest step to implement, as
will be seen below. One approach to this is to estimate the required resources for a
prototype school or district that represents a typical mix of students. Adjustments are
then made for schools that have larger concentrations of special education students,
English language learners, and students in poverty. The most significant resource is
teachers, and thus one of the major decisions is to determine the required student-
teacher ratio for each grade and ability level, as well as determining the required
teacher quality. Other resources such as administrative expenses, teacher aids,
library, technology, materials, etc also have to be determined.

Step 4: *Determine the cost of the required resources*. Given the resources
required, the cost depends on the prices of resources. The resource with the greatest
impact on cost is teachers, and to determine adequacy, it is necessary to determine

what school districts have to pay for a teacher of the desired quality. Actual teacher salaries differ across districts because some school systems have to pay more to attract teachers and some school systems choose to pay higher salaries. As was suggested above, in calculating adequacy adjustments should be made for differences in what school systems have to pay, but not for differences resulting from what they choose to pay.

IV. Approaches to Measuring the Cost of an Adequate Education

The four steps outlined in Section III provide a logical framework for conducting an adequacy study. Steps 1 and 2 (see Section III) involve the development of state specific policy statements. Steps 3 and 4 involve translating those policy statements into estimates of adequate resources. In this section we focus on steps 3 and 4. There are four general approaches that have been used to develop estimates of the resources that are necessary to provide an adequate education.[4] In this section we describe each of these four approaches and discuss the limitations of each. For each approach we summarize a published study that used that approach. It should be noted that most studies focus on one method, but usually include estimates obtain by using other methods.

Professional Judgment Approach

Overview. The professional judgment approach has been one of the most commonly used methods for estimating the cost of an adequate K-12 education, having been used in at least 14 states.[5] As the name suggests, the professional judgment approach relies on the opinions of experienced and accomplished professional educators, and other experts involved with cost-management of K-12 education. This approach was first developed in the early 1980s by Jay Chambers and Thomas Parrish (1994) for the states of Illinois and Alaska in order to develop cost-based adjustments to the education funding allocations that school districts received from the state.

The essential element for this approach is the panels of experts that are formed. The individuals conducting the study recruit educators from across the state to serve on panels. These teams of education leaders are asked to consider prototype schools that represent different grade levels and different composition of students.

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[4] For a good discussion of the various approaches see ACCESS (undated).

[5] The states are: Colorado, Indiana, Kansas, Kentucky, Maryland, Missouri, Montana, Nebraska, New York, North Dakota, Oregon, South Carolina, and Washington, Wyoming. (ACCESS [undated]).

The teams are asked to determine what resources are necessary for the prototype school to reach the education standards that have been established. This is typically done in a meeting that lasts a day or two.

The cost of providing these resources is then estimated, usually by the individuals conducting the study, to ascertain the adequate level of funding. Adjustments to this amount are made to account for differences in the make-up of the student bodies across districts and for other factors that cause the required resources or the cost to differ across school districts. For example, additional resources are provided for greater number of English as a second language students, special education students, etc., and for resource price differences.

Issues. There are several concerns associated with this approach. First, while these panels of experts might be provided research on the effect of various educational strategies on student performance, the approach essentially relies on the personal experience of the members of the panel. If the experience is limited, the strategies the panel considers could be limited, or the panel might assume a strategy that sounds good but hasn't proven to work. A second concern is that panel members are not necessarily impartial participants, in particular they may have a vested interest in the recommendations of the panel. Third, since the panel has no financial constraint, there is nothing to limit the resources or programs that the panel might suggest. With no financial constraint, panel members will find that reaching consensus can be more easily achieved by simply agreeing to any suggestion of a panel member for additional resources or programs. As a result, different panels might come to substantially different recommended levels of resources, and in fact Downes (2004) points out that there is wide variation across states in the resources that such panels recommend.

A fourth limitation with this approach is that panels are not usually asked to consider how the educational strategies that are recommended for the prototype school should be changed for less typical schools, including those with high concentrations of high- or low-performing students. Thus, the adjustments for the higher number of, say at-risk students, are some times ad hoc.

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Finally, the panels are given the state's education performance standard. However, it is hard to believe that the panel can distinguish between the resources required to achieve a standard of, say, a 70 percent pass rate on an exam, from a standard of an 80 percent pass rate. Furthermore, the panel members may have a personal view as to what the standard should be, and propose resources accordingly. Thus, the estimated adequate level of resources may not be associated with what the state has set as its education performance standard.

Illustration. To illustrate the application of the Professional Judgment Approach, we summarize one of the several adequacy studies conducted for New York State. The American Institutes for Research (AIR) and Management Analysis and Planning Inc. (MAP) (2004) conducted a 15-month study to determine the cost of an adequate education for New York State. The study relied primarily on the Professional Judgment Approach but also used other methods. The following discussion is drawn from that study.

AIR/MAP held public engagement meetings to get the views of citizens regarding the performance criteria that should be used to define adequacy. Out of those meeting the education outcome standard was specified. That standard was an education system that would provide all students with a "full opportunity" to meet the Regents Learning Standards. The Regents Learning Standards, which were developed in 1996 in response to a negative court ruling, are detailed expectations for student achievement in seven academic content areas. Of course "full opportunity" is a phase that is subject to various interpretations.

AIR/MAP worked with the NY Department of Education to identify "successful schools" from which highly qualified educators were asked to participate on one of the panels. Approximately 1,000 educators were considered for participation in the study. Approximately 275 educators responded to the invitation, and 56 were chosen to participate. AIR/MAP established 12 panels, each of which was comprised of at least one superintendent, elementary school principal, middle school principal, high school principal, classroom teacher, special educator, and business official.

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Eight of the panels were asked to design instructional programs for student populations of varying incidence of poverty and English language development needs. Two panels addressed the specific needs of special education students. A summary panel assisted the AIR/MAP research team in reviewing and synthesizing the results of the other panels.

