EXAMINATION AND APPLICATION OF THE EDUCATION ADEQUACY MODELS AND STUDIES TO THE STATE OF FLORIDA

By

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To my Mom and Dad,
who instilled in me the belief that I could accomplish anything I set my mind to.

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In education, no set definition or standard applies across states to configure the cost of an adequate education, but different methods/formulas have been used in some states and by various researchers to try and compute the cost of an adequate education. Many adequacy studies have been conducted over the past ten years. These studies were sponsored by various organizations such as state legislatures, state education agencies, or coalitions of educators.

The purpose of this study was to examine the different methodologies used to determine what an adequate education would cost and if there were a state of the art adequacy study. This study utilized techniques from content and policy analysis research. The four adequacy models (cost function, successful school district, professional judgment, and evidence-based) were identified and examined. Strengths and weaknesses of the four models were discussed and reliability and validity issues were presented for each methodology. Fifty-one adequacy studies conducted by various researchers for several states were summarized and analyzed to determine if the method was used correctly. The data collected from the analysis of the state adequacy studies and the individual methodologies was used to determine if any of the methodologies could be utilized in the state of Florida.

Results of this study show that the four adequacy methodologies (cost function, successful school district, professional judgment, and evidence-based) currently being utilized to configure the cost of an adequate education in several states cannot be used in the state of Florida or any state that has similar expenditures across districts. All of the approaches assume that higher expenditures equal higher achievement which can be refuted when comparing the achievement of students across Florida. This study exemplified the limited strengths and the many weaknesses found in the four adequacy methodologies.

CHAPTER I
INTRODUCTION

Since the passing of the No Child Left Behind (NCLB) Act[1] and the federal government's expectation that every child will meet high standards, more people are questioning the adequacy of the current state finance systems. The NCLB Act is "federal legislation [that] requires annual testing of all students in grades 3 through 8, and requires that schools make annual progress in meeting student performance standards for all students and for separate groups of students classified by race, ethnicity, poverty, disability, and limited English proficiency."[2] Additionally the NCLB Act requires that every child will effectively meet state student performance standards by the 2013-14 school year and make progress according to a schedule agreed to by each state and the U.S. Department of Education each year between now and then.

A standard definition for adequacy in education has not been formulated. "One way to define an adequate education is to accept that whatever a state chooses to define as adequate is adequate since education is a state function."[3] The problem with using a state definition is that it may be insufficient considering what is expected by the federal government. "What is missing, both in accumulated state law and in popular consensus, is an overarching view of what constitutes an adequate education and what resources are required to provide it."[4] Thomas and Davis assert that "an adequate education is not a legal theory. Rather, it is a judicial

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[1] No Child Left Behind Act of 2001, 20 U.S.C. § 6301.

[2] U.S. Department of Education, 2002. *The No Child Left Behind Act of 2001: The Public Law print of PL 107-110. Retrieved May 2008 from http://www.ed.gov/policy/elsec/leg/esea02/index.html?exp=0.*

[3] Patricia F. First and Barbara M. DeLuca, "The Meaning of Educational Adequacy: The Confusion of DeRolph," *Journal of Law and Education*, 32, no. 2 (2003): 201.

[4] Ibid.

interpretation,"[5] which will vary between states depending on how adequacy is or is not defined in the state constitutions' education clauses.

Guthrie and Rothstein are of the opinion that

> When the 'foundation' finance distribution concept was originally adopted by states, and as it continues in most states today, governors and legislatures define 'adequate' by determining how much state revenue is available, or how much additionally they are willing to generate through added taxation. This aggregate revenue amount has then been embedded in a minimum 'foundation' distribution formula. Whatever this per-pupil minimum spending amount, it has then been presumed to be adequate.[6]

In other words adequacy was a political decision (the politicians decided what was adequate) instead of a decision based on students' needs. Clune describes the new definition of adequacy as true adequacy and explains that "the whole point of true adequacy is to achieve high minimum outcomes for a defined group of students."[7] In order for students to reach high standards, Conley and Picus discuss what they call the notion of adequacy. "The notion of adequacy is the provision of a set of strategies, programs, curriculum, and instruction, with appropriate adjustments for special-needs students, districts, and schools, and their (sic) full financing, that is sufficient to teach students to high standards."[8]

Many state legislatures have begun to explore the concept of funding at an adequate level because of the expectation of all students meeting high standards as well as the problems with current funding plans providing equal moneys but not producing comparable education among

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[5] M. Donald Thomas and E. E. Gene Davis, *An Adequate Education Defined*, (Bloomington, Indiana: Phi Delta Kappa Educational Foundation, 2001):15.

[6] James W. Guthrie and Richard Rothstein, "Enabling 'Adequacy' to Achieve Reality: Translating Adequacy into State School Finance Distribution Arrangements," in *Equity and Adequacy in Education Finance*, ed. Helen F Ladd, Rosemary Chalk, and Janet S. Hansen, (Washington, DC: National Academy Press, 1999): 211-214.

[7] William H. Clune, "The Shift From Equity to Adequacy in School Finance," *Educational Policy* 8, no. 4 (1994): 384.

[8] Allan R. Odden and Lawrence O. Picus, *School Finance: A Policy Perspective*, (Boston, MA: McGraw-Hill, 2004): 71-72.

schools.[9] "In most states, the systems of school finance in place today do not explicitly link the availability of funds and the educational performance of students."[10] Rather than linking funds with performance, the current "finance systems focus on equalizing property tax bases and per pupil expenditures across school districts."[11]

State legislatures need to address the fact that "costs are higher in some districts than others largely because more resources are required to educate some students compared to others and because some districts will have to pay more money than other districts to attract high quality teachers."[12] Most states determine funding to school districts using a foundation formula. Reschovsky and Imazeki argue

> to guarantee the provision of adequate education, it is necessary to develop a foundation formula where the foundation level of spending varies according to differences in costs across districts and where the average foundation level equals the dollar amount necessary to meet the performance standards associated with educational adequacy in districts with average costs.[13]

Nakib and Herrington explain that "adequacy at its fullest potential shifts the purpose of equal funding from inputs to outcomes."[14] The implication of shifting from inputs to outcomes goes beyond ensuring equal funding for school districts. Student outcomes must be equal in order to ensure an adequate education. Inputs include the level of educational service such as

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[9] David T. Conley and Lawrence O. Picus, "Oregon's Quality Education Model: Linking Adequacy and Outcomes," *Educational Policy* 17, no. 5 (2003): 586-612.

[10] Andrew Reschovsky and Jennifer Imazeki, "Achieving Educational Adequacy through School Finance Reform," *Journal of Education Finance* 26, no. 4 (2001): 374. One should be informed of the state formulas that have cost-of-living adjustments, e.g., Alaska, Colorado, Florida, Massachusetts, Ohio, Texas, Virginia, and Wyoming. Florida Statutes § 1011.62, v (2). The state of Florida accounts for cost of living in the state education formula.

[11] Ibid.

[12] Ibid, 375.

[13] Ibid, 391.

[14] Yasser Nakib and Carolyn D. Herrington, "The Political Economy of K-12Education Finance: the Context of a Fast Growing Large State," *Journal of Education Finance* 23 (1998): 361.

resources and the performance standards. Outcomes include outputs such as test scores and graduation rates.[15] Outputs can also be the economic return to both the individual and society such as an active, informed citizen.[16]

"Recent adequacy work demonstrates that categorical weights for poverty and at-risk and non-English language students are far less than what is needed if we are serious about all students performing up to standard."[17] Mathis reviewed recent standards-based adequacy studies and found that in order for students to meet high standards, states need to increase overall education funding 20 to 50 percent.[18]

When reviewing court cases, legal arguments had shifted from equity to adequacy during the mid 1980s.[19] Minorini and Sugarman[20] attribute the shift to the National Commission on Excellence in Education's 1983 report, *A Nation at Risk*.[21] Verstegen explains the shift from equity to adequacy by discussing school funding systems. "The conflict between the new high standards for all children and old finance systems designed mainly to aid a minimum education is a conflict between ends and means, and creates a formidable barrier to teaching all children to high standards."[22]

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[15] First and DeLuca, 212.

[16] Ibid.

[17] William Mathis, "Financial Challenges, Adequacy, and Equity in Rural Schools and Communities," *Journal of Education Finance* 29, no. 2 (2003): 132.

[18] Ibid.

[19] First and DeLuca, 185-215.

[20] Paul A. Minorini and Stephen D. Sugarman, "School Finance Litigation in the Name of Educational Equity: Its Evolution, Impact, and Future," in *Equity and Adequacy in Education Finance: Issues and Perspectives*, ed. Helen F. Ladd, Rosemanry Chalk, and Janet S. Hansen (Washington, DC: National Academy Press, 1999): 34-71.

[21] National Commission on Excellence in Education, *A Nation at Risk: The Imperative for Educational Reform* (1983).

[22] Deborah A. Verstegen, "Financing the New Adequacy: Towards New Models of State Education Finance Systems That Support Standards Based Reform," *Journal of Education Finance* 27, no. 3 (2002): 756.

> Embedded in the concept of educational adequacy is an understanding that just because a school funding system provides school districts with equal resources does not guarantee that school districts are able to generate equal academic performance. In other words, finance systems that equalize revenues may still exhibit large disparities in student outcomes and not succeed in providing many of their students with an 'adequate' education. The reason for this outcome is that the amount of money needed to achieve any given student performance standard may be very different across school districts located in different parts of a state or with students from different backgrounds.[23]

Verstegen summarizes the reasons why America has shifted from equity concerns to adequacy concerns.

> Over the past several decades, all states have developed curriculum standards defining the knowledge, skills, and content students should know at various stages of their education. These standards generally call for a rigorous, high quality education program for all students, not a minimum or basic education. Likewise, recent court decisions overturning state aid systems have also interpreted state constitutions as requiring a high level of education necessary to enable a child to be an effective citizen and competitor in the labor market of the 21st century."[24]

With today's federal government focusing on outcomes, all providers of education must do their part for students to reach high standards. "The state must supply adequate resources, the district must provide support, and the school must implement the improvements to keep the money."[25]

There are different methods that have been used to configure the cost of an adequate education. One method is the cost function which uses complex statistical analysis. "This research has suggested that large urban school districts require funding levels two to three times higher than the average expenditure level for the rest of the state."[26] A second method is the successful schools model which identifies districts that have been successful with students while

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[23] Jennifer Imazeki and Andrew Reschovsky, "Estimating the Costs of Meeting the Texas Educational Accountability Standards," *Journal of Education Finance* 29, no. 1 (2004): 2.

[24] Ibid.

[25] Clune, "The Shift From Equity to Adequacy, 385.

[26] Conley and Picus, 589.

eliminating the outlier districts.[27] Neither the cost function nor the desired results model determines how the funds given to the school districts are being utilized in individual schools.[28]

A third method to configure an adequate education is the professional judgment approach. This approach has a group of educators identify the inputs needed to establish a set standard and then the cost of the resources is determined.[29] This method does not require educators to look at the research to support their recommendations nor does it differentiate between types of schools or students. A variation that has been used for the professional judgment approach is to survey principals on different parameters to determine adequate inputs. Survey results are then shared with the professional judgment panels.

A final method is the evidence-based design. This design uses the research from school designs, identifies the inputs needed for the design, and then determines the cost. The whole-school design method is currently referred to as the evidence-based approach. This approach uses educational research to determine what resources should be used in schools in order to meet state performance standards based on state tests.

Of the four methods no single method has been identified as the best approach to determine an adequate level of funding for education. A combination of the approaches has been used to determine what adequate funding would cost in certain states,[30] while others have used

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[27] Ibid, 586-612.

[28] Ibid, 590.

[29] Ibid, 591

[30] See e.g. Lawrence O. Picus, "An Evidenced-Based Approach to School Finance Adequacy in Arizona, Final Report," (June 2004); Lawrence O. Picus "An Evidenced-Based Approach to School Finance Adequacy in Arkansas," (Sept. 2003); John Augenblick and John Myers, "Calculation of the Cost of an Adequate Education in Colorado using the Professional Judgement (sic) and the Successful School District Approaches," (Jan. 2003); John Augenblick, Robert Palaich, and Associates, "Estimating Colorado School District Costs to Meet State and Federal Education Accountability Requirements," (Oct. 2006); John Augenblick, Robert Palaich, Justin Silverstein, Douglas Rose, and Dale DeCesare, "Estimating the Cost of an Adequate Education in Connecticut," (June 2005); John Augenblick, John Myers, Justin Silverstein, and Anne Barkis, "Calculation of the Cost of a Suitable Education in

one method.[31] This study analyzed the current adequacy studies to determine if there was one approach that could be used to configure an adequate education in a state like Florida where expenditure levels are similar across districts.

Kansas in 2000-2001 using Two Different Analytical Approaches," (May 2002); Legislative Division of Post Audit State of Kansas, "Elementary and Secondary Education in Kansas: Estimating the Costs of K-12 Education Using Two Approaches," (Jan. 2006); John Augenblick and John Myers, "Calculation of the Cost of an Adequate Education in Maryland in 1999-2000 Using Two Different Analytic Approaches" (Sept. 2001); Justin Silverstein, Doug Rose, and John Myers, "Estimating the Cost of an Adequate Education in Minnesota," (Nov. 2006); R. Craig Wood, Donald Robson, Merle Farrier, Stephen Smith, Joyce Silverthorne, Michael Griffith, " Determining the Cost of Providing an Adequate Education in the State of Montana," (Oct. 2005); John Augenblick, Justin Silverstein, Amanda R. Brown, Douglas Rose, Dale DeCesare, and Amy Berk Anderson, "Estimating the Cost of an Adequate Education in Nevada," (August 2006); R.C. Wood & Associates, "State of Rhode Island Education Adequacy Study," (March 2007); John Augenblick, Amanda Brown, Dale DeCesare, John Myers, and Justin Silverstein, "Estimating the Cost of an Adequate Education in South Dakota," (January 2006); Augenblick, Palaich and Associates, Inc., "Calculation of the Cost of an Adequate Education in Tennessee in 2001-02 using the Professional Judgment Approach and the Successful School District Approach," (December 2003); David T. Conley and Kathryn C. Rooney, "Washington Adequacy Funding Study," (Jan. 2007); Lawrence O. Picus, "An Evidence-Based Approach to Recalibrating Wyoming's Block Grant School Funding Formula," (November 30, 2005).

[31] See e.g. The National Conference of State Legislators, "Arizona English Language Learner Cost Study," (February 2005); Allan Odden, Lawrence Picus, and Michael Goetz, "Recalibrating the Arkansas School Funding Structure," (Aug. 2006); Jay Chambers, Jesse Levin, and Danielle DeLancey, "Efficiency and Adequacy in California School Finance: A Professional Judgment Approach," (Dec. 2006); Grant Thornton, "State of Hawaii Adequacy Funding Study," (March 2005); John Augenblick and John Myers, "A Procedure for Calculating a Base Cost Figure and an Adjustment for At-Risk Pupils that Could be Used in the Illinois School Finance System," (June 2001); William Duncombe and John Yinger, "Estimating the Costs of Meeting Performance Outcomes Adopted by the Kansas State Board of Education," (Dec. 2005); Deborah Verstegen, "Calculation of the Cost of an Adequate Education in Kentucky: A Professional Judgment Approach," *Education Policy Analysis Archives* 12, no. 8 (2004). Retrieved May 4, 2007 from http://epaa.asu.edu/epaa/v12n8/; Lawrence O. Picus and Associates, Allan Odden, Mark Fermanich, "A State-of-the-Art Approach to School Finance Adequacy in Kentucky," (Feb. 2003); Lawrence O. Picus, Allan Odden, and Mark Fermanich, "A Professional Judgment Approach to School Finance Adequacy in Kentucky," (May 2003); Maine Education Policy Research Institute, "Essential Programs and Services: Equity and Adequacy in Funding to Improve Learning for All Children," (Jan. 1999); Management Analysis & Planning, Inc., "A Professional Judgment Approach to Determining Adequate Education Funding in Maryland," (June 2001); Massachusetts Business Alliance for Education, "Every Child a Winner," (July, 1991); Mark Haveman, "Determining the Cost of an Adequate Education in Minnesota: Implications for the Minnesota Education Finance System." (February, 2004); John Myers and Justin Silverstein, "Calculation of the Cost of a Suitable Education in Montana in 2001-2002 Using the Professional Judgment Approach," (August 2002); William Duncombe, "Estimating the Cost of an Adequate Education in New York. Working Paper," (2002); New York State Education Department, "Regents Proposal on State Aid to School Districts for 2004-05," (January 2004); Jay G. Chambers, Thomas B. Parrish, Jesse D. Levin, James R. Smith, James W. Guthrie, Rich C. Seder, and Lori Taylor, "The New York Adequacy Study: Determining the Cost of Providing All Children in New York an Adequate Education," Volume 1 – Final Report, (March 2004); Standard and Poor's, "Resource Adequacy Study for the New York Commission on Education Reform," (March 2004); John Augenblick, Robert Palaich, et. al., "Calculation of the Cost of an Adequate Education in North Dakota in 2002-2003 using the Professional Judgement (sic) Approach; "The Oregon Quality Education Model: Relating Funding and Performance," Legislative Council on the Oregon Quality Education Model, Oregon Legislative Assembly, (June 1999); Oregon Quality Education Commission, "Oregon Quality Education Model-2000," (January 2000); Timothy J. Gronberg, Dennis W. Jansen, Lori L. Taylor, and Kevin Booker, "School Outcomes and School Costs: The Cost Function Approach," (2004); Jennifer Imazeki and Andrew Reschovsky, "Estimating the Costs of Meeting the Texas Educational Accountability Standards," (2004); David Conley and William Freund, "What Will It Take? Defining a Quality Education in Washington and a

Statement of the Problem

Florida currently funds its public schools through the Florida Education Finance Program (FEFP).[32] The legislature adopted the FEFP in 1973. Using the FEFP, the responsibility of funding public education is shared between the state and Florida's sixty-seven school districts.[33] "The FEFP is a distribution formula and does not assess the adequacy or the outcomes of the distribution."[34] However, the FEFP has withstood several constitutional challenges based on equity and adequacy. The formula was developed "to guarantee to each student in the Florida public school system the availability of programs and services appropriate to his educational needs which are substantially equal to those available to any similar student notwithstanding geographic differences and varying local economic factors."[35]

Due to the passage of the No Child Left Behind Act[36] an abundance of data is produced by states which allows policymakers and educators to examine adequate yearly progress in individual schools. Litigation has changed from equity concerns to adequacy issues, leaving courts to answer the question if the funding provided to the school districts is adequate to meet

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New Vision of Adequacy for School Funding," (March 2003); Jack Norman, "Funding Our Future: An Adequacy Model for Wisconsin School Finance," (June 2002); Allan Odden, Lawrence O. Picus, Sarah Archibald, Michael Goetz, Michelle Turner Mangan, and Anabel Aportela, "Moving From Good to Great in Wisconsin: Funding Schools Adequately And Doubling Student Performance," (March 2007); Management Analysis & Planning Associates, "A Proposed Costs Based Block Grant Model for Wyoming School Finance," (April 1997); Management Analysis & Planning Associates, "Proposed Revisions to the Cost Based Block Grant," (Jan. 2002).

[32] Florida Statutes, § 236.012(1) (1998). This section of the Florida Statutes was renumbered after the "Florida K-20 Education Code" rewrite, effective January 7, 2003.

[33] FLA. CONST. art. XII § 9a2.

[34] Nakib and Herrington, 353.

[35] Florida Statutes, § 236.012(1) (1998). This section of the Florida Statutes was renumbered after the "Florida K-20 Education Code" rewrite, effective January 7, 2003.

[36] No Child Left Behind Act of 2001, 20 U.S.C. § 6301.

high academic standards.[37] Different methodologies have been used to try and determine what an adequate base student allocation is. The various methods have yielded large differences in what is considered adequate funding.

Purpose of the Study

The purpose of this study was to examine the different methodologies used to determine what an adequate education would cost and if there were a state of the art adequacy study. The following questions were addressed by this study:

1. What are the strengths and weaknesses of the current methodologies used to determine adequate funding?

2. Did the previous adequacy studies use the previously stated methodologies and if so did they use them correctly?

3. Using the information previously stated how does a state like Florida that has similar expenditures between districts utilize the methodologies?

4. Can an adequacy model be developed or applied for a state like Florida?

Significance of the Study

There are various methods used to determine if a state's base student allocation were adequate but there have been no studies that have identified the strengths and weaknesses of each method and if there is one best method for determining adequate funding. Most studies of adequacy deal with a single state's funding or a single methodology for determining adequacy. This study intended to analyze all of the adequacy studies that have been conducted up to this point to identify the strengths and weaknesses. There have been no adequacy studies done for

[37] See e.g. *Claremont School District v. Governor*, 703 A.2d 1353 (NH 1997); *DeRolph v. State*, 79 Oh.St.3d 297, 1997; *Leandro v. State*, 472 S.E.2d 11(N.C. 1996); *Campaign for Fiscal Equity v. State of New York*, 86 N.Y.2d 307, (N.Y. 1995); *Campbell v. State*, 907 P.2d 1238, (Wyo. 1995*); McDuffy v. Secretary of the Executive Office of Education*, 615 N.E.2d 516 (Mass. 1993); *Alabama Coalition for Equity v. Hunt, Op. of the Justices*, 624 So. 2d 107 (Ala. 1993); *Tennessee Small Sch. System. v. McWherter*, 851 S.W.2d 139, 141 (Tenn. 1993); *Abbott v. Burke*, 575 A.2d 359, 363 (N.J. 1990).

the state of Florida and this study intended to determine if there was an adequacy method that could be used in Florida.

Methodology

This study analyzed the strengths and weaknesses of each methodology used to determine the cost of an adequate education. It examined the methodologies utilized in previous adequacy studies. The information gathered from analyzing the strengths and weaknesses of each method and examining the previous studies was used to determine if a model could be used for a state like Florida where there are similar expenditures across the state.

Definition of Terms

Adequacy, as used in this study, refers to the level of funding needed in order for all students to achieve at high skill levels.[38]

Base Student Allocation refers to the amount per pupil that a state legislature has determined is the appropriate funding for students.

Equity refers to funding students according to their preexisting differences in order to achieve fairness.

Horizontal Equity guarantees each student "a particular amount of money for the provision of a basic, equal education across the state."[39]

Vertical Equity provides disadvantaged students (special education or those living in poverty) compensatory dollars in addition to the base funding in order to offer equal educational opportunities.[40]

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[38] Clune, "The Shift From Equity to Adequacy," 384.

[39] First and De Luca, 188.

[40] Ibid.

Production Function Research examines the relationship between money and educational achievement.

Limitations and Delimitations

Data used in this study are limited to those states that have had adequacy studies conducted and published or released to the general public. This study did not analyze the equity of money distributed to schools and districts. The focus was on the methodologies utilized to determine adequate school funding.

Summary

Most state's current funding systems were created in the early 1900s when the expectation was for students to meet minimum criteria. The definition for an adequate education has changed over time from requiring minimum standards to the present expectation of high achievement for all students. Many studies have been conducted in several states to examine the current funding systems due to legislation passed or court rulings. Various figures have been reached to determine the cost of an adequate education depending on the methods used.

One way of addressing adequacy among school districts within a state is to increase "the level of spending of the lower-spending districts to be at par with the highest-spending districts."[41] This assumes that the highest-spending districts are spending what is adequate. The difficulty with attempting this in Florida is that the highest-spending districts do not spend much more than the lowest-spending districts.

This study attempted to identify if there were a state of the art adequacy study. It also analyzed the methodologies used to configure an adequate education and determined if there is a model that can be used in a state like Florida's with similar expenditures across districts. The

[41] Nakib and Herrington, 362.

impact of this study will help states configure the cost of an adequate education for students to reach high academic standards.

CHAPTER 2
REVIEW OF LITERATURE

Introduction

The purpose of this study was to examine the different methodologies utilized to determine what an adequate education would cost and if there were a model that could be used in a state like Florida's with similar expenditures across districts. This chapter contains the literature relevant to this study. First, a discussion of the shift from equity to adequacy was discussed. Relevant equity and adequacy court cases were summarized. Then, attempts to define an adequate education were presented. Research on the correlation between money and student achievement were reviewed. The four methodologies developed to determine what an adequate education would cost were then discussed. Adequacy studies that have been conducted in several states were summarized. Finally, a review of Florida's Education Finance Program (FEFP), Florida's court challenges to the FEFP and the courts' standard for an adequate education were presented.

The Shift from Equity to Adequacy

Thro[1] identified three waves of school finance litigation. The first wave centered on the language in the federal Constitution's Equal Protection Clause.[2] The first wave was from 1971 with the California ruling on *Serrano v. Priest*[3] and ended in 1973 with the U.S. Supreme Court's judgment in *San Antonio Independent School District v. Rodriguez.*[4] The *Rodriguez* decision ended school finance challenges centered on the federal Equal Protection Clause,

[1] William E. Thro, "Judicial Analysis During the Third Wave of School Finance Litigation: The Massachusetts Decision as a Model," *B.C. Law Review*, 35, no 4 (1994).

[2] U.S. CONST. amend. XIV, § 1.

[3] 487 P.2d 1241 (Cal. 1971); 557 P. 2d. 929 (Cal. 1976)

[4] 411 U.S. 1 (1973).

therefore moving the school finance argument from a federal to a state and local issue. The second wave concentrated on the state constitutions, specifically the equal protection and education clauses and began in 1973 with the ruling on *Robinson v. Cahill*.[5] "The court challenges based on education clauses assert that those clauses compel state legislatures to provide all schools with sufficient funding to provide an education meeting certain basic standards of quality."[6] Whereas the first two waves focused on equity issues, the third wave of school finance litigation focuses on adequacy of education and the state education clauses. The third wave began in 1989 with the ruling in *Rose v. Council for Better Education.*[7]

Equity challenges were focused on guaranteeing that all students, especially those residing in poorer school districts, received equal funding.[8] Adequacy challenges focus on guaranteeing that all students receive sufficient funds in order to meet educational standards required by the state.[9] "An increasing number of states are investigating adequacy funding, in part due to the relative failure of funding equalization schemes to result in comparable educations and in equal measure due to the increasing emphasis by states on all students reaching high standards."[10]

"Under an adequacy argument, a state's school finance system may be perfectly equitable – everyone gets the same treatment – but it may be too low to provide a sufficient and necessary

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[5] 303 A.2d 273 (N.J. 1973), cert. denied, 414 U.S. 976 (1973).

[6] Kevin Carey, "Overview of K-12 Education Finance," *Center on Budget and Policy Priorities*, (Washington, DC, 2002): 13.

[7] 790 S.W.2d 186 (Ky. 1989).

[8] Carey.

[9] See *Rose v. Council for Better Education, Inc.*, 790 S.W.2d 186 (Ky. 1989); *Campaign for Fiscal Equity v. State* 86 N.Y.2d 307 (1995); *DeRolph v. State*, 91 Ohio St.3d 1274 (1997).

[10] Conley and Picus, 588.

education to a group of children."[11] For example, "urban resources may still be inadequate to educate urban students appropriately."[12] Hanushek argues that "it is possible to have a very equitable system that is 'inadequate' [for some populations] because the overall resources are insufficient to meet some desired outcomes. (Alabama is the example frequently given)."[13] "For many rural districts, a central issue is that they will have to spend substantial amounts of money per student in order to meet state and/or federal student performance standards."[14]

> An 'adequacy' claim does not complain about disparities in funding among school districts per se, but instead alleges that one or more districts lack the resources necessary to provide students with adequate educational opportunities. In effect, these advocates charge that schools are failing their clients, that more money is needed to serve them properly, and that the state constitution requires that increased spending.[15]

The difficulty with increasing spending for some groups to reach an adequacy standard is that the spending may then become inequitable.

With the focus on student achievement and high academic standards, the definition of adequacy has changed "from simply providing certain inputs (teacher/student ratio, library books, instruction minutes) to determining what resources are necessary for students to reach their academic potential."[16]

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[11] William J. Mathis, "How to Analyze Your State's Education Funding System. A Workbook from the Rural School and Community Trust Policy Program," *Rural School and Community Trust* (Washington DC, 2001): 38.

[12] Eric A. Hanushek, "A Jaundiced View of 'Adequacy' in School Finance Reform," *Educational Policy* 8, no. 4 (1994): 466

[13] Ibid.

[14] Jennifer Imazeki and Andrew Reshovsky, "Financing Adequate Education in Rural Settings," *Journal of Education Finance* 29, no. 1 (2003): 137.

[15] Minorini and Sugarman, 47.

[16] Education Commission of the States, "Determining the Cost of a Basic or Core Education," 1999: 1. Retrieved July 2005 from www.ecs.org/clearinghouse/13/18//1318.htm.

> By 2001, 49 states had some form of state testing program, with about two-thirds of the states using a high-stakes school accountability model. About half the states have tests for student graduation or promotion. The argument for adequate financial support became simplified: The state has the obligation to provide adequate funding to enable all students and schools to reach the goals mandated by the state.[17]"

In most states, the systems of school finance in place today do not explicitly link the availability of funds and the educational performance of students. Instead, school financing systems focus on equalizing property tax bases and per pupil expenditures across school districts."[18] Since high performance is now expected of all students, more court cases are coming forward to tackle this discrepancy in the finance systems.[19]

"Costs are higher in some districts than others largely because more resources are required to educate some students compared to others and because some districts will have to pay more money than other districts to attract high-quality teachers."[20] Most states determine funding to school districts using a foundation formula.[21] In order to assure that a state is providing an adequate education, it needs to design a formula "where the foundation level of spending varies according to differences in costs across districts and where the average foundation level equals the dollar amount necessary to meet the performance standards associated with educational adequacy in districts with average costs."[22] For school funding

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[17] Mathis, "How to Analyze," 38.

[18] Reschovsky and Imazeki, 374.

[19] See e.g. *Claremont School District v. Governor*, 703 A.2d 1353 (N.H. 1997); *DeRolph v. State*, 79 Oh.St.3d 297, 1997; *Leandro v. State*, 472 S.E.2d 11(N.C. 1996); *Campaign for Fiscal Equity v. State of NewYork*, 86 N.Y.2d 307, (N.Y. 1995); *Campbell v. State*, 907 P.2d 1238, (Wyo. 1995*); McDuffy v. Secretary of the Executive Office of Education*, 615 N.E.2d 516 (Mass. 1993); *Alabama Coalition for Equity v. Hunt, Op. of the Justices*, 624 So. 2d 107 (Ala. 1993); *Tennessee Small Sch. System. v. McWherter*, 851 S.W.2d 139, 141 (Tenn. 1993); *Abbott v. Burke*, 575 A.2d 359, 363 (N.J. 1990).

[20] Reschovsky and Imazeki, 375.

[21] Ibid, 390.

[22] Ibid, 391.

formulas, "poverty weights nationally average around 17 percent additional money."[23] While Mathis did not cite the specific adequacy studies, he stated that "recent adequacy work demonstrates that categorical weights for poverty and at-risk and non-English language students are far less than what is needed if we are serious about all students performing up to standard."[24]

Verstegen opines the reasons why America has shifted from equity concerns to adequacy concerns.

> Over the past several decades, all states have developed curriculum standards defining the knowledge, skills, and content students should know at various stages of their education. These standards generally call for a rigorous, high quality education program for all students, not a minimum or basic education. Likewise, recent high court decisions overturning state aid systems have also interpreted state constitutions as requiring a high level of education necessary to enable a child to be an effective citizen and competitor in the labor market of the 21st (sic) century.[25]

Court Cases: Adequacy

"Adequacy challenges have focused on whether the amount of money appropriated for public education in general is enough to meet the costs of providing the standard guaranteed in the state constitution."[26] Whether plaintiffs are successful in court depends in part on the verbiage in a state's constitution. In states where education is defined as providing a minimum

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[23] William J. Mathis, "Equity and Adequacy Challenges in Rural Schools and Communities," Paper presented at the Annual Meeting of the American Education Finance Association (Orlando, FL, 2003): 10.

[24] Mathis, "Financial Challenges," 132; See e.g. John Augenblick and John Myers, "Calculation of the Cost of an Adequate Education in Maryland in 1999-2000 Using Two Different Analytic Approaches," Contracted study for the Maryland Commission on Education Finance, Equity, and Excellence, 2001; John Augenblick, John Myers, Justin Silverstein, and Anne Barkis, "Calculation of the Cost of a Suitable Education in Kansas in 2000-2001 Using Two Different Analytic Approaches," Contracted by the Kansas Legislative Coordinating Council, 2002; John Myers and Justin Silverstein, "Calculation of the Cost of a Suitable Education in Montana in 2001-2002 Using the Professional Judgment Approach," Contracted by the Montana School Board Association, 2002. (This study was an advocacy piece).

[25] Verstegen, "Financing the New Adequacy," 756.

[26] Carolyn D. Herrington and Virginia Weider, "Equity, Adequacy and Vouchers: Past and Present School Finance Litigation in Florida," *Journal of Education Finance* 27, no. 1 (2001): 523.

standard, courts have ruled for the state and its finance system.[27] When the courts have ruled against states and declared the school finance system unconstitutional the courts have asserted that a minimum education is not sufficient.[28] "Adequacy requires the plaintiffs to establish and prove that an adequate education is systematically denied to children."[29]

"The 1990's saw continued development of adequacy-based education funding challenges in state courts, often with success."[30] Even if plaintiffs receive a favorable ruling in the courts, the state legislatures were ultimately responsible for changing policy relative to the court ruling. "Only with a strong legislative remedy are state legislatures able to meet the goal of educational adequacy, as required by state constitutions. Without a strong legislative remedy, further litigation may be required to assure that the goal of educational adequacy is met."[31]

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[27] See e.g. *Matanuska-Susitna Borough Sch. Dist. v. State*, 931 P.2d 391 (Alaska 1997); *Committee for Educational Rights v. Edgar*, 672 N.E.2d 1178 (Illinois 1996); *School Admin. Dist. No. 1 et al. v. Commissioner*, 659 A.2d 854 (Maine 1994); *Skeen v. State*, 505 N.W.2d 299 (Minn. 1993); *Scott v. Commonwealth*, 443 S.E.2d 138 (Virginia 1994); *Kukor v. Grover*, 436 N.W.2d 568 (Wisconsin 1989).

[28] See e.g. *Rose v. Council for Better Education*, 790 S.W.2d 186 (Kentucky 1989); *McDuffy v. Sec'y of the Exec. of Education*, 615 N.E.2d 516 (Mass. 1993); *Abbott v. Burke*, 495 *A.2d* 376 (N.J. 1985); *Abbott v. Burke*, 575 A.2d 359 (NJ 1990); *Abbott v. Burke*, 643 A.2d 575 (NJ 1994); *Abbott by Abbott v. Burke*, 693 A.2d 417 (NJ 1997); *DeRolph v. State*, 677 N.E. 733, 747 (Ohio 1997); *DeRolph v. State*, 728 N.E.2d 993 (Ohio 2000); *DeRolph v. State*, 754 N.E.2d 1184 (Ohio 2001); *DeRolph v. State*, 97 Ohio St.3d 434 (Ohio 2002); *Brigham v. State*, 692 A.2d 384 (Vermont 1997).

[29] Mathis, "How to Analyze," 41-42; See e.g. *McDuffy v. Sec'y of the Exec. of Education*, 615 N.E.2d 516 (Mass. 1993); *DeRolph v. State*, 677 N.E. 733, 747 (Ohio 1997); *DeRolph v. State*, 728 N.E.2d 993 (Ohio 2000); *DeRolph v. State*, 754 N.E.2d 1184 (Ohio 2001); *DeRolph v. State*, 97 Ohio St.3d 434 (Ohio 2002); *Abbott v. Burke*, , 495 A.2d 376 (NJ 1985); *Abbott v. Burke*, 575 A.2d 359 (NJ 1990); *Abbott v. Burke*, 643 A.2d 575 (NJ 1994); *Abbott by Abbott v. Burke*, 693 A.2d 417 (NJ 1997); *Campbell Co. School Dist. v. State*, 907 P.2d 1238 (Wyo. 1995); *Helena Elementary School District No. 1 v. State*, 769 P.2d 684 (Montana 1989).