The panels were asked to describe adequate programs for all students, including students living in poverty, for English language learners, and for students in special education. AID/MAP then determined the cost of these resources.

Panels were not asked to determine levels of service involved in transporting students, maintaining and operating buildings, operating a district office, or providing food service. Nor were the panels asked to determine costs associated with a transition to new programs. Similarly, debt service and major facility construction matters were not within the purview of the panels. In a later analytic stage, the AIR/MAP team incorporated cost estimates for district office functions as well as the maintenance and operations of district and school buildings.

Each panel was required to develop instructional programs calculated to meet the educational needs of five scenarios representing different student populations characterized by varying percentages of students in poverty and of English language learners (Table 1).

TABLE 1. PERMUTATIONS OF SCENARIOS COMPLETED BY PROFESSIONAL JUDGMENT PANELS

| | | ----------------------Scenario---------------------- | | | | |
		1	2	3	4	5
Panel 1	% Free/Reduced Lunch	34.2	65.8	85.3	93.0	96.6
	% English Language Learners	1.5	9.7	9.7	9.7	26.7
Panel 2	% Free/Reduced Lunch	34.2	45.9	62.5	79.7	91.9
	% English Language Learners	1.5	2.6	2.6	2.6	18.8
Panel 3	% Free/Reduced Lunch	4.5	11.7	23.6	34.2	36.0
	% English Language Learners	0.9	0.9	0.9	1.5	0.9
Panel 4	% Free/Reduced Lunch	18.1	30.6	34.2	40.4	49.7
	% English Language Learners	0.0	0.0	1.5	0.0	1.8

Within each program component there were two types of resources: personnel and non-personnel. Personnel requirements were expressed in the form of total full-time-equivalent staff, while the non-personnel data were expressed in total dollar expenditures. The panels recommended the following programs: Kindergarten, elementary, middle, high, pre-kindergarten, early childhood development, extended day, and extended summer.

Three alternative pupil-personnel ratios were specified: class size, the pupil-teacher ratio (which included all of the teachers in the school), and pupils to all professionals in the school (which adds other professional staff). The results of the exercise are presented in Table 2, which shows these three ratios for elementary, middle, and high schools at the three levels of school poverty.

TABLE 2. ALTERNATIVE PUPIL TO STAFF RATIOS

Schooling Level	Class Size and Staffing Ratios	Percent Students Eligible for Free -----and Reduced-Priced Lunch-----		
		4.5%	**34.2%**	**91.6%**
Elementary	Class Size	16.8	15.7	14.0
	Pupil-Teacher Ratio	12.3	10.6	8.4
	Pupil-To-All Professional Staff Ratio	9.9	8.6	6.8
Middle	Class Size	22.6	22.6	22.6
	Pupil-Teacher Ratio	15.1	14.7	14.1
	Pupil-To-All Professional staff ratio	12.3	11.9	11.3
High	Class Size	29.1	24.3	18.4
	Pupil-Teacher Ratio	16.9	15.1	12.6
	Pupil-To-All Professional Staff Ratio	13.1	12.1	10.3

Once the basic programs and required resources were determined, AID/MAP determined the cost of district-level functions, cost adjustments for the size of the district, and geographic differences in the cost of providing education, essentially differences in required teacher salaries. The AIR/MAP team used statistical methods in combination with the panel specifications to estimate school and district cost differences due to economies of scale.

Excluding transportation and debt service, public schools in New York spent $31.71 billion in 2001-02. AIR/MAP found that an additional $6.21 to $8.40 billion

would be necessary to ensure that the standard of "full opportunity" to meet the Regents Learning Standards would be achieved for all students of the state of New York. The results meant that 76.5 percent of the school districts (520 districts out of 680 school districts) would require additional funds.

For 2001-02, for high schools with 34.2 percent of student eligible for free and reduced lunch (the average for the state), the per pupil expenditure for the base program was estimated to be $10,443, increasing to $12,645 for a school with 91.6 percent of its students on free and reduced lunch.

Best Practice Approach

Overview. The Best Practice Approach relies on what research suggests are the best strategies for improving the likelihood that students will achieve the desired educational outcome.   The best strategy can differ by grade and by student characteristics. This approach borrows heavily from the lessons learned from school reform models that have proven effective, and from the judgment of "experts" who have developed and analyzed those models.[6] Rather than relying on the collective views of large groups of teachers, education managers and planners, the Best Practice Approach depends on the opinions of a small group of educational policy experts. This approach has been advocated largely by Lawrence Picus and Alan Odden.

Issues. The principal concern with this approach lies in the reliability of and ability to generalize the research results. Some strategies, for example, class size reduction, have been extensive researched, while other strategies have received less attention. While there is a general consensus that reducing class size is desirable, there are researchers who have serious reservation regarding the reliability of the existing research. Furthermore, it is not possible to use the research to specify a specific student-teacher ratio as being the optimal. The empirical evidence on some form of whole school reform, which is one type of best practice, is based on a small sample of schools that have implemented whole school reforms. Thus, there is not strong evidence as to their effectiveness. Furthermore, schools that adopt whole

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[6] ACCESS (undated) p. 4.

school reforms could be atypical, and thus the results from implementing whole school reform may not apply to the typical school. And, as Downes (2004) points out, the empirical evidence on such reforms suggests that reforms can be very successful in one setting but fail in another.

The performance standards (i.e., steps 1 and 2) do not play much of a role in this approach. The selection of strategies and programs is based on the objective of providing a high quality education program. Consequently, there is little difference across states in the strategies that are recommended.

Illustration. To illustrate the application of the Best Practice Approach, consider the study conducted for Kentucky by Lawrence O. Picus and Associates (2003). As a result of a lawsuit, Kentucky adopted a set of education goals that consists of six learning goals and numerous academic outcomes that all Kentucky students are expected to achieve. The six education goals are:

1. Students are able to use basic communication and mathematics skills for purposes and situations they will encounter throughout their lives.
2. Students shall develop their abilities to apply core concepts and principles from mathematics, the sciences, the arts, the humanities, social studies, practical living studies, and vocational studies to what they will encounter throughout their lives.
3. Students shall develop their abilities to become self-sufficient individuals.
4. Students shall develop their abilities to become responsible members of a family, work group, or community, including demonstrating effectiveness in community service.
5. Students shall develop their abilities to think and solve problems in school situations and in a variety of situations they will encounter in life.
6. Students shall develop their abilities to connect and integrate experiences and new knowledge from all subject matter fields with what they have previously learned and build on past learning experiences to acquire new information through various media sources.

The state's performance standard is to have all students performing at or above the proficiency level on the state's student testing system by 2014. However, this objective does not play a direct role in the selection of education strategies.

Picus and Associates developed a set of recommended programs drawn from published research. They review what published research suggests are effective

strategies and programs for improving education performance, i.e., what are best practices. Because they base their recommendations on national research, the recommended list of programs and strategies is essentially the same for all states. There are differences in recommendations across states due to special needs.

The recommended set of programs and strategies for Kentucky are as follows:

- A pupil/teacher ratio of 1 to 15 for grades K-3, and a pupil/teacher ratio of 1 to 25 for all other grades.

- An additional 20 percent increase in the number of teachers to provide collaborative planning and curriculum development, beyond the increase to reduce class size.

- Instructional facilitators at each school, regardless of grade level, at the rate of 2.5 for each 500 students.

- Adequate staff to meet the needs of children with mild and moderate disabilities, which was set at 10 percent higher than regular students.

- One teacher tutor and one professional for ever 20 percent of student in poverty.

- A "catastrophic" funding program to provide special education with severe disabilities (at the current level).

- Funding for professional development, technology, instructional materials, and supervisory aides.

- Early Childhood Education. This would be a pre-K program for all 3 and 4 year olds, with one licensed teacher and one teacher aide per 15 students.

- Full-day Kindergarten program.

The costs are based on a proposed school size of 500 students. Table 3 summarizes the resources recommended. Table 3 does not include the teachers and aides required for the pre-school program for children aged 3 and 4 who are from lower income backgrounds.

TABLE 3. SCHOOL LEVEL RESOURCES REQUIRED FOR AN ADEQUATE EDUCATION PROGRAM FOR PROTOTYPE STATE-OF-THE-ART SCHOOL OF 500 STUDENTS

Elementary School Unit of 500 Students	Secondary School Unit of 500 Students
1 Principal	1 Principal
2.5 Full time instructional facilitators, coach	2.5 Full time instructional facilitators, coach
29 Teachers; class size of 15 in K-3, otherwise 25	20 Teachers; class sizes of 25
6 Art, music, physical education, library, etc. teachers	4 Art, music, physical education, library, etc. teachers
1-5 Teacher Tutors; 1 for each 20 % students from low income background with a minimum of 1	1-5 Teacher Tutors; 1 for each 20 % students from low income background with a minimum of 1
1-5 Positions for student/family support; 1 for each 20-25 % students from low income background with a minimum of 1	1-5 Positions for student/family support; 1 for each 20-25 % students from low income background with a minimum of 1
$60,000 for professional development	$60,000 for professional development
$125,000 for computer technologies	$125,000 for computer technologies
Secretarial support, lunch and food support, and operations and maintenance	Secretarial support, lunch and food support, and operations and maintenance

Given the recommended resources, the next step was to determine the cost. The authors of the study assumed that the cost for secretarial, custodial, food services, transportation and any other non-core staff would not have to change. Staff costs were calculated using the current statewide average salary for principals, teacher and other professionals. There are no recommended increases in teacher salaries for Kentucky, but the reduction in class size would increase expenditures on teachers.

The net baseline state and local expenditure in Kentucky was $3.9 billion, or $6,020 per pupil, for 2001-02; this excludes federal grants. The study estimates that the cost of an adequate education program would require an increase of $565 million, or about $873 per pupil. This would increase per pupil spending from $6,020 to $6,893. In addition, the cost of expanding the pre-school program to all children aged 3 and 4 with incomes below 150 percent of poverty is estimated to be an additional $175 million.

Successful School District Approach

Overview. The Successful School District Approach is a kind of statistical bench-marking of school districts. At least eight states have adopted this method.[7] In this method, school districts that have achieved a specified educational standard are identified, where the standards are measured by student test scores and other precisely defined outcome measures.[8] Next, the basic education expenditure per student is calculated for each of these school districts. From this list school districts are dropped that are atypical, which are districts that spend much more or less than other districts or that have a unique student body. The weighted average expenditure per student for those school districts that remain in the sample provides the estimate of the per pupil expenditure required to achieve a similar level of student performance in other school districts. The per-student amount is adjusted for geographic differences in resource prices and for differences in the number of students with extraordinary needs. This approach has a certain appeal to it; if some school districts can achieve the educational standard, then why shouldn't other districts be able to do the same.

Issues. The main criticism of this approach is that the school districts that are used to determine the benchmark expenditure level are not likely to be representative. This is particularly the case if the educational standard is set at a high level. The school districts that typically meet high educational standards are those with low numbers of at-risk students. Thus, the average expenditure per student for these school districts may not represent the resources required for school districts with a more representative number of at-risk students. Furthermore, this approach provides no basis for adjusting the adequacy expenditure level for differences in student characteristics.