[30] Carey, 13; See e.g. *McDuffy v. Secretary of Education*, 615 N.E.2d 516 (Mass. 1993); *DeRolph v. State*, 677 N.E. 733, 747 (Ohio 1997); *DeRolph v. State*, 728 N.E.2d 993 (Ohio 2000); *DeRolph v. State*, 754 N.E.2d 1184 (Ohio 2001); *DeRolph v. State*, 97 Ohio St.3d 434 (Ohio 2002); *Campbell Co. School Dist. v. State*, 907 P.2d 1238 (Wyo. 1995); *Claremont School District v. Gregg*, 635 A.2d 1375 (N.H. 1997); *Alabama Coalition for Equity v. Hunt*, reprinted in Appendix to *Opinion of the Justices* 624 So.2d 107 (Ala. 1993); *Tennessee Small School Systems v. McWherter*, 851 S.W.2d 139 (Tenn. 1993); *Campaign for Fiscal Equity v. State of New York*, 86 N.Y.2d 307, (N.Y. 1995); *Leandro v. State*, 472 S.E.2d 11 (N.C. 1996).

[31] Lisa R. Fine, Tina P. Hsu, Kristen G. King, and Joshua D. Janow, "Education: Federal Rights and Racial Equity, Adequacy, and Standards in K-12 Education," *Lawyers' Committee for Civil Rights Under Law*, (Washington, DC, 2003): 2; See e.g. *DeRolph v. State*, 677 N.E.2d 733 (Ohio 1997); *DeRolph v. State*, 728 N.E.2d 993 (Ohio 2000); *DeRolph v. State*, 754 N.E.2d 1184 (Ohio 2001); *DeRolph v. State*, 786 N.E.2d 60 (Ohio 2003); *Abbott v. Burke*, 495

There are some state high courts that are not willing to hear cases based on the state's education clauses; instead determining that education issues are best handled by the legislative branches of the state.[32]

> In theory, a state's foundation funding level will be an amount sufficient to guarantee an adequate education to all students; however, this cannot be taken for granted. Several courts have found state foundation levels to be inadequate. Even in a state with a strong commitment to education funding, foundation funding levels must be frequently reexamined by the legislature or risk becoming outdated, that is, the foundation revenue level may no longer reflect a realistic estimate of the cost of providing an 'adequate' education.[33]

Kentucky is one of many states "where opponents of local funding for public primary and secondary schools have challenged the constitutionality of the public school finance system."[34]

A.2d 376 (NJ 1985); *Abbott v. Burke*, 575 A.2d 359 (NJ 1990); *Abbott v. Burke*, 643 A.2d 575 (NJ 1994); *Abbott by Abbott v. Burke*, 693 A.2d 417 (NJ 1997); *Abbott v. Burke*, 798 A.2d 602 (N.J. 2002).

[32] See e.g. *Committee for Educational Rights v. Edgar*, 672 N.E.2d 1178 (Illinois 1996); *Coalition for Adequacy v. Chiles*, 680 So.2d 400 (Fla. 1996); *City of Pawtucket v. Sundlum*, 662 A.2d 40 (R.I. 1995).

[33] John G. Augenblick, John L. Myers, and Amy Berk Anderson, "Equity and Adequacy in School Funding," *The Future of Children: Financing Schools* 7, no. 3 (1997): 65.

[34] William N. Evans, Sheila E. Murray, and Robert M. Schwab, "Schoolhouses, Courthouses, and Statehouses After Serrano," *Journal of Policy Analysis and Management* 16, no. 1 (1997): 11; See *Alabama Coalition for Equity v. Hunt*, reprinted in Appendix to *Opinion of the Justices* 624 So.2d 107 (Ala. 1993); *Roosevelt Elementary School District 66 v. Bishop*, 877 P.2d 806 (Ariz. 1994); *Dupree v. Alma School District*, 651 S.W.2d 90 (Ark. 1983); *Lake View Sch. Dist. v. Huckabee*, 10 S.W. 3d 892 (Ark. 2000); *Lake View Sch. Dist. v. Huckabee*, 91 S.W.3d 472 (Ark. 2002); *Serrano v. Priest*, 487 P.2d 1241 (Cal. 1971); *Serrano v. Priest*, 557 P.2d 929 (Cal. 1976); *Lujan v. Board of Education*, 649 P.2d 1005 (Colo. 1982); *Horton v. Meskill*, 376 A.2d 359 (Ct. 1977); *Sheff v. O'Neill*, 678 A.2d 1267 (Ct. 1996); *Rose v. Council for Better Education, Inc.*, 790 S.W.2d 186 (Ky. 1989); *McDuffy v. Secretary of Education*, 615 N.E.2d 516 (Mass. 1993); *Committee for Educational Equality v. State*, 878 S.W.2d 446 (Mo. 1994); *Helena Elementary School District v. State*, 769 P.2d 684 (Mont. 1989); *Helena Elementary School District v. State*, 784 P.2d 412 (Mont. 1990); *Claremont School District v. Governor*, 635 A.2d 1375 (N.H. 1993); *Claremont School District v. Governor*, 703 A.2d 1353 (N.H. 1997); *Claremont School District v. Governor*, 794 A.2d 744 (N.H. 2002); *Robinson v.* Cahill, 303 A.2d 273 (N.J. 1973); *Robinson v. Cahill*, 355 A.2d 129 (N.J. 1976); *Abbott v. Burke*, 575 A.2d 359 (N.J. 1985); *Abbott v. Burke*, 575 A.2d 359 (N.J. 1990); *Abbott v. Burke*, 643 A.2d 575 (N.J. 1994); *Abbott v. Burke*, 693 A.2d 417 (N.J. 1997); *Abbott v. Burke*, 798 A.2d 602 (N.J. 2002); *Leandro v. State*, 488 S.E.2d 249 (N.C. 1997); *DeRolph v. State*, 677 N.E.2d 733 (Ohio 1997); *DeRolph v. State*, 728 N.E.2d 993 (Ohio 2000); *DeRolph v. State*, 754 N.E.2d 1184 (Ohio 2001); *DeRolph v. State*, 786 N.E.2d 60 (Ohio 2003); *Tennessee Small School Systems v. McWherter*, 851 S.W.2d 139 (Tenn. 1993); *Tennessee Small School Systems v. McWherter*, 894 S.W.2d 734 (Tenn. 1995); *Edgewood Independent School District v. Kirby*, 777 S.W.2d 391 (Tex. 1989); *Edgewood Independent School District v. Kirby*, 804 S.W.2d 491 (Tex 1991); *Edgewood Independent School District v. Kirby*, 826 S.W.2d 489 (Tex. 1992); *Edgewood Independent School District v. Kirby*, 893 S.W.2d 450 (Tex. 1995); *Brigham v. State*, 692 A.2d 384 (Vt. 1997); *Seattle School District No. 1 v. State*, 585 P.2d 71 (Wash. 1978); *Pauley v. Kelly*, 255 S.E.2d 859 (W.Va. 1979); *Washakie County School District v. Herschler*, 606 P.2d 310 (Wyo. 1980); *Campbell County School District v. State*, 907 P.2d 1238 (Wyo. 1995); *Matanuska-Susitna Borough*

After its ruling on the *Rose v. Council for Better Education*, Kentucky has been recognized as "the model state for school education reform."[35] "In reaching a decision on adequacy, the court must first determine whether the education clause establishes a minimum or an optimal education standard, or something in between."[36] In Wyoming[37] the constitution was interpreted as only requiring a basic education whereas in Kentucky[38] the education standard required was higher than any district was currently providing. "Regardless of the litigation theory pursued, the fate of a plaintiffs' school funding challenge seems to be determined by whether a court takes a broad or narrow view of the rights bestowed by its state constitution."[39] Due to court decisions in the following states – Alabama,[40] New Hampshire,[41] North Carolina,[42] Ohio,[43] Vermont,[44] and Wyoming[45] – the legislatures have tried to define an adequate education.

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v. State, 931 P.2d 391 (Alaska 1997); *Coalition for Adequacy and Fairness in School Funding v. Chiles*, 680 So. 2d 400 (Fla. 1996); *McDaniels v. Thomas*, 285 S.E.2d 156 (Ga. 1981); *Thompson v. Engelking*, 537 P.2d 635 (Idaho 1975); *Idaho Schools for Equal Educ. Opportunity v. Evans*, 850 P.2d 724 (Idaho 1993); *Idaho Schools for Equal Educ. Opportunity v. Evans*, 976 P.2d 913 (Idaho 1998); *Committee for Educational Rights v. Edgar*, 672 N.E. 2d 1178 (Ill. 1996); *Lewis E. v. Spagnolo*, 713 N.E. 2d 798 (Ill. 1999); *Unified School District v. State*, 885 P.2d 1170 (Kan. 1994); *Charlet v. State*, 713 So.2d 1199 (La. Ct. App. 1998); *School Administrative District No. 1 v. Commissioner*, 659 A.2d 854 (Me. 1994); *Hornbeck v. Somerset Board of Education*, 458 A.2d 758 (Md. 1983); *Governor v. State Treasurer*, 203 N.W.2d 457 (Mich. 1972); *Milliken v. Green*, 212 N.W.2d 711 (Mich. 1973); *East Jackson Public Schools v. State*, 348 N.W.2d 303 (Mich. 1984); *Skeen v. State*, 505 N.W.2d 299 (Minn. 1993); *Gould v. Orr*, 506 N.W.2d 349 (Neb. 1993); *Levittown School District v. Nyquist*, 439 N.E.2d 359 (N.Y. 1982); *Campaign for Fiscal Equity v. State*, 655 N.E.2d 661 (N.Y. 1995); *Bismarck Public Schools v. North Dakota*, 511 N.W.2d 247 (N.D. 1994); *Fair School Finance Council v. State*, 746 P.2d 1135 (Okla. 1987); *Olsen v. State*, 554 P.2d 139 (Or. 1976); *Coalition for Equitable School Funding v. State*, 811 P.2d 116 (Or. 1991); *Danson v. Casey*, 399 A.2d 360 (Pa. 1979); *Pennsylvania Association of Rural and Small Schools v. Ridge*, 737 A.2d 246 (pa. 1999); *City of Pawtucket v. Sundlun*, 665 A.2d 40 (R.I. 1995); *Richland County v. Campbell*, 364 S.E.2d 470 (S.C. 1988); *Abbeville County School District v. State*, 515 S.E. 2d 535 (S.C. 1999); *Scott v. Commonwealth*, 443 S.E.2d 138 (Va. 1994); *Kukor v. Grover*, 436 N.W.2d 568 (Wis. 1989); *Vincent v. Voight*, 614 N.W.2d 388 (Wis. 2000)

[35] Fine, Hsu, King, and Janow, 3.

[36] Ibid.

[37] *Campbell County v. State*, 907 P.2d 1238 (Wyo. 1995).

[38] *Rose v. Council for Better Education*, 790 S.W.2d 186 (Ky. 1989).

[39] Minorini and Sugarman, 47.

[40] *Alabama Coalition for Equity v. Hunt, Op. of the Justices*, 624 So. 2d 107 (Ala. 1993).

[41] *Claremont School District v. Governor*, 635 A. 2d 1375, (N.H. 1997).

It is argued, in many states that the rural communities cannot generate enough funds to provide an adequate education and since these communities do not have political power to influence the legislators, rural school communities have been forced to resolve the inadequacies through litigation.[46] "In all, courts in ten states have declared state school financing systems unconstitutional because they have not succeeded in providing all students with, in the words of the courts, an adequate education."[47]

"As an overview, the states of Arizona, California, Connecticut, Kentucky, Montana, West Virginia, Wisconsin, and Wyoming have declared that education is a fundamental right under the state constitution. States which have declared that education is not a fundamental right include Arkansas, Georgia, Idaho, Michigan, New Jersey, Ohio, Oregon, and Pennsylvania."[48]

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[42] *Leandro v. State*, 472 S.E.2d 11 (N.C. 1996).

[43] *DeRolph v. State*, 677 N.E.2d 733 (Ohio 1997).

[44] *Brigham v. State of Vermont*, 692 A.2d 384 (Vt. 1997).

[45] *Campbell County v. State*, 907 P.2d 1238 (Wyo. 1995).

[46] John Dayton, "Rural School Funding Litigation: A Review of Recent Cases, Judicial-Legislative Interactions, and Emerging Trends," *Journal of Education Finance* 29, no. 2 (2003).

[47] Michael F. Addonzio, "From Fiscal Equity to Educational Adequacy: Lessons from Michigan," *Journal of Education Finance* 28, no. 4 (2003): 459. See e.g. *Claremont School District v. Governor*, 703 A.2d 1353 (N.H. 1997); *Rose v. Council for Better Education, Inc.*, 790 S.W.2d 186 (Ky. 1989); *McDuffy v. Secretary of Education*, 615 N.E.2d 516 (Mass. 1993); *Alabama Coalition for Equity v. Hunt*, reprinted in Appendix to *Opinion of the Justices* 624 So.2d 107 (Ala. 1993); *Abbott v. Burke*, 495 A.2d 376 (N.J. 1985); *Abbott v. Burke*, 575 A.2d 359 (N.J. 1990); *Abbott v. Burke*, 643 A.2d 575 (N.J. 1994); *Abbott v. Burke*, 693 A.2d 417 (N.J. 1997); *Abbott v. Burke*, 798 A.2d 602 (N.J. 2002); *Campaign for Fiscal Equity v. State*, 655 N.E.2d 661 (N.Y. 1995); *Leandro v. State*, 488 S.E.2d 249 (N.C. 1997); *DeRolph v. State*, 677 N.E.2d 733 (Ohio 1997); *DeRolph v. State*, 728 N.E.2d 993 (Ohio 2000); *DeRolph v. State*, 754 N.E.2d 1184 (Ohio 2001); *DeRolph v. State*, 786 N.E.2d 60 (Ohio 2003); *Tennessee Small School Systems v. McWherter*, 851 S.W.2d 139 (Tenn. 1993); *Campbell County School District v. State*, 907 P.2d 1238 (Wyo. 1995).

[48] R. C. Wood, *Educational Finance Law: Constitutional Challenges to State Aid Plans, An Analysis of Strategies*, 3d ed. (Dayton, Ohio, Education Law Association, 2007): 54-55.

Defining an Adequate Education

Although equity and adequacy have played a significant role in school litigation, "there are no universally accepted definitions for either of these words in education funding."[49] Even under the tightening federal scrutiny of the No Child Left Behind Act of 2001, state legislatures retain significant latitude to define the average level of desired student outcomes, within the boundaries of their own states' constitutional requirements regarding public schooling.[50] "What is missing, both in accumulated state law and in popular consensus, is an overarching view of what constitutes an adequate education and what resources are required to provide it."[51] Defining adequacy "requires policy and value judgments about which achieving consensus, ultimately, may be more difficult."[52]

> A fundamental flaw in contemporary standards based ideology, such as No Child Left Behind, is that all children can learn to the same level within existing resources and within the traditional ways in which school monies are distributed. Schools may be able to control 25 percent of the variance in learning but a serious effort to make sure that all children learn to reasonable common achievement levels requires an outside-the-school definition of opportunity to learn.[53]

"For both ideological and ease-of-measurement reasons, the definition of adequacy has been reduced primarily to test scores."[54]

Equity focuses on inputs whereas adequacy focuses on outcomes. Even though there are no universal definitions of equity or adequacy, according to Clune "equity means equal and

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[49] Augenblick, Myers, and Anderson, 63.

[50] Bruce D. Baker, "The Emerging Shape of Educational Adequacy: From Theoretical Assumptions to Empirical Evidence," *Journal of Educational Finance* 30, no. 3 (2005): 259.

[51] First and DeLuca, 201.

[52] Guthrie and Rothstein, 209.

[53] Mathis, "Equity and Adequacy," 9-10.

[54] Mathis, "Financial Challenges," 132.

implies that one district or school receives the same amount as another, usually in the same district or state."[55]

> The goal of school finance that is labeled *equity* is more commonly expressed as *equality of educational opportunity*. This expression recognizes that it is not possible to educate all students to the same level, for they have different preferences and innate abilities. There are many possible definitions of equal educational opportunity, but in practice the concept has been limited to mean assuring equal dollars per student or assuring enough money to provide comparable programs for students when their different needs and the costs of providing them have been taken into account.[56]

"Adequacy refers to resources that are sufficient (or adequate) to achieve some educational result, such as a minimum passing grade on a state achievement test."[57] "Originally, adequacy was defined in terms of dollars per pupil; the foundation level of funding was also considered to be the adequate level."[58] However, a relationship had not been established between the dollar-per-pupil funding and the education the students received.

> Besides trying to define it in terms of dollars per pupil, scholars have attempted to define it in terms of outcomes. That is, the school system or the state would identify what children should know by graduation. Following the delineation of graduation standards, often by state legislatures, researchers would use a variety of analytical tools to determine the number of dollars necessary to provide the legislated level of education.[59]

"One way to define an adequate education is to accept that whatever a state chooses to define as adequate is adequate since education is a state function."[60] Rather than defining adequacy by

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[55] Clune, "The Shift From Equity to Adequacy," 377.

[56] Walter I. Garms, James W. Guthrie, and Lawrence Pierce, *School Finance and Education Policy: Enhancing Educational Efficiency, Equality, and Choice*, 2d ed. (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1988): 130.

[57] William H. Clune, "Educational Adequacy: A Theory and its Remedies," *University of Michigan Journal of Law Reform* 28, no. 3 (1995): 481.

[58] First and DeLuca, 190.

[59] Ibid, 202.