Use of the average expenditure per pupil for the sample of successful school districts is an arbitrary choice for the estimate of an adequate per pupil expenditure. There is no basis why the average, rather than say the lowest or highest per pupil

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[7] ACCESS (undated). The states are: Colorado, Illinois, Kansas, Louisiana, Maryland, Mississippi, Missouri, and New York.
[8] ACCESS (undated) p. 4

expenditure, should be considered the expenditure per pupil required to provide an adequate education. The expenditures per pupil for successful school districts vary, and in some states they vary widely (see below). Consider two possible explanations for these differences. At one extreme it might be the case that those school districts that spend more than the school district with the minimum expenditure per student are wasting resources. In this case, the minimum expenditure per student would be sufficient to provide an adequate education. On the other hand, it could be that the additional expenditures are necessary for those school districts to be successful. In this case, it would be important to determine why the additional expenditures are necessary so that appropriate adjustments can be made. But in the successful school approach no attempt is made to explain differences in expenditures per student.

Illustration. To illustrate the application of the Successful School District Approach we summarize a study conducted by Augenblick and Myers, Inc. (A&M) (2003) for the Missouri Education Coalition for Adequacy (MECA). (As part of this study, A&M also developed an estimate for Missouri using Professional Judgment Approach.)

There were two basic steps used to implement the Successful School District Approach. First, the authors needed to identify school districts that are successful. The definition of an adequate education in Missouri is driven by the need to make "Adequate Yearly Progress." Thus, the goal is that 100 percent of students will achieve the state standards by 2013-14. Missouri has implemented an assessment system known as the Missouri Assessment Program (MAP), which tests five content standards (mathematics, science, communication arts, health education/physical education, and social studies) in grades 3-11. School districts were considered successful if they met all of the performance indicators, which included MAP test scores, course offering, after high school placement, dropout rates, and attendance rates. This yielded 80 successful districts with total enrollment of 283,172 students. Additionally, school districts that met all of the MAP indicators and all but one of the other performance indicators were also considered successful. This increased the number of successful school districts to 102, with total enrollment of 308,206 students.

The second step was to determine the basic expenditures of the successful districts. Basic expenditures exclude spending for capital purposes, transportation, special education, English language learner programs, and programs and services for at-risk pupils, as well as any adjustments for district characteristics. Total basic expenditure for each district was divided by the district's enrollment to obtain the basic expenditure per pupil.

For the 102 successful school districts, the average basic expenditure, weighted by the number of students, was $5,664 for 2001-02. But basic expenditures per student ranged from a minimum of $3,754 to a maximum of $13,339. This base amount does not cover the costs of serving students with special needs, the costs faced by small or very large districts, the adjustment needed for geographic differences in the price of resources, or the costs associated with student transportation, food services, or capital outlay and debt service.

Cost Function Approach

Overview. The Cost Function Approach relies on relatively complex regressions 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."[9] This approach differs from the Successful School District Approach in that it attempts to determine not only how the level of spending is correlated with academic success, but also how the level of per-student expenditures required to achieve a certain level of education performance changes with the school districts' characteristics, including variations in the student population. It is really just a sophisticated version of the Successful School District Approach.

The basic idea behind the Cost Function Approach is that cost depends on the level of output and other factors that affect the relationship between cost and output. As applied to education, cost is measured by expenditures per student and output is measured by education performance. The assumption underlying this approach is

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[9] ACCESS (undated) p. 5

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that controlling for the level of factors that are expected to affect the relationship between cost and performance, increasing education performance requires greater expenditures per student.

The Cost Function Approach involves estimating a regression equation. In that equation the variation in expenditures per student across school districts is regressed against a set of variables that are thought to explain the variations in expenditures per student. These explanatory variables include education performance measures, measures of student characteristics such as percent poor, cost factors, etc. The estimated regression equation can then be used to predict the increase in expenditures per student that are required to increase performance by a certain amount.

From this regression, it is then possible to determine for each school district the expenditure per student that is required to achieve a certain education performance standard. The required expenditure per student that is calculated depends on the performance standard that is established as well as the characteristics of the students and school district. Thus, the regression accounts for the increased expenditure per student required when the student population has a higher percentage of students with special learning needs.

Issues. One of the concerns with this approach is that it is quite complex and thus most policymakers have a difficult time understanding the approach. Another problem is that the approach requires extensive state-wide data on district-level per pupil school expenditures, student performance, and various characteristics of students and school districts. A third problem is that the approach takes the strategies currently in use as given in determining the required expenditures; something that it shares with the Successful School District Approach. The Cost Function Approach and the Successful School District Approach are "black boxes" in that while the level of spending required to achieve the educational standard is generated, it provides no information about the usefulness of alternative strategies or the different level of resources that would be required for alternative strategies. However, unlike the other methods, the Cost Function Approach incorporates adjustments in expenditures that are required due to differences in student body characteristics. No state has relied on

this approach to establish its school funding program, although such studies have been conducted for New York, Wisconsin, Illinois, and Texas. The development of this approach is associated with John Yinger, William Duncombe, Andrew Reschovsky, and Jennifer Imazeki.

Illustration. Imazeki and Reschovsky (2004) estimated a statistical cost function in order to determine the minimum amount of money needed by school districts in Texas to meet the accountability standards mandated by both Texas statutes and by *No Child Left Behind*. Specifically, they estimate the minimum amount of money Texas school districts need to achieve state and federally mandated student performance goals. The cost function allows them to quantify the relationship between per-pupil spending for education and student performance, various student characteristics, and the economic and spatial characteristics of school districts. They are able to estimate how much a school district with, for example, a large number of children from poor families, must spend relative to the average district in order to meet the state's student performance standards.

The dependent variable in the regression is per pupil operating expenditures. To measure output, i.e., performance, they use several measures. In 2002-03, Texas adopted the Texas Assessment of Knowledge and Skills (TAKS), a series of standardized reading, writing, mathematics, and science tests to measure performance. Thus, one of the measures of student achievement is the passing rates on these standardized exams. In addition, Imazeki and Reschovsky include the passing rate on the State-Developed Alternative Assessment, which is taken by students in special education programs. A third outcome measure is the annual retention rate, defined as one minus the dropout rate. As a final performance variable they use the percentage of graduating seniors who achieve a score of 1100 or above on the SAT or a score of 24 or above on the ACT.