[60] Ibid, 201.

inputs only, more and more states are defining adequacy by evaluating how school inputs are producing the outcomes desired.[61]

Odden and Picus explain a major difference between equity and adequacy. They state

> Equity implies something about a relative difference, while adequacy implies something about an absolute level. For example, a state system could have base resources distributed quite equally, such as in California and Alabama, but still not be an adequate system. Similarly, one could conceive of a state or education system (perhaps New Jersey when its response to its 1998 court case is fully implemented) with substantial differences in resources, but with the lowest-spending districts still spending above some adequacy level.[62]

Elwood Cubberley provides a definition of adequacy in his 1905 book, *School Funds and Their Apportionment*. He states:

> The duty of the state is to secure for all as high a minimum of good instruction as is possible, but not to reduce all to this minimum; to equalize the advantages to all as nearly as can be done with the resources at hand; to place a premium on those local efforts which will enable communities to rise above the legal minimum as far as possible; and to encourage communities to extend their educational energies to new and desirable undertakings.[63]

William Clune describes the term true adequacy as achieving "high minimum outcomes for a defined group of students."[64] With true adequacy, all involved – state, district, and school – must meet standards. "The state must supply adequate resources, the district must provide support, and the school must implement the improvements to keep the money."[65]

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[61] Guthrie and Rothstein, 214.

[62] Odden and Picus, 73.

[63] Elwood P. Cubberley, *School Funds and Their Apportionment*, (New York City: Teachers College, Columbia University, 1905): 17.

[64] Clune, "The Shift from Equity to Adequacy," 384.

[65] Ibid, 385.

Guthrie and Rothstein were of the view that "governors and legislatures define 'adequate' by determining how much state revenue is available, or how much additionally they are willing to generate through added taxation."[66] In other words adequacy was a political decision (the politicians decided what was adequate) instead of a decision based on students' needs. "The notion of adequacy is the provision of a set of strategies, programs, curriculum, and instruction, with appropriate adjustments for special-needs students, districts, and schools, and their full financing, that is sufficient to teach students to high standards."[67] "Equality of educational opportunity and educational adequacy are undeniably linked."[68] Equal opportunity must vary depending on an individual's needs.

Other terms used to describe different kinds of adequacy are means-regarding and prospect-regarding.[69] Equal dollars spent per pupil is one example of a means-regarding approach to adequacy. This approach is only looking at what is being put into education and is not evaluating outcomes. "In the prospect-regarding approach to adequacy the emphasis would switch to the level of educational achievement expected of each student before he or she would leave the system."[70] Although this definition of adequacy approaches fairness, it is costly, difficult to carry out, and politically controversial.

"Adequacy at its fullest potential shifts the purpose of equal funding from inputs to outcomes."[71] The implication of shifting from inputs to outcomes goes beyond ensuring equal

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[66] Guthrie and Rothstein, 211.

[67] Odden and Picus, 71-72.

[68] First and DeLuca, 212.

[69] Ibid.

[70] Ibid.

[71] Nakib and Herrington, 361.

funding for school districts. Inputs include the level of educational service such as resources and the performance standards. Outcomes include outputs such as test scores and graduation rates.[72] Outputs can also be the economic return to both the individual and society such as an active, informed citizen. Student outcomes must be equal in order to ensure an adequate education.

According to Picus,

> Designing an adequate school finance system requires three interrelated decisions: identifying an adequate expenditure level for the typical student in the typical district; ensuring that the foundation base has sufficient adjustments for student needs and price differentials; and making sure that the overall system supports teacher salary levels that are sufficient to recruit and retain the level of teacher quality needed to implement standards-based educational strategies in school sites.[73]

To achieve adequacy, "researchers and policy analysts need to explicitly address the link between education inputs, processes, and academic achievement, a linkage virtually ignored in the design of finance systems based on wealth neutrality or equality of funding."[74] "With the exception of California, all states have increased average per-pupil spending in the last quarter century, and most have increased it dramatically."[75] Due to the increased spending, the "national 'adequacy' debate can be seen, in part, as an effort to evaluate whether this spending growth has been sufficient and to ensure that the new money is distributed within states in a fashion that will produce desired outcomes."[76] "The finance reforms of the last three decades, with their (sic) emphasis on the local districts, do not appear to have addressed sufficiently the more fundamental matter of student achievement."[77]

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[72] First and DeLuca, 212.

[73] Lawrence O Picus, "An Evidenced-Based Approach to School Finance Adequacy in Arkansas," (Sept. 2003): 5.

[74] Addonzio, 460.

[75] Guthrie and Rothstein, 211.

[76] Ibid.

[77] Addonizio, 458-459.

Money and Student Achievement

In 1966, James Coleman published the *Equality of Educational Opportunity* survey (referred to as the *Coleman Report*). This publication is identified by Michael Heise[78] as the starting point for the debate about the correlation between money spent and student achievement. "Among the Coleman Report's findings is that schools and their (sic) resources have a relatively negligible effect on student achievement after controlling for various student socioeconomic background variables."[79]

"Over the entire 20th century, (sic) real spending per pupil—that is, spending levels adjusted for general inflation—has grown at more than a 3% per year compound rate."[80] However, adding money does not necessarily produce an adequate education. After examining 187 studies, Hanushek could not find a strong relationship between increased school resources and student achievement.[81] "In other words, there is little reason to be confident that simply adding more resources to schools as currently constituted will yield performance gains among students."[82] The difficulty with adding resources to schools is that "the current organization and incentives of schools do little to ensure that any added resources will be used effectively."[83] In fact, the spending that schools undertake when they have additional funds generally does not go

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[78] Michael Heise, "State Constitutions, School Finance Litigation, and the 'Third Wave:' From Equity To Adequacy," *Temple Law Review* 68 (1995): 1166.

[79] Ibid. See James S. Coleman et al, "Equality of Educational Opportunity," (Washington, U.S. Department of Health, Education, and Welfare, Office of Education, 1966): 21-22.

[80] Hanushek, "A Jaundiced View," 462; Eric A. Hanushek, "The Impact of Differential Expenditures on School Performance," *Educational Researcher* 18, no. 4 (1989).

[81] Eric A. Hanushek, "Assessing the Effects of School Resources on Student Performance: An Update," *Educational Evaluation and Policy Analysis* 19, no. 2 (1997).

[82] Ibid, 148.

[83] Ibid, 156.

toward things that enhance student outcomes."[84] Hedges, Laine, and Greenwald evaluated the same studies Hanushek did, eliminating those studies that had insignificant results and determined "there is evidence of statistically reliable relations between educational resource inputs and school outcomes, and that there is much more evidence of positive relations than of negative relations between resource inputs and outcomes."[85]

Picus argues that "one of the problems with all of these studies is they don't take into consideration the tremendous similarity with which school districts spend the resources available to them."[86] Picus states, "what we don't know is what the impact on student performance would be if schools or school districts were to dramatically change the way they spend the resources available to them."[87] Odden and Picus summarized the resource allocation studies and concluded, "if additional education revenues are spent in the same way as current education revenues, student performance increases are unlikely to emerge."[88]

"Educators, social scientists, and courts have been unable to agree on the correlation between educational expenditures and the quality of education."[89] Wood summarized the research on money and student achievement. "Overall, research on the relationship of moneys expended and student achievement reveals mixed results. The basic research suggests there is a minimal relationship between expenditures and student achievement. However, those moneys

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[84] Hanushek, "A Jaundiced View," 465.

[85] Larry V. Hedges, Richard D. Laine, and Rob Greenwald, "Does Money Matter? A Meta-Analysis of Studies of the Effects of Differential School Inputs on Student Outcomes," *Educational Researcher* 23, no. 3 (1994): 11.

[86] Lawrence O. Picus, "Does Money Matter in Education? A Policymaker's Guide," in *Selected Papers in School Finance 1995*, William J. Fowler, Jr., ed., (Washington, DC: U.S. Department of Education. National Center for Education Statistics, 1997): 31.

[87] Ibid, 31.

[88] Odden and Picus, 281.

[89] Molly S. McUsic, "The Use of Education Clauses in School Finance Reform Litigation," *Harvard Journal on Legislation*, 28 (1991): 316.

spent on direct instructional activities yield the most positive relationship between student outcomes and moneys expended."[90]

Methods to Determine the Cost of an Adequate Education

Even though levels of spending can be determined by state or per pupil, there is limited knowledge to answer the question: "What funding formula will ensure that adequate money is available in each school to meet the state's educational goals for all students?"[91] "The goal of adequacy models is to determine how much money it takes for all students to reach a certain performance level."[92] "Adequacy finance models set the stage for creating a link between funding and the performance of the educational system."[93] Four methods have been developed to examine this link – cost function, successful schools, professional judgment, and evidence-based. "Although student performance can be measured in various ways, most states rely on standardized exams to measure how effectively a school district improves the academic performance of its students."[94]

Statistical Modeling/Cost Function Approach

One approach is statistical modeling which is also referred to as the cost function approach. "Statistical models show unique power for calculating the added costs of dealing with poverty, bilingual populations and other special populations."[95] The cost function "approach begins with the specification of an acceptable level of student performance and then uses

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[90] Wood, 53.

[91] Augenblick, Myers, and Anderson, 74.

[92] Mathis, "Equity and Adequacy," 14.

[93] Conley and Picus, 587.

[94] Imazeki and Reschovsky, 144.

[95] Mathis, "Equity and Adequacy," 13.

multiple regression analysis to estimate the dollar cost of the ingredients (i.e., programs and services) that produced those outcomes."[96] "A cost function relates data on actual spending in a district to student performance, resource prices, student needs, and other relevant characteristics of districts."[97] Reschovsky and Imazeki explain that

> A cost function provides an estimate of the minimum amount of money necessary to achieve various educational performance goals given the characteristics of a school district and its student body, and the prices it must pay for *inputs* used to provide education. Estimating a cost function allows us to quantify the relationship between per pupil spending, student performance, various student characteristics and the economic, educational, and social characteristics of school districts.[98]

Some problems with this approach are that it is complicated and usually looks at one standard for student achievement such as test scores. Also, the approach relies on the existence of educational production function.[99] "The complex statistical analyses required to make these cost function estimates can be difficult for policy makers to understand, which makes policy makers less inclined to accept the expenditure estimates such models generate."[100] Due to the complexity of the cost function model, no state has based their model exclusively on the results of statistical modeling analyses.

A statistical study for New York City found funding for the schools needed to be two to three times what the state average was currently funding.[101] Reschovsky and Imazeki estimated

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[96] Addonzio, 460-461.

[97] William Duncombe, "Estimating the Cost of an Adequate Education in New York," *Center for Policy Research* (Syracuse University, NY, 2002): 5.

[98] Reschovsky and Imazeki, 379.

[99] Addonzio 461.

[100] Conley and Picus, 589.

[101] Guthrie and Rothstein, 227; See William D. Duncombe and John M. Yinger, "Performance Standards and Educational Cost Indexes: You Can't Have One Without the Other," in *Equity and Adequacy in Education Finance,* Helen F Ladd, Rosemary Chalk, and Janet S. Hansen, ed. (Washington, DC: National Academy Press, 1999): 260-297.

cost functions for the states of Texas (for plaintiffs) and Wisconsin.[102] Due to the enormity of the numbers and the variations found when using statistical analysis, Guthrie and Rothstein deduce legislatures will decide not to appropriate additional funds for schools.

"Statistical models run cost functions to determine how much money it takes to achieve a certain average test score under certain school and demographic circumstances. As these circumstances change from one community to another, the formula adapts the costs accordingly."[103] "It is particularly important in estimating cost models to adequately control for efficiency differences across districts, because the cost function results can be sensitive to what efficiency factors are included."[104] "A district is said to be inefficient if it spends more on education than other districts with the same performance and the same educational costs."[105] Statistical models have shown that varying amounts of funds should be appropriated to different districts depending on the populations they serve which are beneficial for rural schools. This has been a difficult concept for legislators to accept.

Empirical Observation Approach/Successful Schools/District Model

A second approach is empirical observation. This approach "determines a level of acceptable pupil performance or proficiency specified as adequate, and then identifies school districts or schools which achieve the desired goals."[106] After identifying the districts that are adequate, this approach determines how much these districts are spending. This method entails

[102] Reschovsky and Imazeki, 2001.

[103] Mathis, "Equity and Adequacy," 12.

[104] Duncombe, "Estimating the Cost of an Adequate Education in New York. Working Paper no. 44," (Feb. 2002): 9.

[105] Duncombe and Yinger, 275.

[106] Guthrie and Rothstein, 224.

eliminating outlier districts such as small rural or large city districts[107] which may have "particularly high per pupil property values or income."[108] Although this method removes the outlier districts, it still may lead to overfunding because it may include districts that are producing adequate results inefficiently.[109] This approach can adjust for differences in higher needs districts or students[110] and can take into account more than one measure of student achievement. However, it does not control for the differences in students' socioeconomic backgrounds.[111]

> Although this model has been used to estimate adequacy levels in a number of states, some argue that it is subject to considerable manipulation by policy makers. The types of adjustments needed for varying pupil and district characteristics are one potential source of bias that could result in underfunding or overfunding different types of districts. As conceived, the model calls for using the weighted average of all the expenditures of the districts meeting the performance benchmark to determine the adequacy level. Some policy makers, however, have suggested using the average of only the bottom half of that sample, using an unweighted average, or even using the value of just the lowest expenditure district in the sample—strategies that drive down the costs of adequacy but may obscure the true costs of providing an adequate education statewide.[112]

"Neither this approach nor the cost function approach indicates how funds distributed to school districts would be used at the school level."[113] Although this statement is true, researchers do not explain how any models meet this concern. Also, this approach assumes that differences in funding correlate to variations in performance. In a state like Florida where district expenditures are similar this technique could not be useful.

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[107] Conley and Picus.

[108] Duncombe, "Estimating the Cost of an Adequate Education in New York," 9.

[109] Guthrie and Rothstein, 224.

[110] Duncombe, "Estimating the Cost of an Adequate Education in New York," 9.

[111] Addonzio, 461.

[112] Conley and Picus, 589-590.

[113] Ibid, 590.

The empirical observation approach is currently referred to as the successful schools/district model. For the successful school district approach, researchers or policymakers identify districts that have met state performance standards based on state tests. "Spending levels in those districts are used to calculate a base cost for adequate spending per pupil-the costs of serving a student with no special needs. Adjustments for student and district characteristics are then made."[114] When states have defined objectives and benchmarks and "districts can be identified that meet them on the basis of acceptable criteria,"[115] the successful school district approach is most useful.

Professional Judgment Approach

Professional judgment is a third approach. This method asks professional educators what resources are needed for an adequate education. This method has also been referred to as the expert design approach and has been called the resource cost model (RCM). Under the professional judgment approach, the state convenes teams of education experts who independently identify the educational resources needed to create schools in which educators have confidence that most of the students in the school will be able to meet the state-established performance goals.[116] A variation that has been used for the professional judgment approach is to survey principals on different parameters to determine adequate inputs. Survey results are then shared with the professional judgment panels. Then the cost of the resources is configured

[114] Lawrence O. Picus and Leslie Blair, "School Finance Adequacy: The State Role," *Insights on Education Policy, Practice, and Research, no. 16* (March 2004): 4.

[115] Augenblick, Palaich and Associates, Inc., "Calculation of the Cost of an Adequate Education in Tennessee in 2001-02 using the Professional Judgment Approach and the Successful School District Approach," (December 2003): II-4.

[116] Conley and Picus, 591.

to ascertain the adequate cost for a school. "These figures are adjusted on the basis of student and district characteristics as well as educational price differences."[117]

A statewide testing system is not necessary for the professional judgment approach. Therefore, when professional judgment panels convene to identify resources needed, no achievement data from the state are utilized. If achievement data were used, then more valid observations could be made. Using this approach may be difficult because it may be hard for educators to come to a consensus. Also, "much less attention is paid under the RCM approach to additional resources required to address different student needs."[118] Additionally, this approach assumes "there is one best way to deliver a service and increases the likelihood that the legislature will be interested in closely examining how districts actually spend state funds."[119] "There is no objective method of indicating what resources are required for an 'adequate' level of student performance."[120] Although adjustments can be made for cost of living differences across districts, the professional judgment model "assumes that conditions, environment, and circumstances in the prototype district linearly generalize to all rural districts or schools."[121] Creating a prototype rural school would better reflect what rural districts need.

Many researchers that use the professional judgment approach acknowledge that one prototype school for an entire state is unrealistic and therefore create several professional judgment panels. An example of the prototype schools created might be elementary, middle, and high school divided into sizes - small, moderate, large, and very large. In their Kansas adequacy

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[117] Ibid.

[118] Duncombe, "Estimating the Cost of an Adequate Education in New York," 9.

[119] Augenblick, Myers, and Anderson, 75.

[120] Hanushek, "The Impact of Differential Expenditures," 154.

[121] Mathis, "Equity and Adequacy," 11.

study, Augenblick and Myers describe many shortcomings of the professional judgment approach.

> The professional judgment approach assumes that people can be reasonably precise in specifying the resources schools need if they are expected to meet a particular set of objectives, however our experience contradicts that assumption. If for example, the expectations were to change slightly, people would have a difficult time modifying their resource recommendations accordingly. Also, our experience suggests that people tend to overestimate the resources schools need. In part, this is because people believe schools should meet broader objectives than those defined by state accountability systems and, in part, it is because panel participants tend to avoid being Machiavellian (that is, they want to serve the needs of all students even when doing so is not necessary to meet state objectives). Therefore, the professional judgment approach may yield a figure that is somewhat higher than what is necessary, which reflects the fact that people have identified more resources than are actually required for schools with particular characteristics to fulfill the objectives specified. The only way to improve the precision of the estimates would be to run a series of experiments under which schools with exactly those characteristics are given different levels of resources and evaluated in regard to how well they accomplish the objectives controlling for a wide variety of other factors that might influence the outcome such as the quality of personnel or leadership.[122]

Whole-School Design/Evidence-Based Approach

A whole-school design is a fourth approach. This method identifies a program or design that produces high student achievement for all students and "each district or school would then be allocated sufficient funds to implement the design."[123] This model takes research findings that describe a high-performance school or a comprehensive school design, identifies all the elements needed to implement the design's educational strategies, calculates a cost for each of those elements, and then uses that figure to determine an adequate spending base for each school.[124]

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[122] John Augenblick, John Myers, Justin Silverstein, and Anne Barkis, "Calculation of the Cost of a Suitable Education in Kansas in 2000-2001 using Two Different Analytical Approaches," (May 2002): VI-1-2

[123] Addonzio, 462

[124] Conley and Picus, 590. Examples of some comprehensive school programs included *The Comer School Development Program* by Dr. James Comer, *the Core Knowledge Reform Program*, *The Coalition of Essential Schools Model*, and *Success for All*.