There are several variables that the authors include in the regression in order to account for other factors that affect expenditures per student.

- *Student ability*. To measure student ability they use the test scores in the previous year. Because it costs more to educate students from economically disadvantaged families, students with various mental and physical disabilities, and students with limited proficiency in English,

they include measures of the size of these populations, as well as the size of the minority populations.

- *Teacher salaries*. Because teacher payrolls are determined both by factors under the control of local school boards, and factors that are largely outside of their control, the objective is to isolate the effect of factors outside the district's control. They use an index of teacher costs that separates variations in compensation arising from uncontrollable district characteristics (such as area cost of living) from variations arising from factors that districts can influence (such as teacher experience and educational background).

- *Student composition*. To account for the possibility that different levels of resources may be needed to provide a high school education as compared to an elementary school education, they include the proportion of each school district's student body that is enrolled in high school.

- *Economies of scale*. To allow cost to vary with district size, they include each district's enrollment and enrollment squared in the cost function.

- *Efficiency*. They include variables that are thought to be associated with how efficiently the district uses it resources.

They use the regression to calculate a cost index value for each school district. They use two levels of performance, a passing rate of 55 percent on the TAKS and a passing rate of 70 percent. For the average district they estimate that to achieve a passing rate of 55 percent the average cost per student would have to be $8,101 in 2004. If the passing rate standard was set at 70 percent, the cost would be $11,163.

V.   Summary of Evidence

Adequacy studies have been conducted in several states, and in some states, multiple studies have been conducted. *Education Week* summarized these studies; Table 4 reproduces their results. (We are grateful to *Education Week* for granting permission to reproduce the table.)   While the studies were conducted in various years, *Education Week* adjusted the estimated expenditure to 2004 prices.

As can be seen in Table 4, the estimated expenditures per student required for an adequate education differ across the studies.   The differences are due to the following:

- *Prices differences across states*. For example, salaries required to hire a teacher of a certain quality is higher in New York than in Georgia.

- *Differences in the approach used*. As noted above there are different approaches to estimating the cost of an adequate education, and these approaches can lead to different estimates of what an adequate education would cost. In addition, there are differences in how the approaches are carried out.   For example, when using the Professional Judgment Approach, a set of prototype schools is specified, but the nature of these prototype schools, for example, the percentage of the student body that are at-risk, can differ across studies. Note that estimates from the studies that include students with disabilities are generally higher.

- *Differences in the educational standard*. States have established different educational standards and the resources required to reach these standards differ.   For example, differences across studies in the adequate expenditures estimated for New York are due in part of differences in the educational standard used as the basis of the estimation.

Estimated adequate expenditures per student from the Successful School District Approach are generally lower than estimates using the other methods. Other than that there are no consistent differences by the approach used, the author of the study, or the year the study was conducted.

TABLE 4. ADEQUACY STUDIES

	Study Author(s)	Method	Study Release Date	Year of Basic Cost Estimate	Cost Estimate Includes Students with Disabilities	Cost Type	Basic Cost Estimate	Basic Cost Est. (2004 Dollars)	Adjusted Cost Est. (2004 Dollars)
Arkansas	Lawrence D. Picus and Associates	Evidence-Based	2003	2002	X	State Mean	$6,741[7]	$7,268	$8,332
Colorado	Augenblick and Colleagues	Successful Schools	2003	2001		Low	$4,654	$5,217	$5,263
Colorado	Augenblick and Colleagues	Professional Judgment	2003	2001		Base	$6,815	$7,639	$7,707
Illinois[1]	Augenblick and Colleagues	Successful Schools	2001	2000		Low	$4,470	$5,210	$5,009
Illinois[1]	Augenblick and Colleagues	Successful Schools	2001	2000		Low	$4,882	$5,691	$5,470
Indiana	Augenblick and Colleagues	Professional Judgment	2002	2002		Base	$7,094	$7,649	$8,174
Kansas	Augenblick and Colleagues	Successful Schools	2001	2000		Low	$4,547	$5,300	$5,900
Kansas	Augenblick and Colleagues	Professional Judgment	2001	2000		Base	$5,811	$6,774	$7,540
Kentucky	Lawrence D. Picus and Associates	Evidence-Based	2003	2003		State Mean	$6,893	$7,159	$8,013
Kentucky	Deborah A. Verstegen	Professional Judgment	2003	2003	X	State Mean	$8,438[8]	$8,763	$9,809
Maryland	Augenblick and Colleagues	Successful Schools	2001	2000		Low	$5,969	$6,958	$6,820
Maryland	Augenblick and Colleagues	Professional Judgment	2001	2000		Base	$6,612	$7,707	$7,555
Maryland (Low)[2]	Management, Planning & Analysis Inc. (MAP)	Professional Judgment	2001	1999	X	State Mean	$7,461	$9,077	$8,898
Maryland (High)[2]	Management, Planning & Analysis Inc. (MAP)	Professional Judgment	2001	1999	X	State Mean	$9,313	$11,331	$11,107
Missouri	Augenblick and Colleagues	Successful Schools	2003	2002		Low	$5,664	$6,107	$6,428
Missouri	Augenblick and Colleagues	Professional Judgment	2003	2002		Base	$7,832	$8,444	$8,889
Montana	Augenblick and Colleagues	Professional Judgment	2003	2002		Base	$6,004	$6,473	$7,106
Nebraska	Augenblick and Colleagues	Professional Judgment	2003	2002		Base	$5,845	$6,302	$7,029
New York	Duncombe and Colleagues (Syracuse U.)	Cost Function	2004	2004		State Mean	$14,107	$14,107	$12,484
New York	American Institutes for Research & MAP	Professional Judgment	2004	2002	X	State Mean	$12,975	$13,989	$12,397
New York (140)[3]	Duncombe and Colleagues (Syracuse U.)	Cost Function	2002	2000		State Mean	$14,083	$16,416	$14,548
New York (150)[3]	Duncombe and Colleagues (Syracuse U.)	Cost Function	2002	2000		State Mean	$14,716	$17,154	$15,202
New York (160)[3]	Duncombe and Colleagues (Syracuse U.)	Cost Function	2002	2000		State Mean	$15,139	$17,647	$15,639
New York (Low)[4]	Standard & Poor's	Successful Schools	2004	2004	X	State Mean	$12,679	$12,679	$11,220
New York (High)[4]	Standard & Poor's	Successful Schools	2004	2004	X	State Mean	$13,420	$13,420	$11,876

This table is continued next page…

TABLE 4 (CONTINUED). ADEQUACY STUDIES

	Study Author(s)	Method	Study Release Date	Year of Basic Cost Estimate	Cost Estimate Includes Students with Disabilities	Cost Type	Basic Cost Estimate	Basic Cost Est. (2004 Dollars)	Adjusted Cost Est. (2004 Dollars)
North Dakota	Augenblick and Colleagues	Professional Judgment	2003	2002		Base	$6,005	$6,474	$7,534
Ohio	Augenblick and Colleagues	Successful Schools	1997	1996		Low	$3,930	$5,244	$5,303
Oregon	Oregon Quality Education Commission	Professional Judgment	2000	1999		Base	$5,448	$6,628	$6,846
Texas	Reschovsky and Imazeki	Cost Function	2001	1996	X	Avg.District	$5,608	$7,483	$7,898
Texas (55%)[5]	Reschovsky and Imazeki	Cost Function	2004	2002	X	State Mean	$7,476	$8,060	$8,507
Texas (70%)[5]	Reschovsky and Imazeki	Cost Function	2004	2002	X	State Mean	$9,135	$9,849	$10,395
Texas (Low)[6]	Joint Select Committee (Texas A&M)	Cost Function	2004	2002	X	State Mean	$5,715	$6,162[9]	$6,503
Texas (High)[6]	Joint Select Committee (Texas A&M)	Cost Function	2004	2002	X	State Mean	$5,807	$6,261[9]	$6,608
Washington	Ranier Institute	Professional Judgment	2003	2001	X	State Mean	$7,753	$8,691	$8,355
Wisconsin	Institute for Wisconsin's Future	Professional Judgment	2002	2002		Base	$8,730	$9,412	$9,826
Wisconsin	Reschovsky and Imazeki	Cost Function	1998	1995	X	Avg.District	$6,370	$8,730	$9,114

SOURCE: Special analysis for *Education Week* by Bruce D. Baker, University of Kansas.

1. The first Illinois estimate listed is based on 1999-2000 data and the standard that 83 percent of students meet improvement over time. This study includes an adjustment for efficiency. The second estimate is based on 2000 data only and the standard that 67 percent of pupils meet or exceed the standard and 50 percent do so on all tests. There is no adjustment for efficient spending.

2. The two Maryland estimates represent different estimates from the two professional-judgment panels convened for the study.

3. These three estimates listed for New York represent the results of setting different outcomes standards on a 200-point index. The estimates for each of the three standards include only the costs for districts below the target performance standard for the 1999-2000 school year.

4. These two estimates listed for New York show the differences in estimates within a single study as a result of using two different cost indices. The estimate using the New York Regional Cost Index was $13, 420, and the estimate using the Geographic Cost of Education Index was $12,679.

5. The two estimates provided for Texas are based on a 55 percent and a 70 percent passing standard. Estimates include food and transportation costs.

6. The authors of this study provided a range of values for the cost estimate, based on the margin of error of the statistical method used. The two values listed represent the high and low estimates.

7. Picus and Associates provide a total cost of about $3 billion. To calculate a per-pupil estimate, this figure was divided by the 449,161 students in the state in the 2001-02 school year.

8. This figure represents large to very large districts.

9. These estimates exclude costs for food and transportation. Also, the authors of this study adjusted their cost estimates to 2004 dollars using a different method from the one used here. The figures listed here are only slightly lower than those in the original report.

Adequate Funding of Education in Georgia: What Does It Mean, What Might It Cost, How Could It Be Implemented?

INTERPRETATION OF TABLE 4.

This table is not a comprehensive list of all adequacy studies conducted across the 50 states. Studies not listed generally only included school-level costs, were not statewide, or included only certain types of districts. Other studies not included were too old, or original reports were not available.

METHOD: In successful-schools studies, researchers select a group of schools or districts meeting a certain level of achievement, and then use the average expenditures of those schools as the basis for an adequate amount. A modified successful-schools study typically involves some measure of efficient spending for the schools or districts chosen. Professional-judgment studies gather a group of educators to develop an education program that will allow students to reach a certain level of achievement. The panel then determines the resources needed to implement that program.   The evidence-based approach is based on a "proven effective" comprehensive school reform model (a significant point of debate), or a combination of research-based strategies, and determines the cost of an adequate education by calculating the cost of implementing those programs or strategies.   The cost-function method uses a statistical analysis to determine the average cost associated with a certain desired level of student achievement, based on a district with average student characteristics.

COST TYPE: Base costs from the studies listed represent the estimated cost of resources required for the basic education program of prototype schools, assuming no additional accommodations for special student needs. Low costs represent the average expenditures of districts with low incidence of student demographics commonly associated with lower student achievement (e.g., the cost of outcomes in low-need districts). State mean costs represent the statewide average cost of educating students.   Average district costs represent the cost of achieving adequate student outcomes in a district of average characteristics.