A "significant funding source for Comprehensive School Reform programs has been Title I of the Elementary and Secondary Education Act of 1965."[125] In 2002, the U.S. Department of Education identified eleven components of a comprehensive reform program:

> (1) employs proven strategies and proven methods for student learning, teaching, and school management that are based on scientifically based research and effective practices and have been replicated successfully in schools;
>
> (2) integrates a comprehensive design for effective school functioning, including instruction, assessment, classroom management, professional development, parental involvement, and school management, that aligns the school's curriculum, technology, and professional development into a comprehensive school reform plan for schoolwide change designed to enable all students to meet challenging State content and student academic achievement standards and addresses needs identified through a school needs assessment;
>
> (3) provides high quality and continuous teacher and staff professional development;
>
> (4) includes measurable goals for student academic achievement and bench-marks for meeting such goals;
>
> (5) is supported by teachers, principals, administrators, school personnel staff, and other professional staff;
>
> (6) provides support for teachers, principals, administrators, and other school staff;
>
> (7) provides for the meaningful involvement of parents and the local community in planning, implementing, and evaluating school improvement activities consistent with section 1118;
>
> (8) uses high quality external technical support and assistance from an entity that has experience and expertise in schoolwide reform and improvement, which may include an institution of higher education;
>
> (9) includes a plan for the annual evaluation of the implementation of school reforms and the student results achieved;
>
> (10) identifies other resources, including Federal, State, local, and private resources, that shall be used to coordinate services that will support and sustain the comprehensive school reform effort; and

[125] Geoffrey D. Borman, Gina M. Hewes, Laura T. Overman, and Shelly Brown, "Comprehensive School Reform Achievement: A Meta-Analysis," *Review of Educational Research* 73, no. 2 (2003): 127.

> (11)(A) has been found, through scientifically based research to significantly improve the academic achievement of students participating in such program as compared to students in schools who have not participated in such program; or
>
> (B) has been found to have strong evidence that such program will significantly improve the academic achievement of participating children.[126]

An advantage of the whole school design approach is that it uses research and links strategies to student performance. "The major shortcoming in applying this model to rural schools is that high performing schools typically come from suburban communities with well-educated parents and very different demographics."[127]

The whole-school design method is currently referred to as the evidence-based approach. "As used today, the evidence-based approach relies on current educational research to identify the resources needed for a prototypical school to meet a state's student performance benchmarks."[128] Then "the costs of the prototypical school designs are estimated and applied to the actual schools in that state."[129] Adjustments are also made for special groups of students such as limited English, low income, and special education.

Mathis opines "regardless of the method used, recent adequacy work demonstrates that categorical weights for poverty, at-risk, and non-English language learners are very much below what is needed if we are serious about all students performing up to standard."[130] Augenblick and Myers sum up some of the issues experts have about the four adequacy approaches.

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[126] Elementary and Secondary Education Act, 20 U.S.C. § 6516.

[127] Mathis, "Equity and Adequacy," 12.

[128] Lawrence O. Picus and Leslie Blair, "School Finance Adequacy: The State Role," *Insights on Educational Policy, Practice, and Research*, no. 16 (2004): 4-5.

[129] Ibid, 5.

[130] Mathis, "Equity and Adequacy," 14; See John Augenblick and John Myers, "Calculation of the Cost of an Adequate Education in Maryland in 1999-2000 Using Two Different Analytic Approaches," Contracted study for the Maryland Commission on Education Finance, Equity, and Excellence, 2001; John Augenblick, John Myers, Justin Silverstein, and Anne Barkis, "Calculation of the Cost of a Suitable Education in Kansas in 2000-2001 Using

> None of these approaches are immune from manipulation; that is, each is subject to tinkering on the part of users that might change results. In addition, it is not known at this point whether they would produce similar results if used under the same circumstances (in the same state, at the same time, with similar data). In fact, there is some speculation that the successful school district approach and the comprehensive school reform approach produce lower costs than the professional judgement (sic) approach or the statistical approach. Regardless of these shortcomings, each approach represents an attempt to rationally determine the parameters that drive the allocation of state aid, and the use of any of the approaches raises the level of discussion about school finance adequacy.[131]

States and Adequacy

Duncombe asserts that states should use a performance foundation formula where the state first identifies a minimum level of student achievement and then calculates what it would cost to reach this standard because "a traditional foundation formula will generally not be successful in raising student performance in all districts up to an adequate level unless the minimum spending level is set very high or the adequacy standard is set very low."[132] When creating the standards, states need to realize that "costs increase exponentially as outcome standards increase."[133]

Michael Addonzio chose to examine Michigan's urban school districts using the exemplary district approach. He was not commissioned by the Michigan Legislature to conduct his study. He chose the urban schools in Michigan due to the percentage of those students who performed poorly on the statewide test. He identified an urban district that had been able to raise student achievement. Then he utilized a formula that he created to reach "a rough estimate of the

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Two Different Analytic Approaches," Contracted by the Kansas Legislative Coordinating Council, 2002; John Myers and Justin Silverstein, "Calculation of the Cost of a Suitable Education in Montana in 2001-2002 Using the Professional Judgment Approach," Contracted by the Montana School Board Association, 2002. (This study is an advocacy piece.)

[131] John Augenblick and John Myers, "Calculation of the Cost of an Adequate Education in Colorado using the Professional Judgment and the Successful School District Approaches," Jan. 2003, p. II-5.

[132] Duncombe, "Estimating the Cost of an Adequate Education in New York," 9.

[133] Baker, "The Emerging Shape," 277.

added cost of raising all of the urban districts to the achievement levels demonstrated by an exemplary or target district."[134] With Addonzio's "formula, each district would be guaranteed per pupil revenue to that of the exemplary district, adjusted for a simple proxy of educational need, the proportion of children from low-income households, and for the cost of educational resources."[135]

What Addonzio found was that choosing the target district can greatly impact the cost of an adequate education. He selected two different urban benchmark districts to show the difference in cost per district when an efficient district is used as the benchmark district compared to an inefficient district. The difference in cost was $23.8 million. Addonzio concluded that "educational adequacy, even when loosely defined as providing an opportunity for all children to learn at high levels of achievement, remains elusive in Michigan."[136]

State Adequacy Studies

"There is not and probably will never be a single standard that applies across states as the absolute cost of an adequate education,"[137] but different methods/formulas have been used in some states and by various researchers to try and compute the cost of an adequate education. There are many adequacy studies that have been conducted over the past ten years. "In some states this work has been sponsored by state legislatures while in others it has been undertaken by Governors, state education agencies, or coalitions of educators. In some cases, cost analysis is required as a result of litigation."[138]

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[134] Addonzio, 476.

[135] Ibid, 477.

[136] Ibid, 483.

[137] Baker, "The Emerging Shape," 259.

[138] John Augenblick, Robert Palaich, et al., "Calculation of the Cost of an Adequate Education in North Dakota in 2002-2003 using the Professional Judgement (sic) Approach," I-2.

Many advocacy groups are funding adequacy studies and presenting the organizations as education interest groups. In reality, no organization is a public interest group. Hanushek explains that most adequacy studies are "contracted for by parties interested in increasing spending for education (including teachers unions, state departments of education, and litigants), although they sometimes involve defensive reactions of parties trying to neutralize a rival costing out study that calls for large increases in spending."[139]

Many of the advocacy groups used the different methods discussed in the previous section to determine what an adequate education would cost. About half of the adequacy studies conducted were commissioned by a state legislature. Augenblick and Associates have conducted many adequacy studies of which more than half of these studies were not commissioned by state legislatures. No studies of Augenblick's have been published and are highly proprietary. The literature exists as found in these studies but doesn't exist in a scholarly manner and as a result these independent studies cannot be judged. There is some validity to Augenblick's studies but there are many weaknesses of his professional judgment studies. After reviewing all of Augenblick's professional judgment studies it becomes apparent that there is not one set protocol utilized.

For example, the number of prototype schools Augenblick creates varies from three to six. In most of his studies, he does not adjust for urban or rural schools but in his Connecticut study he does give a weight for urban schools. Adjusting for children in poverty is something he does in most of his studies but he does it differently for each study. For instance, in Connecticut he used percentages for the different sized districts and for other states he used actual

[139] Eric A. Hanushek, "Science Violated: Spending Projections and the 'Costing Out' of an Adequate Education," in *Courting Failure: How School Finance Lawsuits Exploit Judges' Good Intentions and Harm Our Children*, Eric A. Hanushek, ed. (Stanford: Education Next Books, 2006): 258.

percentages from the districts. Augenblick recommended adjusting for cost of living in some of his studies but most of his studies he did not approach the topic or he suggested the legislature assign a committee to determine the adjustment.

When Augenblick completes a study with different adequacy methods, the professional judgment approach consistently produces the highest projected expenditures. This is mainly due to the design of his studies which gathers teachers together in a room to discuss what resources are needed for students to achieve certain state standards. Also, simply increasing funding for schools does not guarantee higher achievement because there is not a linear relationship. In sum, there are huge limitations to Augenblick's studies.

In their adequacy report for the state of California, American Institutes for Research (AIR) proposed a list of standards to evaluate any professional judgment study.

1. *Transparency* - Transparency is the primary advantage attributed to the professional judgment method for estimating adequacy. Therefore, the entire process conducted should be explicit so that policy makers and others can consider the validity of each aspect of their recommendations as well as the overall quality of its outcomes.

2. *Qualifications of Participants* - Participants should be professional educators recognized as highly competent who are experienced in allocating resources and producing high-quality student outcomes.

3. *Potential Conflict of Interest* - To the extent possible, participants should be free of conflicts of interest. To the extent that they have potential conflicts, these should be made explicit.

4. *Reliability* - Multiple groups of similar expert educators should complete identical exercises to enhance the reliability of the process.

5. *Records for Replicability* - Sufficient records of the process should be reported to allow others to replicate it.

6. *Pricing* - Prices used to estimate resource costs (e.g., teachers' salaries) should be based on prevailing market prices or result from rigorous economic analysis.[140]

[140] Jay Chambers, Jesse Levin, and Danielle DeLancey, "Efficiency and Adequacy in California School Finance: A Professional Judgment Approach," (Dec. 2006): 13.

Table 2-1 outlines the state adequacy studies conducted, the year the study was completed, the primary researchers of the study, who funded each study, and if the funding received was from an advocacy group. This table is located at the end of chapter 2. After reviewing the table, the conclusion can be made that many adequacy studies are conducted for advocacy organizations that have their own political agendas. It is rare to find these studies in peer-reviewed literature. Education finance policy in the United States is highly influenced by a model that has yet to withstand peer review and is not fully developed. Some of the researchers in the later adequacy studies conducted have advanced their methodology to create more reliable and valid results. For example, using multiple methodologies for one study,[141] conducting surveys prior to the study and having multiple groups work independently.[142] However, many researchers continued to complete their studies similar to the way they had conducted them in earlier studies.[143]

Summaries of State Adequacy Studies

Massachusetts (July 1991)

The Massachusetts Business Alliance for Education (MBAE) was created in 1988 by a group of business activists who were concerned about the education being provided in the Massachusetts public schools. In 1991, the MBAE released a report that called for many changes to the public school education and financing system. The purpose of the "report was to place before the public and other interested parties the agenda for systemic reform distilled by

[141] R.C. Wood & Associates, "State of Rhode Island Education Adequacy Study," (March 2007).

[142] American Institutes for Research (AIR), "An Independent Comprehensive Study of the New Mexico Public School Funding Formula, Volume I – Final Report," (Jan. 2008).

[143] See John Augenblick, Amanda Brown, Dale DeCesare, John Myers, and Justin Silverstein, "Estimating the Cost of an Adequate Education in South Dakota," (January 2006).

MBAE from over two years of investigation and assessment."[144] Some of the main recommendations in the report included reforming the education finance system, creating outcome oriented goals developed by the state, designing performance measures for schools with rewards and sanctions for meeting/not meeting the goals, providing preschool education for all three- and four-year olds, establishing a parent outreach program, extending school time, allowing school based management, improving the teacher workforce, establishing a Commission on Regulatory Relief in Education, and restructuring the State Department of Education. In order to meet the demands of their main recommendations MBAE sought to answer two questions: "How much should be spent to assure an adequate, quality education? Then: How should these expenditures be financed?"[145]

To answer the above questions, the MBAE committee held discussions with school superintendents and created the foundation budget after independently reviewing the superintendents' recommendations. The committee's suggested staffing included: an average class size for elementary school at twenty-two students, for bilingual students the average class size would be fifteen, for middle school staffing, 100 students would be clustered for four teachers, and for high school an average class size would be eighteen. "The foundation budget is built on the assumption that the number of children assigned to special education programs (on a full-time equivalent, or FTE, basis) would equal 3.5 percent of the student body."[146]

After the staffing recommendations, the committee outlined how they configured teacher salaries for the foundation budget. The foundation budget uses a standard teacher salary of $37,000 and then applies a wage adjustment factor to configure teacher salaries for each district.

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[144] Massachusetts Business Alliance for Education, "Every Child a Winner," (July, 1991): 3.

[145] Ibid, 36.

[146] Ibid, D-5.

The estimated per pupil cost was estimated at $4,950 (in 1991 dollars). Included in this estimate are teacher salaries, other salaries, utilities, supplies, maintenance, and insurance. The committee estimated all expenditures for the foundation budget excluding lunch programs and transportation. MBAE estimated that an additional $720 million would be needed to meet the foundation level funding they recommend. They envisioned "roughly half of the new money will come from increased property taxes and half from increased state aid payments"[147] which would be phased in over a five year period.

Other recommendations included three additional staffing positions be allocated per 100 low income students, funding half-day preschool and full day kindergarten for all low income children, as well as a parent outreach program for low-income parents of one and two year olds, adding extra hours to the school day for all low income children, and extra pay for teaching in inner city schools. "These program enhancements bring average per-pupil expenditure statewide to $5,600."[148]

The committee found "on a statewide basis, the foundation and actual expenditures were almost identical. Of course, the similarity between actual and foundation expenditures statewide masks major differences between communities, some of which spend more than the foundation and some less."[149] Several charts were included in the MBAE report to compare the actual spending in specific areas to the recommended foundation spending.

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[147] Ibid, D-3.

[148] Ibid, D-18.

[149] Ibid, D-10.

Wyoming (May 1997)

The Wyoming Legislature needed to create a new school finance system as per the ruling in *Campbell County School District v. State of Wyoming.*[150] Therefore, the Legislature contracted with Management Analysis and Planning Associates (MAP) to conduct an adequacy study. To construct the Cost Based Block Grant Model, MAP reviewed the educational literature specifically focusing on areas that have finance implications such as school and class size, teacher experience and training, and using technology. Then MAP convened Wyoming education experts and asked them to answer the following question: "What in your judgment are key components required to provide effective instruction, to enable students to acquire the prerequisites to enter the University of Wyoming, or to have access to other attractive post-secondary endeavors?"[151] MAP also gathered information by using the following strategies: consulting with National Professional Associations, compiling and synthesizing best practices from other states, visiting a representative sample of Wyoming school districts, collecting education data from Wyoming districts, and consulting with Wyoming state officials and other experts.

In order to estimate the costs of the model, MAP used the component market comparison strategy which "relies upon current school district spending figures and, where appropriate, infers real costs."[152] To estimate teacher salaries,

> MAP used the statewide mean entry salary on which to build a base teacher salary, rather than the entry salary in the most competitive district(s) because it is easier to explain the statewide mean entry salary. However, MAP then compared the statewide mean teacher entry salary to the entry-level teacher salary in Wyoming's most labor market competitive

[150] 907 P.2d 1238 (Wyo. 1995).

[151] Management Analysis & Planning Associates, "A Proposed Costs Based Block Grant Model for Wyoming School Finance," (April 1997): 23.

[152] Ibid, 37.

> district(s)… MAP then increased the above-described base entry salary by folding in academic credits and establishing a seniority step schedule. The dollars used for credits and seniority steps were both established by calculating current actual expenditures.[153]

Capital costs and sources of revenue and taxation were not included in the Cost Based Block Grant Model. The researchers chose to use the average daily membership (ADM) as the main source of distribution and created three prototypical schools – an elementary, middle, and high school.

MAP identified five major component categories for the model - personnel, supplies, materials, and equipment, special services, special student characteristics, and special school, district, and regional conditions. "Each prototypical school model is supplied with categories of services and goods deemed by Wyoming experts, research findings, professional standards, and conventional practice to be crucial for the conduct of instruction."[154] For each category, MAP explained how the cost estimates were computed. For special education students, the Wyoming Legislature currently reimburses 85 percent of actual costs. MAP recommended keeping that procedure for one to two years while at the same "time, the state should implement procedures that allow tracking special education specific costs to each handicapping condition. When these data were available, MAP recommended adoption of a modified, census-based formula."[155] For limited English proficient students, MAP recommended that the "program be funded at 1.15 times the number of identified limited-English-proficient students."[156] For the economically disadvantaged student, "MAP recommend[ed] that the state provide additional support for school districts where the number of students who qualify for the federal free lunch program exceeds

[153] Ibid, 38.

[154] Ibid, 42.

[155] Ibid, 51.

[156] Ibid, 52.

150 percent of the state average. The model assumes an expenditure of $500 per identified student."[157]

MAP created a definition for small schools and provided a formula for distributing additional dollars to these schools. MAP also proposed "that all of a school district's eligible personnel costs be multiplied by a regional cost-of-living index."[158] Since the Wyoming Department of Administration and Information already collects and publishes "a semi-annual index of consumer prices for each county of the state,"[159] MAP recommended using this information for the cost-of-living index but suggested excluding the housing and medical components.

MAP did not recommend providing districts with the increased funds in one year. Instead, MAP recommended increasing the total revenue 10-15 percent each year until districts received the additional, per pupil block grant amount. Using the three prototype school models, MAP estimated that the cost per pupil for elementary school was $6,165, for middle school was $6,403, and for high school it was $6,781. In comparison, per pupil spending in 1996-97 was $5,971. The researchers explained that the purpose of their study was to design a method to calculate total education costs for the Wyoming Legislature and therefore the researchers did not provide a total cost for education. They emphasized that they were not recommending an ideal finance formula for the Legislature but instead were providing a model.

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[157] Ibid.

[158] Ibid, 55.

[159] Ibid, 56.

Wyoming's Adequacy Study and the Courts

In 1995, the Supreme Court found Wyoming's education funding system to be inadequate and unconstitutional in *Campbell County School District v. State of Wyoming.*[160] The Supreme Court mandated that a new system of school finance be developed and should be enacted by July 1, 1997. After this ruling, the state contracted with Management Analysis and Planning, Inc. (MAP) to conduct the above-mentioned adequacy study. The findings from the study were used to construct a new education funding system.

This system was challenged in court in *State v. Campbell County School District.*[161] The Supreme Court found the new funding system was capable of meeting the constitutional requirements but required some modifications to the system. The court did find the funding of facilities deficient and required the Legislature to modify this deficiency.

Maine (January 1999)

In 1997, the Maine State Legislature requested the State Board of Education create a committee to conduct an adequacy report. The committee was named the State Board of Education Essential Programs and Services Committee and was asked to identify the resources necessary for all students to achieve Maine's *Learning Results* standards, estimate the cost of the resources, create a procedure to hold schools accountable, and develop a transition plan to implement the committee's recommendations. There were seventeen people who served on the committee. "The committee used four key sources of information and data to inform it in defining and developing the essential programs and services model for Maine."[162] The four key

[160] 907 P.2d 1238 (Wyo. 1995).

[161] 32 P.3d 325 (Wyo. 2001).

[162] Maine Education Policy Research Institute, "Essential Programs and Services: Equity and Adequacy in Funding to Improve Learning for All Children," (Jan. 1999): 8.

sources were empirical information on Maine schools, evidence from existing or proposed models, literature on school resources and performance, and expert testimony.

The committee created definitions for Essential Programs and Essential Services.

> Essential Programs are those programs and courses Maine schools need to offer **all** students so that they may meet the *Learning Results* standards in the eight *Learning Results* program areas of:
> a. Career Preparation
> b. English Language Arts
> c. Health & Physical Education
> d. Mathematics
> e. Modern and Classical Languages
> f. Science and Technology
> g. Social Studies
> h. Visual and Performing Arts
> Essential Services are those resources and services required to insure that each Maine student is offered an equitable opportunity to achieve the *Learning Results* standards contained in the eight essential programs.[163]

After creating the definition, the committee created three prototype schools, an elementary (K-5) school, a middle (6-8) school, and a secondary (9-12) school. Then the committee identified resources for the prototype schools and the costs of the resources. Main areas included FTE personnel (ratio), supplies and equipment, specialized student populations, specialized services, district services, and special adjustments.

The basic foundation per pupil was computed to be $4,407 for K-5, $4,543 for 6-8, and $5,081 for 9-12. Weights for special student populations were also configured: special education students - 2.1 weighting, English Language Learners (ELL) - 1.15 weighting (which would later increase to between 1.3 and 1.6), disadvantaged youth (free and reduced-priced lunch recipients) - 1.02 weighting (which would later increase to 1.15), and K-2 students - 1.1 weighting. "A pro forma estimate of the total funds needed to implement the recommendations indicated that an additional $131.5 million over the $1.2 billion spent in 1996-97 would be needed. This is an

[163] Ibid, 10.

increase of only a little over 10 percent."[164] The committee recognized that such an increase at one time is not feasible and therefore suggested different transitioning programs to implement the increase over time.

Oregon (April 1999)

> The Legislative Council on *The Oregon Quality Education Model* was appointed in 1997 by the Speaker of the Oregon House of Representatives, Lynn R. Lundquist, and charged with developing *The Oregon Quality Education Model*. This model identifies the fundamental requirements and costs for a quality education designed to meet the high academic standards established in Oregon by the Education Reform Act.[165]

The Council identified the following as key components of a quality education: The 1991 Oregon Education Act which includes academic content, performance standards, and assessment of student achievement, the seven developmental goals identified by the Oregon Board of Education, class size, professional development, duration of instruction, and operational support.

The Legislative Council was comprised of five legislators and eighteen citizens, which consisted of business leaders, educators, lawmakers, and parents. The question the Legislative Council sought to answer was "What is a quality education for Oregon's students and how much does it cost?"[166] The council had different work groups researching class size, professional development for teachers and administrators, duration of instruction time, and operational support for over a year to determine the appropriate recommendations for these areas. Five separate work groups were appointed to research and make recommendations for the following areas: special education, education service districts, local versus state-wide collective bargaining, regional cost of living differential, and implementation of the model.

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[164] Ibid, 3.

[165] "The Oregon Quality Education Model: Relating Funding and Performance," Legislative Council on the Oregon Quality Education Model, Oregon Legislative Assembly, (June 1999): i.

[166] Ibid, 25.

The approach used to determine the cost of an adequate education was a modified professional judgment approach. The researchers referred to the method as the prototype schools method. Prototype schools (elementary, middle, and high school) were created to determine the cost of an adequate education. "The program elements and components were identified by subcommittees during an exhaustive eighteen-month process and were included based on their importance to the school's overall instructional program."[167] In order to determine the costs for the elements and components, the following five sources were used:

1) Statewide Database Initiative Project results from pilot schools

2) Research on effective educational practices

3) Data from the Oregon Department of Education

4) Data from Oregon education professional associations (e.g., Confederation of Oregon School Administrators, Oregon School Employees Association, Oregon Education Association)

5) Experts from Oregon school districts and schools. These sources were used in developing certain assumptions about Prototype Schools and how they should best be organized and funded.[168]

The model created by the Council did not include a compensating factor for poverty or capital costs that would be incurred if the model is fully implemented. "The goal for the Prototype Schools is that 90 percent of students in those schools achieve the state-mandated standards, with the remaining 10 percent making significant progress to be as near to reaching the standards as possible."[169] The Council discussed what full implementation of the model would look like but also provided a phased-in implementation plan for the model acknowledging the difficulty of full implementation in one year as well as provide a cost estimate for full and

[167] Ibid, 35.

[168] Ibid.

[169] Ibid, 42.

phased-in implementation. For the full implementation plan an additional $572,364,383 would be needed for the 1999-2000 school year. For the phased-in implementation plan $203,172,397 above the governor's proposed 1999-2000 budget would be needed.

Oregon (January 2000)

> In October of 1999 Governor John Kitzhaber and Superintendent of Public Instruction Stan Bunn jointly appointed the Quality Education Commission to continue the development and refinement of the Quality Education Model. The charge to the Commission was to validate and refine the Model based on input from educators, business leaders, education policy experts, the public, and others, and to make recommendations regarding model development based on research, data, public input, and experience. This report is the culmination of the past year's work by the Quality Education Commission.[170]

Three prototype schools (elementary, middle, and high school) were created to determine funding similar to the method used when the Quality Education Model was originally created. "The prototype school approach assumes the schools are operating with fairly high efficiency and are using research-based best practices."[171] Some minor revisions were made to the original model which include estimating substitute teacher costs to the prototype schools, increasing spending for maintenance, technology, instructional materials, programs for ESL students, changing the number of teacher professional development days from ten to seven, and adding four training days for principals. Charts are provided outlining the schools' components that compares the prototype schools with full implementation to a baseline (current) school.

> The Commission used an extensive, broad-based review process to examine the Quality Education Model. They received advice from national consultants in school finance and education policy; a special legislative committee; a survey of public opinion; and four expert panels that included business and industry leaders, teachers, principals, superintendents, parents, economists, education policy experts, school business managers, school board members, certified public accountants, and representatives of education associations. The panels were separated into the following issue areas:

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[170] Oregon Quality Education Commission, "Oregon Quality Education Model-2000," (January 2000): 1.

[171] Ibid, 35.

• **Perception & Communications** (what the public believes and wants)
• **Content & Goals** (what research says matters most)
• **Practice & Delivery** (what practitioners say works)
• **Resources & Costs** (what finance people say is a reasonable cost)
The panels and consultants studied the original Quality Education Model for alignment with research-based, best practices and with public values regarding Oregon's education system.[172]

In May 2000, the Commission contracted with Nelson to conduct a poll of Oregon citizens. The purpose of the poll was to determine how Oregonians felt about the education system (positive/negative), what items were considered priority for the system, and if they would be willing to fund the additional measures. After researching the literature on resources and achievement, the Commission decided not to prescribe a certain way to use resources but to leave that decision-making to local districts. However, the Commission did recommend certain tangible elements and components such as reducing class size, increasing professional development funds, and providing extra time for instruction for those students who are behind.

The Commission also recommended certain intangible factors that they refer to as quality indicators. The quality indicators that they identified as significant were teacher quality, teachers who demonstrated they knew how to use effective instructional programs and methods, leadership that facilitated student learning, parent and community involvement, students ready to learn the appropriate curriculum at each grade level, teacher efficacy, professional development program for teachers that focused on improving student learning, safe and orderly learning environment, using school based data analysis to plan instruction, student connectedness, organizational adaptability, and policies of the school district that supported high expectations. The Commission presented evidence of why each intangible factor was important and gave each factor a rating of high or moderate as to the impact it would have on student learning.

[172] Ibid, 11.

Charts were provided that compare the baseline (current) school funding to the fully implemented prototype schools. More resources for ESL students were added to the original model. For each prototype a cost per student and a cost per weighted average daily membership (ADMw) are configured. For the elementary school prototype, the total cost per student was $6,472 and the total cost per ADMw was $5,448. For middle school the cost per student was $6,538 and the total cost per ADMw was $5,442 and for high school the cost was $6,650 and the total cost per ADMw was $5,615. In summary, the Commission found "the State School Fund resources required to implement the Commission's Phase-in Recommendation in the 2001-03 biennium are $250 million above the amount needed to maintain the same level of services provided in 1999-01, but $722 million below the level needed to fully implement the Quality Education Model."[173]

Illinois (June 2001)

In June 2001, Augenblick and Myers, Inc. (A&M) prepared an adequacy report "for the Illinois Education Funding Advisory Board (EFAB) under contract with the Illinois Department of Revenue."[174] The purpose of the study was to estimate a base cost that could be used in Illinois' state aid formula as well as determine what adjustments were needed in the formula for at-risk students. The successful school (district) approach was used for the study because EFAB preferred this method. There were two other groups involved in the adequacy study. "The Education Commission of the States (ECS) provided assistance in determining an adjustment for at-risk students. ECS helped to identify how a set of states identified as being similar to Illinois

[173] Ibid, 58.

[174] John Augenblick and John Myers, "A Procedure for Calculating a Base Cost Figure and an Adjustment for At-Risk Pupils that Could be Used in the Illinois School Finance System," (June 2001): 1.

are approaching the issue of providing support to at-risk pupils."[175] A second group, Fox River Learning, Inc. (FRL) examined the validity of the tuition charge amount. A&M "asked FRL to obtain data from a number of school districts and to evaluate whether the tuition charge truly reflected school district spending for pupils without special needs."[176]

To select successful school districts, scores from the Illinois Standards Achievement Test (ISAT) of reading, writing, and math for grades third, fifth, and eighth were used. Also, for a district to be considered successful, at least 80 percent of the students in the district needed to have taken the test. Test results were used for either a one or two year period. A&M used regression analysis to determine which districts were spending efficiently and inefficient districts were not used. The base cost for elementary and K-12 school districts was configured to be $4,600. The main estimate for the high school districts was calculated at $7,700.

A&M used the Geographic Cost of Education Index (GCEI) that was configured by the National Center for Education Statistics (NCES). "This index builds on work done to adjust for the differences in the hiring of teachers between districts and tries to take into account the other costs that can make supplying education in one district more expensive than in another even when the same resources are being used."[177]

"Illinois uses a multi-level factor to provide additional funding for low income pupils. The factor provides different levels of support depending on the concentration of low income pupils (provided that the concentration exceeds 20 percent) as determined using 1990 Census figures."[178] To determine how to fund at-risk pupils adequately in Illinois, A&M identified

[175] Ibid., 4.

[176] Ibid.

[177] Ibid, 13.

[178] Ibid, 17.

fourteen states that were considered similar to Illinois and evaluated how those states fund at-risk pupils. Then A&M describe the various programs the states have used to provide services to the at-risk population and outlined the costs of the programs. After analyzing the different ways at-risk pupils were funded, A&M concluded that "the free/reduced price lunch count is the best proxy measure since it is based on data that is collected annually and it is not self-reported."[179] Depending on the percentage of at-risk students in a school determined how much A&M recommended for spending. If 10 percent of the student population in a school was at-risk, then A&M estimated an additional cost of $1,697 per at-risk student. If 70 percent of the population was at-risk, A&M recommended an additional $2,329 per at-risk student.

Maryland (June 2001)

The New Maryland Education Coalition (MEC), an advocacy group, contracted with Management Analysis & Planning, Inc. (MAP) to conduct a professional judgment adequacy study. A group of twenty-two Maryland educators were selected to participate in the study. "Participants included teachers, principals, superintendents, and other district administrators, representing eleven of Maryland's twenty-four districts."[180] The participants were divided into three teams and worked independently. "The teams were given a description of a hypothetical district reflecting average statewide demographics and asked to design a K-12 school program that would provide the described students with specified educational outcomes."[181] Each team created an instructional program and then configured a budget using costs provided by MAP. Teams expressed their confidence that the programs they created would be adequate to reach

[179] Ibid, 23.

[180] Management Analysis & Planning, Inc., "A Professional Judgment Approach to Determining Adequate Education Funding in Maryland," (June 2001): 2.

[181] Ibid, 3.

specified outcomes for the average district. However, when teams were provided with a school district with different demographics (i.e. similar to Baltimore City), two teams chose to modify their instructional programs for the high-poverty districts.

Although the teams worked independently many items in their programs were similar. A comparison chart is given in the report as to the program recommendations as well as a separate chart outlining the costs configured. "For K-12 funding in average schools, Team A recommended spending $9,313 per pupil, while Team B recommended $7,461 and Team C recommended $9,215."[182] The researchers stressed that even though Team A and Team C's per pupil estimates appear similar, where the money is allocated is very different. "The three teams recommended programs such as preschool, extended instruction, and small class size for all students. While indeed beneficial for most students, research suggests that these programs may be most effective for disadvantaged students, and therefore the most cost-effective use of resources would involve targeting interventions to these students."[183]

The researchers compared the estimated costs that the teams developed to the current spending. For 1999-2000, the average current expenditure per pupil was $7,132. The highest poverty district which is Baltimore City spent $7,439 per pupil. "Compared to actual 1999-2000 operating expenditures, the panels recommended an additional $329 to $2,181 in K-12 average per-pupil funding…Statewide, that amounts to additional K-12 expenditures ranging from roughly $300 million to $1.8 billion."[184]

Researchers explained that special education was not an area that the panels estimated. Due to the complexity of special education, the researchers believed a separate study would need

[182] Ibid, 9.

[183] Ibid, 14.

[184] Ibid, 17.

to be conducted. Therefore, statewide averages were used for the prototype estimates. The researchers also did not ask the panels to analyze the adequacy of funding for LEP students. The panels were asked to create programs for economically disadvantaged students and the results were on average, an additional $285 per pupil which only amounts to 3 percent more than regular per-pupil funding. The researchers explain this increase to the fact that the panels had already prescribed small class sizes and considerable resources for the average student and therefore not much more was needed to assist the economically disadvantaged student.

Maryland (September 2001)

In September 2001, Augenblick & Myers, Inc. (A&M) prepared a report for the Maryland Commission on Education Finance, Equity, and Excellence (the Thornton Commission). A&M conducted an adequacy study that estimated the base cost per student using the professional judgment approach and the successful schools approach as requested by the Thornton Commission. Using the professional judgment approach, A&M "created seven eight-member teams of educators, two teams for each prototype level of school and a single expert panel."[185] A&M met with the seven teams of people in order to develop the "resources prototype elementary, middle, and high schools would need in order to expect that, given statewide average demographic characteristics, students would be able to meet state standards."[186] To calculate the per pupil figures, numbers of things like technological equipment or personnel were multiplied by process and then divided by the number of pupils in the prototype school. For the 1999-2000 school year, the base cost figure for elementary school was $6,726, for middle school was $6,160, and for high school was $6,791.

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[185] John Augenblick and John Myers, "Calculation of the Cost of an Adequate Education in Maryland in 1999-2000 Using Two Different Analytic Approaches" (Sept. 2001): 12.

[186] Ibid, 2.

"In order to implement the successful school approach, the Maryland State Department of Education (MSDE) identified a total of fifty-nine elementary, middle, and high schools that met a set of state standards."[187] In total there were 104 schools that met Maryland standards but fifty-nine were selected for time reasons. Using the successful schools approach A&M "found the average basic spending for elementary schools to be $6,161, middle schools to be $5,655, and high schools to be $5,910."[188] A&M also surveyed the 59 successful schools to determine if additional money was received through donations. Due to the large difference in per pupil figures computed depending on the approach used, A&M provided rationale as to why the approaches in different states or even in the same state produced different base cost figures. They explained that states can "view the base cost associated with the successful school approach as a floor and the base cost associated with the professional judgment approach as a ceiling."[189]

The Thornton Commission requested additional funding to the Maryland Senate relying heavily on the recommendations from A&M's successful schools findings. In 2002, the Maryland Senate passed a bill to implement the recommendations of the Thornton Commission. Some of the additional funding needed was provided through a sales tax increase. The other $1.3 billion was approved through the Maryland Legislature to be phased in over a six year period.