BASIC COST ESTIMATES: Basic cost estimates must be interpreted carefully. Because the achievement standards, methods, and assumptions of student demographics vary greatly across the different studies listed, these estimates are not directly comparable.   Also, it is important to note that adequacy studies typically provide a complex listing of several estimates for the cost of an adequate education. The basic cost estimates listed here are just one estimate chosen from these studies. In general, they are the base costs of a large K-12 district. Basic cost estimates were adjusted to reflect 2004 dollars using the Employment Cost Index (ECI) of the U.S. Bureau of Labor Statistics.

ADJUSTED COST ESTIMATES: Costs were adjusted for regional variations in price, using state average prices (weighted by district enrollment) generated from the NCES Geographic Cost of Education Index.

Source: As first appeared in *Education Week*: "Quality Counts", January 6, 2005, vol 24 (17): 39. Reprinted with permission from Editorial Projects in Education.

VI.   The Cost of an Adequacy Education in Georgia

The suit filed by the Consortium for Adequate School Funding in Georgia contends that the Georgia state government is not providing adequate funding for education. A major question facing the State is, how much might the State have to increase education funding if it loses the court case and must provide an adequate level of funding? While a final decision in this case may be years away, it is prudent to consider the financial consequences if the State losses the suit. An important piece of information in such an exercise is an estimate of how much education expenditures per student will have to increase. A closely related issue is, how can the State assure that each school system has an adequate level of resources?

Because Georgia has not completed an adequacy study, we use some of the studies from Table 4 to develop an estimate of the magnitude of the increase in education funding that might be required in Georgia. As noted above, each state is different in terms of its education standards, the composition of its students, and wages and prices that have to be paid. Furthermore, the studies present different results that make it difficult to compare their findings. For example, some studies specify an average expenditure per student only for students enrolled in regular classes. Other studies specify an average expenditure per student for a hypothetical school that enrolls a representative group of students, including those with learning disabilities. Despite these differences, we use these studies to provide an estimate of what education spending in Georgia might be necessary to provide an adequate education.

For the 16 adequacy studies that provide an average expenditure per student for a representative group of students, the range of required expenditures per students is from $6,302 to $9,412 (Table 5), for FY 2004. Note that for some states more than one study was conducted. (We do not consider the studies for New York, which have a range of $12,679 to $17,647, because New York is not a very representative state.) The mean expenditure per student for these 16 studies is $7,600 and the median is $7,561. We selected $7,500 per student as the estimate of what Georgia might have to provide to ensure it is providing an adequate education.

TABLE 5. RESULTS FROM ADEQUACY STUDIES

State	Year Study Released	Required Expenditures per Student, 2004[1]
Arkansas	2003	$7,268
Colorado	2003	$7,639
Indiana	2002	$7,649
Kansas	2001	$6,774
Kentucky	2003	$7,159
Kentucky	2003	$8,763
Maryland	2001	$7,707
Missouri	2003	$8,444
Montana	2003	$6,473
Nebraska	2003	$6,302
North Dakota	2003	$6,474
Oregon	2000	$6,628
Texas	2001	$7,483
Washington	2003	$8,691
Wisconsin	2002	$9,412
Wisconsin	1998	$8,730

1. Adjusted for cost increases between the year of the data used in the study and 2004.
Source: *Education Week* (2005), p. 39

All that we have done here is pick an expenditure per student to represent the expenditure for an average student. An adequacy study would also determine how the expenditure per student should vary by the grade level, by program type (e.g., level of learning disability), for geographic differences in cost, etc.

It is important to understand what the $7,500 represents. It is the *minimum* expenditure per student averaged across a representative set of students, and thus, allows for special learning programs for the mentally challenged and honors students. It does not mean there will be no variations in expenditures per student by program type and school level. The expenditures are for standard education programs and associated expenses such as administration, but do not include funding required for construction or special programs such as school nurses, nor does it include federal funding such as Title I.

For FY 2004, Georgia (state plus local systems) had general fund spending of $10,084.2 million for the 1,498,777 students, or $6,728 per student (2003-2004 Annual Report Card). Increasing expenditures per student to a minimum of $7,500 would have required an increase in expenditures of $1,193 million in FY 2004, an increase of 11.8 percent in total state plus local educational expenditures.

VII. Ensuring That All School Systems Have Adequate Resources

Assume that $7,500 is the expenditure per student (in FY 2004) required for an adequate education. The State then has to ensure that every school system has available funds of at least $7,500 per student. There are at least two ways to achieve this objective. First, the State can mandate that each local school system spend at least $7,500 per student. Mandating that school systems spend at least $7,500 per student is tantamount to requiring low-spending districts to increase property tax rates. This would require an increase in property tax revenues of $1,193 million, an increase of about 5 mills on average, assuming no increase in State government funding.

The other option is for the State to set the QBE foundation level (i.e., QBE earnings) at $7,500. This would ensure that every school district had at least $7,500 per student to spend. If a local school system wanted, it could supplement this with local funding, as is done now. Of the 180 school systems in Georgia, 158 had state and local general fund revenues of less than $7,500 per student in FY 2004 (Georgia Department of Education, Revenue Report).

Providing $7,500 per student through QBE would have cost $11,240 million in FY 2004. In FY 2004, school systems had total state revenue of $6,707 million, including QBE earnings, categorical grants, and equalization funding, but excluding transportation, nursing, and scarcity grants (FY 2004 Earnings Sheet). But the local school systems' required local 5 mill share totaled $1,206 million, so that the State provided $5,501 million to school systems (FY 2004 Earnings Sheet). Thus, to increase minimum revenue per student to $7,500 the State would have to increase its FY 2004 spending of $5,501 million by $4,533 million, or by 82.4 percent.

If instead the minimum required revenue per student is $7,000, the additional cost to the State would be $3,784 million. While if the minimum required revenue per student is $6,500, the cost to the State would be $3,034 million.