Wyoming (January 2002)

In April 2001, the Wyoming Legislature contracted with MAP to make revisions to the funding model from 1997 due to the Supreme Court ruling on February 23, 2001.[190] MAP was

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[187] Ibid.

[188] Ibid, 23.

[189] Ibid, 29.

[190] *State v.Campbell County School District*, 32 P.3d 325 (Wyo. 2001).

asked to revise the cost estimates since the original estimates were made in 1997. MAP was also asked to modify certain adjustments that the court had found unconstitutional. The areas to be modified were: administrative salaries, classified wages, vocational education, at-risk students, regional cost, small schools, small districts, and maintenance and operations.

Due to the request of the Court, MAP adjusted administrator salaries taking into account education, experience, and responsibility. MAP recommended adjusting classified employee wages to reflect years of experience by using a rate of 1.2 percent for each year of experience. To determine how much vocational education was costing districts, MAP had MPR, who was a subcontractor of MAP, conduct interviews and study extensively state and district expenditure data. After the study, MAP concluded there was not sufficient and reliable data to estimate the cost of vocational education. Therefore, MAP recommended the Wyoming Legislature "develop program standards for state approved vocational programs [and] fund state approved vocational classes with a weighted ADM formula."[191] Before the vocational funding could be weighted as recommended, MAP recommended the Wyoming Legislature "conduct a comprehensive study of vocational education costs to determine how vocational ADM should be weighted and which courses qualify for vocational funding."[192] Finally MAP proposed using "a transitional categorical funding program for purchase of qualifying vocational equipment until a cost based vocational student weight is developed."[193]

MAP proposed to identify at-risk students as those students eligible for free and reduced-price lunch and limited English speaking (LES) students. MAP explained that the original

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[191] Management Analysis & Planning Associates, "Proposed Revisions to the Cost Based Block Grant," (Jan. 2002): 24.

[192] Ibid.

[193] Ibid.

prototype model assumed average numbers of at-risk students for the state. Therefore, "additional funding would be provided as the concentrations of free and reduced-price lunch eligible and limited English speaking students increases in a school."[194] MAP explains "at the highest levels of concentration, each [at-risk] student would generate an amount equal to 25 percent of the consolidated prototype funding level."[195]

MAP summarizes with "an estimated $7,000 per pupil prototypical funding rate, the highest rate of additional funding would be an additional $1,750."[196] To meet the Court's ruling, MAP recommends using "the unmodified WCLI [Wyoming Cost of Living Index] to adjust statewide average salaries to compensate for regional cost differences [and to] compute adjustment on statewide average costs as base."[197] Adopting a new cost based adjustment for schools smaller than the prototype schools is recommended by MAP and to satisfy the Court, MAP suggests to stop "reimbursements for student activities, utilities and food services; but provide cost based funding adjustments for student activities and utilities."[198]

For small districts, MAP created prototypes to demonstrate the personnel that would be needed to run the small districts. They recommend the elimination of the current practice of providing $50,000 to districts with enrollment less than 1,350 students and instead use the new cost-based formula they created. For maintenance and operations, MAP recommends using "a

[194] Ibid, 26.

[195] Ibid.

[196] Ibid, 28.

[197] Ibid, 29.

[198] Ibid, 30.

formula that uses enrollment measured by ADM, building square footage, and number of buildings in the district."[199]

New York (February 2002)

In 2002, William Duncombe prepared a working paper titled, "Estimating the Cost of an Adequate Education in New York" for the Center for Policy Research, an advocacy organization. To determine the cost of an adequate education, Duncombe used a cost function approach and cost of education indexes. "The objective of this study is to provide tools to assist the New York State Board of Regents and New York State Education Department developing a school finance system designed specifically to help students and districts reach higher standards."[200] The performance standards set by the State Board of Regents and the Commissioner of Education were used as the adequacy standard.

First Duncombe "estimated a teacher wage model"[201] to determine what districts with different characteristics would have to pay to recruit good teachers. Then Duncombe configured resource cost differences depending on performance of students. The efficiency of each district was also examined. A benchmark school district was identified and a spending level to attain a performance standard was estimated. The cost in the benchmark district was adjusted to exhibit the unique characteristics of different school districts.

Duncombe configured the cost per pupil using a low standard of 140 and the district average of 160. "The overall spending level to reach a standard of 140 is over $20 billion, which

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[199] Ibid, 34.

[200] William Duncombe, "Estimating the Cost of an Adequate Education in New York. Working Paper no. 44," (2002): 2.

[201] Ibid, 8.

compares to spending $13.2 billion in 1999-2000 in these districts."[202] When looking at per pupil costs, "required per pupil spending to reach the 140 standard is estimated to be over $15,000 per pupil in New York City, 70 percent above present spending levels, and $13,000 per pupil in the Big Four, 30 percent above present spending."[203] The average district cost per pupil to reach the standard of 140 is $8,201 and to reach 160 is $9,532.

Duncombe compared the cost function approach estimate to the empirical identification approach and determined the empirical identification approach results in higher estimates. In his report, Duncombe discussed creating a performance foundation system rather than using the traditional foundation formula. A performance foundation system requires a minimum local tax effort and state aid would be redistributed across different types of districts depending on what the local tax effort generates relative to the predetermined amount needed for an adequate education.

Kansas (May 2002)

In May 2002, Augenblick & Myers, Inc. (A&M) prepared for Kansas' Legislative Coordinating Council their seven-month adequacy study that calculated the cost of a suitable education using two different approaches – the professional judgment approach and the successful schools approach. Participants in the study were from A&M, the National Conference of State Legislatures (NCSL), and the Education Commission of the States (ECS). A&M created a definition for an adequate education with the Legislative Education Planning Committee (LEPC) using both input and output measures.

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[202] Ibid, 17.

[203] Ibid.

For the professional judgment method, A&M created "four prototype school panels, two prototype district panels, and a single expert panel to identify the resources school districts would need to have in place to meet the state's definition of education suitability."[204] After the resources had been identified by the panels, "A&M estimated the cost of the resources that had been identified. In making its cost estimates, A&M relied heavily on salary figures and benefits rates, using statewide average figures adjusted by school district size."[205] The professional judgment approach yielded a base cost of $5,811 per student.

To calculate the base cost for the average student using the successful schools approach, A&M identified 85 districts that had met the input and output criteria created by A&M and the LEPC and configured the average base cost per student. The successful school district approach yielded a base cost of $4,547. When comparing the two approaches, the "professional judgment approach base cost is $1,264 per student, or 27.8 percent higher than the successful school district base cost."[206] After acknowledging the differences in base cost per student, A&M provided an explanation why the figures vary: "in our view, the two figures can be viewed as upper and lower limits within which the true figure probably exists."[207] Last, formulas were provided that could be used in Kansas to "modify the [current] foundation level depending on the number of students in a school district."[208] Also, suggested weights for special education, at-risk students, and bilingual students were given. The weights varied depending on the school district size.

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[204] John Augenblick, John Myers, Justin Silverstein, and Anne Barkis, "Calculation of the Cost of a Suitable Education in Kansas in 2000-2001 using Two Different Analytical Approaches," (May 2002): ES-2.

[205] Ibid, ES-3.

[206] Ibid, VI-1.

[207] Ibid, VI-2.

[208] Ibid, VII-7.

Wisconsin (June 2002)

In June 2002, Jack Norman prepared a report on funding Wisconsin's schools adequately for the Institute for Wisconsin's Future, an advocacy organization. The researchers first reviewed educational research literature and identified six resource categories that would be examined further. The six categories were class size, school size, educational materials, technology, curriculum, and services.

The professional judgment approach was used. Panel members were selected based on recommendations from finance researchers and a total of forty-five people participated in the initial planning phase in December 1998. Programs for the model schools were developed using the Wisconsin Model Academic Standards, research from educational literature on best practice, and the backgrounds of the panelists. Then a survey was conducted by the Public Policy Forum. The survey was sent to all Wisconsin school principals and a random sample of teachers. "The purpose of the survey was to determine what staffing, technology, curriculum, and equipment resources educators viewed as necessary to meet Wisconsin's educational standards."[209] The response rate for the principals was 25 percent and 17 percent for the teachers.

In May 1999, the initial panel met again along with five additional members whose area of expertise was special education. Using the initial recommendations, survey information, and new research, final resource recommendations were created. Core resources identified were small schools, small classes, well-trained and well-compensated teachers, broad curriculum, appropriate technology, and special supplemental funding for rural schools. Resource needs for students with special needs was also discussed. The funding model required full reimbursement to school districts to educate special education and second language learners. For children in

[209] Jack Norman, "Funding Our Future: An Adequacy Model for Wisconsin School Finance," (June 2002): 17.

poverty, supplements for teachers and staff, extra tutoring, and summer school were recommended. Staffing recommendations are outlined for each model school - elementary, middle, and high school.

The researchers did not estimate how much additional funding would be needed for each school. Instead, "a foundation level of funds needed for each school district to finance all the recommended components of an adequate education"[210] was estimated on a per-pupil basis. Richard Rothstein was contracted to complete the costing out of resources.

> The cost-out begins with the cost of resources in the school of Omro, in Winnebago County. Rothstein selected Omro as a prototype because it is relatively close to the statewide medians in a number of basic measures. For example, total per-pupil spending in Omro was $9,088, compared with a state median of $8,812; enrollment was 1,253, compared with a state median of 999; 78% of Omro's third graders scored proficient or above on the state exam, compared with 82% statewide; the district included 99 square miles, identical to the state median.[211]

To apply costs to other school districts, "adjustments were made for estimated differences in regional costs, based on Wisconsin Department of Workforce Development data on average elementary and secondary teacher salaries by metropolitan area."[212] The researchers estimated the basic per pupil foundation amount at $8,500. "After removing expenses for capital spending, special education, and limited English proficiency, the per-pupil average in Wisconsin, for 2000-01, was $7,300, rounded to the nearest hundred."[213] It was estimated that rural schools would need an additional $700 per pupil. For students eligible for free lunch, the researchers recommended districts receive $3,200 per student. Full reimbursement is recommended for

[210] Ibid, 35.

[211] Ibid.

[212] Ibid.

[213] Ibid, 40.

special education and second language students. A special supplement for Wisconsin's 164 rural districts (population less than 1,000 students) was also recommended.

A chart is provided that outlines the suggested funding for the adequacy model for each school district for the 2000-01 school year and compares that figure to the actual amount districts spent that year.

> The difference between total K-12 spending in 2000-01 and what it would cost to give each district the calculated Adequacy level of spending, is an average of $2,705 per pupil. With about 870,000 students statewide, that amounts to an additional annual expense of approximately $2.36 billion, or about 32% (not including capital costs).[214]

The researchers acknowledged that fully funding the adequacy model was not attainable and therefore they recommended a phasing in policy that has the legislature funding a percentage of the model. Also the researchers outlined three different tax packages that could help fund the model.

Montana (August 2002)

In August 2002, Augenblick and Myers, Inc. (A&M) provided an adequacy report to the Montana School Board Association (MSBA). The professional judgment approach was used for the adequacy study and was conducted over a six-month period with eighty-three Montana citizens and representatives from A&M. First A&M used both input and output measures to define adequacy for Montana. Input measures included staffing numbers dictated by the state and course offerings. Output measures used were test scores. Four prototype districts were created as well as a separate elementary district.

[214] Ibid, 57.

There were three main panels that participated in the study. The school level panel "focused exclusively on estimating the resources needed at the prototype school sites."[215] The school district level panel "reviewed the work of the school site panel and estimated the resource needs of the prototype districts."[216] After the school district level panel was complete, the expert panel "reviewed the work of all of the district panels and made choices regarding the price of resources."[217]

"In 2001-2002, the average base cost per pupil in Montana was $4,471. This compares to base costs for the prototypes of $8,041 for small, $6,751 for moderate, $6,004 for large, $6,048 for very large, and $6,885 for the elementary district."[218] When accounting for special education students, at-risk students and Native American students, the panels configured the average total expenditure per pupil for the prototype schools to be: $9,954 for the small K-12 district, $8,992 for the moderate K-12 district, $7,694 for the large K-12 district, $7,681 for the very large K-12 district, and $8,720 for the elementary district. In Montana, the average total expenditure per pupil for the 2000-2001 school year was $7,007.

One of the biggest resources examined was personnel and staffing ratios. Other resources examined were non-personnel costs such as professional development, technology, and supplies as well as other programs like preschool and full-day kindergarten. A&M compared what the panels created for personnel to three other states (Indiana, Kansas, and Maryland) who also did

[215] John Myers and Justin Silverstein, "Calculation of the Cost of a Suitable Education in Montana in 2001-2002 Using the Professional Judgment Approach," (August 2002): 8.

[216] Ibid.

[217] Ibid.

[218] Ibid, 23.

professional judgment adequacy studies to determine if the ratios were in a similar range to other states.

Montana's Adequacy Study and the Courts

After the 2002 Montana study was released a group of plaintiffs filed suit in *Columbia Falls Public Schools v. State*[219] alleging that due to the decline in state funding programs and staff were being cut, attracting and retaining teachers was becoming difficult leading to schools' inability to meet state performance standards. Educators who served as panelists for A&M's professional judgment study testified at the trial and affirmed their belief in the professional judgment results. The District Court ruled in April 2004 that the state was not providing enough to educate Montana's students and when the case was appealed to the Supreme Court, the Court affirmed the lower court's ruling that the current system was not meeting constitutional obligations. The Montana Legislature then held a special session where they increased state funding by ten percent. Plaintiffs requested additional relief and filed a motion for a hearing after the 2007 legislative session.

> Although Judge Sherlock found that the professional judgment approach was superior to the state's current method of determining funding, he found that it would be inappropriate to rely entirely on a professional judgment approach to build a state funding system. In particular, the court found four deficiencies in the professional judgment approach: 1) the results cannot be duplicated; 2) the panel members have no incentive to think about tradeoffs; 3) the process requires many panel members to predict in areas outside of their own experience; and 4) the process may be upwardly biased due to self-serving behaviors of any panelist.[220]

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[219] 109 P.3d 257 (Mont. 2004).

[220] David T. Conley and Kathryn C. Rooney, "Washington Adequacy Funding Study," (Jan. 2007): 37; See e.g. *Columbia Falls Elem. School Dist. No. 6; East Helena Elem. Dist. No. 9; Helena Elem. Dist.No. 1 and H.S. Dist No. 1; Billings Elem. Dist. No. 2 and H.S. Dist No. 2; White Sulphur SpringsElem. Dist. No. 8 and H.S. Dist. No. 8; Troy Elem. Dist. No. 1 and H.S. Dist. No. 1; MEA-MFT;Montana School Boards Association; Montana Rural Education Association; SchoolAdministrators of Montana; Alan & Nancy Nicholson; Gene Jarussi; Peter & Cheryl Marchi; and Michael and Susan Nicosia, for themselves and as parents of their minor children, v. The State of Montana.* (Montana First Judicial District Court 2004).

Indiana (September 2002)

Augenblick and Myers conducted a seven-month adequacy study for the Indiana State Teachers Association (ISTA). The professional judgment model was used for the study at the request of the ISTA. First, Augenblick and Myers worked with the ISTA and created a definition for an adequate education in Indiana. The groups decided to use a standard that rated schools commendable or exemplary. "This means that the districts average pass (proficiency) rate of students at all grade levels and for all subject matters is 80 percent."[221] The test used for this definition is the Indiana Statewide Testing of Educational Progress Plus (ISTEP+).

A total of seven panels were created. Three school panels concentrated on estimating resources for prototype schools, three district panels reviewed the school panels recommendations and estimated resources for prototype districts, and one expert panel reviewed the district panels suggestions, discussed resource costs, and analyzed cost figures. The following costs were not included in the study – transportation, capital, and food services.

Three prototype districts (small, average, and large) were developed for the study. Small districts were comprised of 1,200 students, average districts had 4,230 students, and large districts contained 21,800 students. Then schools were created with different proportions of special education students and students eligible for free lunch (which researchers referred to as hard-to-serve students). Panels identified resources needed for elementary, middle, and high schools. ISTA selected the individuals to participate in the panels. Augenblick and Myers requested all participants come from districts already reaching above-average performance standards. Fourteen people participated in the school panels and twelve people participated in the district panels. After the school panels and district panels completed their work, the

[221] John Augenblick and John Myers, "Calculation of the Cost of an Adequate Education in Indiana in 2001-2001 Using the Professional Judgement (sic) Approach," (Sept. 2002): 8.

researchers "estimated the cost of basic services and the added cost of services for students with special needs."[222] Then the expert panel was provided the information and made changes to resources and price estimates.

The researchers chose "to raise Indiana's average corrected teacher salary to the average for the four neighboring states"[223] which entailed a 2.34 percent increase. Per pupil costs were estimated at $7,365 for a small school district, $7,142 for an average size district, and $7,094 for a large school district. The current per pupil costs for the 2001-2002 school were $7,522 for small districts, $8,115 in average districts, and $8,273 in large districts. "The added cost for students in special education in each school district is $7,522 in a small district, $8,115 in an average sized district, and $8,273 in a large district."[224] "In the average size Indiana school district, the extra per student cost of special education is 1.14 as much as base spending."[225] The cost per pupil for the hard to serve student in an average size district was estimated at $5,284. "The state funds for 2002 include an amount per at-risk child not exceeding $787."[226]

Colorado (January 2003)

In January 2003, Augenblick & Myers, Inc. prepared a seven-month adequacy study for the Colorado School Finance Project (CSFP), an advocacy organization. CSFP is "a coalition that includes the Colorado Association of School Executives, the Colorado Education Association, and the Colorado School Boards Association (and the Colorado Board of

[222] Ibid, 13.

[223] Ibid, 18.

[224] Ibid, ii.

[225] Ibid, 20.

[226] Ibid, 23.