Increasing the minimum funding to $7,500 per student guarantees that each school system will have at least $7,500 per student. While school systems must impose a property tax of 5 mills, all school systems currently impose a property tax

greater than 5 mills. We expect that if the State increased its funding by 82.4 percent, local school systems would reduce their property tax rates. Consider first the 158 school systems that currently have revenues less than $7,500. Assume that when the State increases education spending these school systems will not spend more than $7,500. This means that these school systems will cut their property tax to the required local 5 mill share. We assume that the 22 school systems that currently spend more than $7,500 will maintain their current level of education expenditures, which means they would cut their taxes by the amount of increase in State funding. The resulting estimated total reduction in property taxes is $3,130 million. This is an upper bound of the likely decrease, i.e., the decrease in property taxes is likely to be smaller. This estimate implies that total state and local revenue for education would increase by at least $1,403 million, consisting of an increase of $4,533 million in increased State government QBE funding and a possible reduction of up to $3,130 million in local contributions.

The State can shift some of the required $4,533 million increase to local school systems by increasing the required local contribution to, say, 10 mills or to 15 mills. The required increase in State spending would be $3,327 million if local school systems had to contribute 10 mills, and $2,120 million if school systems had to contribute 15 mills.

There are 14 school systems with a millage rate of less than 10 mills, but six of these systems have a one percent sales tax that can be used for general operations. Counting the local sales tax revenue as part of the school systems' required share means that only 10 school systems would have to increase their millage rates if the required millage rate was 10 mills.   The total increase in property tax revenue for these 10 systems would be $16.2 million. This would be about a 0.24 percent increase in total property taxes in Georgia. These systems would have to increase their millage rates by an average of 1.49 mills, with a range of increases of 0.17 mills to 4.7 mills (Bremen City). Only one system would have to increase its millage rate by more than 3 mills.

There are 95 school systems with a millage rate of less than 15 mills. But 10 of these systems have a local sales tax that can be used for operations. Including the

sales tax revenue as part of the school systems required share means that only 90 school systems would have to increase their millage rates if the required millage rate was 15 mills. This would increase property tax revenue by about $53.0 million, or about a 0.8 percent increase in total property taxes in Georgia. These systems would have to increase their millage rates by an average of 1.08 mills, with a range of increases of 0.02 mills to 9.7 mills (Bremen City). Eighteen systems would have to increase their millage rate by more than 3 mills.

Finally suppose the State eliminated the local school property tax and set spending at $7,500 per student for all school systems in the state. In this case the cost to the State government would be a $5,734 million increase in State expenditures. This amount is comprised of the reduction in school property taxes of $4,577 million, and the amount needed to increase the average state and local revenue for basic programs from the current (FY 2004) $6,728 per student to $7,500 per student, which is $1,157 million.

Table 6 summarizes the various options.

TABLE 6. COST OF ALTERNATIVES TO ACHIEVING A MINIMUM EXPENDITURE PER STUDENT OF $7,500

| | ----------Change in Revenue in FY 2004---------- | |
Option	State Government	Local School Systems
1. Mandate $7,500 to be funded by local property taxes		$1,193 million
2. Increase QBE foundation to $7,500 and retain the required local 5 mills	$4,533 million	-$3,130 million (upper bound estimate)
3. Increase QBE foundation to $7,500 and increase required millage to 10 mills	$3,327 million	$16.2 million
4. Increase QBE foundation to $7,500 and increase required millage to 15 mills	$2,120 million	$53.0 million
5. Increase QBE foundation to $7,000 and retain the required local 5 mills	$3,784 million	-$1,576 million (upper bound estimate)
6. Increase QBE foundation to $6500 and retain the required local 5 mills	$3,304 million	-$718 million (upper bound estimate)
7. Increase QBE foundation to $7,500 and eliminate school property taxes	$5,734 million	-$4,577 million

VIII. Summary

Adequate education expenditures are what are required to achieve specified educational objectives, such as a specified pass rate on some exam. Defining adequacy is relatively easy, although there are conceptual issues on which people disagree. However, measuring adequacy is another thing. Several methods have been used to estimate the cost of providing an adequate education, but none of them is without its flaws. And, even for a particular approach, differences exist in how the approach is employed. As a result, there are large differences in estimates of the cost of an adequate education across studies.

No adequacy study has been conducted for Georgia. But based on adequacy studies for other states, we selected a per student expenditure of $7,500 (for FY 2004) as a reasonable estimate of the cost of providing an adequate education in Georgia. To achieve a minimum per student expenditure of $7,500 for all school districts would have required an increase of 11.8 percent in total state and local spending on education. This increase is before any adjustment for inflation and enrollment growth. This would be a challenge, but not a huge one. To ensure that all school systems in the State have $7,500 per student, the State would either have to require a sizable increase in local property taxes, 5 mills on average, or increase its expenditures on education by up to 82.4 percent, which would allow a substantial reduction in property tax, or some combination of the two.

No one knows when or how the Georgia Supreme Court will ultimately rule on the compliant brought by the Consortium of Adequate School Funding in Georgia. But given that most states have lost adequacy suits, the likelihood that Georgia will lose its case is high.

The State has several options, but choosing among these options is not easy. The State can assume that it will win the case as it did in 1981, and thus not do anything until the Court rules. (Simply ignoring the issue is tantamount to assuming the State will win.) If the Court does rule in the State's favor, the State will have no legal requirement to make any changes in the education funding level. However, if the Court rules against the State, the State will be directed to implement changes in

education funding, and perhaps major changes. At that point the State can either follow the Court's ruling or resist the Court, as many other states have done.

Alternatively, the State might assume that the Court will rule against it. In this case, the State might choose to begin to address the issue by slowly moving toward an adequate funding of education. If the Court then rules in favor of the State, the State will have increased spending to a level that may not have been necessary.

Deciding how to proceed is a very difficult decision since there is no one correct decision. It is also a very important decision since the expenditures at issue are very substantial.

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