Cooperative Education Services, BOCES)."[227] This study was not funded by the state of Colorado. Two approaches were used, the professional judgment approach and the successful school district approach, to determine a base cost figure for educating a student with no special needs. An adequate education in Colorado was defined as

> one that fulfills a set of Colorado-specific state level 'input' requirements and student performance expectations as well as a set of federal requirements and expectations related to both the reauthorization of the Elementary and Secondary School Act of 1965 (Public Law 107-110 known as No Child Left Behind H.R. 1) and IDEA (Individuals with Disabilities Education Act).[228]

Colorado uses a foundation program to distribute funds to school districts. Colorado has an accountability system which primarily focuses on the results from the Colorado Student Assessment Program (CSAP) tests. For the professional judgment approach multiple panels were used. There were school level panels, district level panels, and an expert panel. Five prototype K-12 districts were used in the study – very small, small, moderate, large, and very large. For each size district, costs were estimated for elementary, middle and high schools. After computing the base cost per pupil, the researchers found that the "base cost decreases as student enrollment increases, with a minimum level of $6,815; the base cost rises slightly in districts with over 5,200 students to a level of $6,951."[229] Added costs for students with special needs were also configured. Special education students would require about 115 percent more than the base cost, depending on the size of the district, at-risk students would require between 26 and 56 percent more than the base cost, and second language learners would require 51 to 125 percent more than the base cost.

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[227] John Augenblick and John Myers, "Calculation of the Cost of an Adequate Education in Colorado using the Professional Judgment (sic) and the Successful School District Approaches," (Jan. 2003): I-1.

[228] Ibid, I-1.

[229] Ibid, ES-2.

In order to use the successful school district approach the researchers had to modify the parameters the state had set to be considered successful since no district was currently meeting the requirements. With the modifications, the researchers determined,

> The base cost would be between $4,768 and $4,845 per student. Given the fact that higher performing districts spend more than lower performing ones, and given how far even the comparatively high performing districts are from meeting evolving state standards, we [the researchers] believe even the best districts will need to spend considerably more in order to fulfill state expectations.[230]

After doing the study the researchers concluded:

> (T)hat districts that meet more difficult standards spend more money to do so. Therefore, it may be that the base cost figure produced by the professional judgement (sic) approach slightly overstates the need for funds while the base cost figures associated with the successful school districts approach seriously underestimates the need for funds."[231]

Kentucky (February 2003)

In February 2003, Lawrence O. Picus and Associates prepared for the Kentucky Department of Education an adequacy study. The researchers set out to answer the question of "whether the SEEK [Support Education Excellence Kentucky] base provides sufficient funding for each school in the state to employ powerful enough educational strategies to meet the state's 2014 goals."[232] The state-of-the-art approach (also referred to as the evidence based approach) was used to determine adequate funding for Kentucky's students. The researchers found that "the largest increases for an adequate program are for the lowest spending districts while the smallest increases are for the highest spending district."[233]

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[230] Ibid, ES-3.

[231] Ibid, VI-2.

[232] Lawrence O. Picus and Associates, Allan Odden, Mark Fermanich, "A State-of-the-Art Approach to School Finance Adequacy in Kentucky," (Feb. 2003): 3.

[233] Ibid, 39.

When comparing increases at the school levels, the researchers found "the state-of-the-art model requires the largest increases for elementary schools, and suggests a small decrease in high school resources."[234] The large increase for elementary schools can be explained by the recommendation of full day kindergarten compared to the current half day program and the class size of fifteen in kindergarten through third grade. Increases for all school levels were needed for professional development and technology expenditures.

To implement the state-of-the-art approach to its schools, spending in Kentucky would need to increase by about $565 million for K-12 students and $175 million for preschool students, or a total of $740 million compared to what it spent on current operating expenditures ($3.9 billion) for the 2001-2002 school year. The researchers concluded that the $740 million

> …is a solid estimate of what is needed for Kentucky to provide adequate education resources for all of its students in all of its schools to maximize the possibility of the state's reaching its 2014 goal of having all students perform to the proficiency standards of the state's student testing system.[235]

Kentucky (February 2003)

Verstegen conducted an adequacy study for the Council for Better Education, Inc. (CBE), an advocacy group, "to determine the funding levels necessary for different school districts to meet State standards and objectives that define an adequate education, using a professional judgment approach."[236] An adequate education was defined using input and output measures already established by the use of the Commonwealth Accountability Testing System (CATS), definitions from the *Rose* court decision, and learner goals created after the *Rose* decision.

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[234] Ibid, 42.

[235] Ibid, 46.

[236] Deborah Verstegen, "Calculation of the Cost of an Adequate Education in Kentucky: A Professional Judgment Approach," *Education Policy Analysis Archives* 12, no. 8. Retrieved May 4, 2007 from http://epaa.asu.edu/epaa/v12n8/.

Seven panels, consisting of Kentucky citizens and educators were created to implement the professional judgment approach. There were three school level panels, which consisted of twenty-three people. The people on the school level panel

> were assembled from experienced, well-qualified professional educators, including teachers, curriculum personnel and administrators employed in Kentucky's schools. The CBE with assistance from the Kentucky Education Association took the characteristics of the type of professionals that were needed for the school site meetings and secured the people that would be working on the panels.[237]

The school level panels focused on identifying the resource needs of school sites. There were three prototype districts created – small to moderate size, moderate to large, and large to very large. Each prototype district included an elementary school (K-5), a middle school, and a high school.

There were three district level panels consisting of school and district educators as well as other personnel. The CBE with the help of the Kentucky School Board Association selected individuals to serve on the panels. "The district panel reviewed the work of the school site panels, changed the resource configurations as needed, reviewed approaches for determining district level costs and made judgments. District budgets were used for reference."[238]

Finally an expert panel met to bring "consistency across divergent State resource elements identified by the previous panels, and make decisions about prices."[239] The individuals who served on the expert panel were invited by the CBE. Charts outlining the specific staff recommended were provided in the study. The researchers chose not to compare the staffing arrangements created by the panels to other professional judgment studies from other states because the participants from the Kentucky study "did not feel that this would be appropriate due

[237] Ibid.

[238] Ibid.

[239] Ibid.

to different laws, goals, objectives, and standards across the States. The commonly expressed view was that Kentucky had high standards and goals that would render comparisons unsuitable and misleading."[240]

> Overall, a total of about $5.199 billion would be needed to address State standards and objectives. In fact, in 2001-02, about $4.102 billion was available to pay for current operating expenses from Federal, State and local revenue. Therefore, the funding gap between existing revenue and the revenue needed for current operations is $1.097 billion per year (2001-02).[241]

Washington (March 2003)

This study began in December 2001 when a meeting was held to discuss the school funding study. There were representatives from eighteen agencies, organizations, and universities invited to the meeting. The group decided to use the Oregon Quality Education Model (OQEM) as a template and held a second meeting to gather information from people from the Oregon Department of Education and the Confederation of Oregon School Administrators. A third meeting was held with David Conley, who was the lead researcher for the OQEM. The Washington participants decided that they would create a similar model for the state of Washington. In April 2002, the Rainer Institute, an advocacy group, referred to as a public policy think tank was selected to convene the meetings for the study.

> The goal of the "What Will It Take" project is to determine the staff, programs, and materials that must be provided if schools are going to offer a quality education that (1) enables students to meet the standards set in HB 1209, (2) enables the state of Washington to meet federal standards, and (3) is consistent with what Washingtonians want from their schools. The project quantifies the costs of the resources necessary to achieve those goals and then seeks to determine the performance that will result from schools funded to an adequate level. The intent is to provide a yardstick for the investments the state will need to make to ensure that schools can meet state and federal expectations.[242]

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[240] Ibid.

[241] Ibid.

[242] David Conley and William Freund, "What Will It Take? Defining a Quality Education in Washington and a New Vision of Adequacy for School Funding," (March 2003): 22.

The following organizations participated in the study: Academic, Achievement and Accountability Commission (AAAC), Association of Washington School Principals (AWSP), Latino/a Educational Achievement Project (LEAP), Office of Financial Management (OFM), Office of the Superintendent of Public Instruction (OSPI), Parent Teacher Association (PTA), Public School Employees (PSE), University of Washington College of Education, Washington Association of Colleges of Teacher Education (WACTE), Washington Association of School Administrators (WASA), Washington Education Association (WEA), Washington State School Directors Association (WSSDA), and Washington School Personnel Association (WSPA). The researchers combined the effective school-wide approach and the professional judgment approach for the study. The researchers defined adequacy "as providing a sufficient amount of funds so that schools can enable all students—or at least all but the most profoundly challenged—to meet state, federal, and district proficiency standards within the context of a high-quality overall education."[243]

Three sets of prototype schools were created each consisting of an elementary school, middle school, and a high school. The first set of prototype schools was based on what could be purchased using state funds. The second set of prototype schools demonstrated what the state of Washington was currently funding. The last set of prototype schools was called the Quality Education Model and was created using the adequacy definition. The researchers acknowledge that at a future time it may be necessary to create outlier prototype schools such as rural schools or high-poverty schools in urban settings. Costs that are not accounted for by the model are capital costs, a compensating factor for poverty, universal pre-school, and high-quality teacher and administrator preparation programs. A new method was created to fund high cost special

[243] Ibid, 15.

education students. "In this method, students who cost more than four times the average per-pupil cost are identified as being beyond the ability of local districts to fund, and the state pays their actual expenses out of a centralized fund beyond the 4X factor, which the local district pays."[244]

A modified version of the Delphi method was "used to identify the elements and components of an adequate education and its costs."[245] The researchers outlined characteristics of quality schools using effective schools research as well as recent studies on parent involvement, teacher quality, and the relationship between state policy and school practices. To estimate costs for the components and elements, the following five sources were used: "(1) a survey of Washington school districts representing approximately 11 percent of the students in the state; (2) research on effective educational practices; (3) data from publications of the Office of the Superintendent of Public Instruction; (4) data from Washington education professional associations; [and] (5) experts from Washington school districts and schools."[246]

Charts were provided that compared the Washington's current spending level to the quality education model prototype that was created by the work groups and the steering committee. The current spending for the 2000-01 school year was $5.6 billion and the recommended amount was $7.3 billion. When comparing per pupil funding by level for the 2000-01 school year, the current elementary school cost per pupil was $6,113 compared to the recommended cost of $8,393 per pupil, the current middle school cost was $5,615 compared to the recommended cost of $7,830 per pupil, and the current high school cost was $5,915 per pupil compared to the recommended cost of $7,753.

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[244] Ibid, 30.

[245] Ibid, 24.

[246] Ibid, 35.

After giving the comparisons in dollars, the researchers provided detailed charts specifically describing the current elements and components that comprise a Washington elementary, middle, and high school and compare those elements and components to the prototype schools developed. Due to the increase in funding that would be necessary to fund the prototype schools, the researchers acknowledged that although it may be ideal to increase the funding for all schools at one time, it was not feasible and therefore they provided some suggestions for phase-in funding.

Kentucky (May 2003)

This report completed by Picus and Associates is the second report they conducted for the Kentucky Department of Education to estimate the costs of funding an adequate education. In this study, Picus and Associates used the professional judgment approach. The question the researchers wanted to answer was "whether the SEEK base provides sufficient funding for each school in the state to deploy powerful enough educational strategies to meet the state's 2014 goals."[247]

For the study, the researchers organized nine panels consisting of Kentucky educators. There were six school level panels – two elementary, two middle, and two high school, two district level panels, and one state level panel. Staff from Picus and Associates and from the Kentucky Department of Education attended all of the sessions. The school level panels created a list of resources that would be needed for the prototype schools. These models were then given to the district panels to make modifications and create a prototype design for the district. The schools and district designs were presented to the state panel to suggest changes. The researchers note that

[247] Lawrence O. Picus, Allan Odden, and Mark Fermanich, "A Professional Judgment Approach to School Finance Adequacy in Kentucky," (May 2003): 4.

> During the discussions with the state level panel, in conjunction with the recommendation of Commissioner Wilhoit, it was agreed that for the purpose of the cost estimates generated for this study, current expenditures for central office administration, pupil transportation operations and maintenance, and special education for severely disabled children would be used rather than attempt to estimate a prototype district model, or models for these other functions.[248]

The researchers then prorated the prototypes based on the actual enrollment at each school. After estimating the expenditures the researchers adjusted for geographic cost differences using an index developed by Chambers.[249] Also, the researchers added the national school average teacher salary to the model. Some of the other major cost items included "providing 3 and 4 year olds living below 150 percent of the poverty level with preschool, and improving the student to computer ratio"[250] to 3:1 for a total estimated cost of $6.2 billion, which is an increase of $2.3 billion. In their conclusions, the researchers explained the most costly items recommended in the professional judgment approach:

- The additional cost for the extra student and teacher days, i.e., the extended teacher contracts, was about $257 million.
- The additional costs for the instructional aides were about $86 million.
- The additional costs for the class sizes of 20 (versus class sizes of 25) for grades 4-12 were about $414 million.
- The additional costs for the additional special education teachers, tutors and family support personnel were about $488 million.[251]

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[248] Ibid, 15.

[249] See Jay G. Chambers, "Public School Teacher Cost Differences Across the United States: Introduction to a Teacher Cost Index (TCI)." in *Developments in School Finance* [Online]. (Washington, D.C: National Center for Education Statistics, 1995). Retrieved May 2007 from http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=95758

[250] Ibid, 34.

[251] Ibid, 39.

North Dakota (July 2003)

Augenblick, Palaich and Associates (APA) completed a four-month adequacy study for the North Dakota Department of Public Instruction (DPI). North Dakota used a foundation program to distribute funds to schools. An accountability system was in place using the statewide tests. APA used the professional judgement (sic) approach to determine what an adequate education costs in North Dakota.

> An adequate education in North Dakota is one that fulfills a set of state-specific, state-level 'input' requirements and student performance expectations as well as a set of federal requirements and expectations related to both the reauthorization of the Elementary and Secondary School Act of 1965 (Public Law 107-110, known as No Child Left Behind, NCLB).[252]

Multiple panels were used to conduct the study – school-level panels, district-level panels, and a system-wide panel. Six hypothetical size districts were used to conduct the study since North Dakota has such a wide range of district size. In order to prevent manipulation of the resources recommended to produce a certain cost outcome, the panels identifying the resources were not told the cost of the resources. In the very small elementary school district the base cost figure was calculated to be $11,593 (the highest figure) and in the moderate size K-12 school district the base cost figure was configured to be $6,005 (the lowest). An increase of 10 percent for all personnel salaries was used in order to bring the salaries to the average salaries of surrounding states.

The researchers found that their "cost estimates for 2001-2002 using the professional judgement (sic) approach produced per student base cost figures that decrease as district enrollment rises from very small to moderate and then increase modestly in large districts."[253]

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[252] John Augenblick, Robert Palaich, et al., "Calculation of the Cost of an Adequate Education in North Dakota in 2002-2003 using the Professional Judgement (sic) Approach," I-1.

[253] Ibid, ES-2.

The added cost of educating special education students varied depending on the severity of the disability and the size of the district. "The added costs range from 52 percent of base cost to six times the base cost, depending on the level of special education (mild, moderate, or severe) and the size of the district in which services are provided."[254] For at-risk students depending on the size of the district, the percentage increase to the base figure ranged from 20-40 percent and for LEP students the percentage increase ranged from 40-90 percent.

Arkansas (September 2003)

In September 2003, the final report for an evidenced-based approach to school finance adequacy in Arkansas was completed. Lawrence O. Picus and Associates led the six-month study. The recommendations in the study came from the Joint Committee on Educational Adequacy, seventy Arkansas educators, and other consultants. Picus was asked to conduct the study as a result of an Arkansas Supreme Court ruling on *Lakeview v. Huckabee.*[255] First the Joint Committee "adopted a definition of what an adequate education is, and that definition served as a basis for identifying the resources required for adequate funding."[256] Then Arkansas educators were asked "to review and critique a set of prototypical school models that the Joint Committee"[257] had developed. After finalizing the model schools and computing salary increases and incentives, the Joint Committee determined that it would cost "the state an additional $380.6 million per year."[258] Lastly, the Joint Committee explains "a formula for

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[254] Ibid, V-2.

[255] *Lake View School District No. 25 v. Huckabee*, 351 Ark. 31, 91 S.W. 3d 472 (2002), cert den. *Sub. Nom. Wilson, J.L., et al. v. Huckabee, Gov. of Ark., et al*., 538 U.S. (2003).

[256] Picus, Lawrence, O. "An Evidenced-Based Approach to School Finance Adequacy in Arkansas," (Sept. 2003): 21.

[257] Ibid, 28.

[258] Ibid, 65.

distributing adequate funds to the 308 school districts across the state in a manner that will meet the Court's requirements"[259] and includes a needs based foundation program instead of a wealth only based program.

The Arkansas Legislature failed to make changes to the state funding system by the court's deadline of January 2004. The Arkansas Supreme Court appointed special masters and in June 2005 special masters found Arkansas' funding system inadequate.[260] Special masters also expressed that they believed the Picus study to be competent and comprehensive. The Arkansas Supreme Court ruled in December 2005 that the funding system for schools was still inadequate and a year was given to remedy the inadequacy. In April 2006, the legislature approved a school funding increase of $132.5 million.[261] The Arkansas Supreme Court continued to keep the case open in November 2006 and reappointed the special masters to oversee compliance.

Tennessee (December 2003)

In December 2003, Augenblick, Palaich and Associates, Inc. (APA) conducted a six-month adequacy study for the Coalition for Tennessee's Future, an advocacy organization. For the study an adequate education was defined as "one that fulfills a set of state-specific, state-level 'input' requirements and student performance expectations as well as a set of federal requirements and expectations related to both No Child Left Behind (NCLB, Public Law 107-110) and the Individuals with Disabilities Education Act (IDEA)."[262] A total of sixty-six

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[259] Ibid, 67.

[260] See *Lake View School District No.25 of Phillips County, Arkansas, et al., v. Governor Mike Huckabee, et al.*, in Special Masters' Report to the Supreme Court of Arkansas (2005).

[261] Lu, K. *Arkansas Increases Funding After Court Rules*. 2006 Retrieved March 2007 from http://www.schoolfunding.info/news/litigation/4-13-06arspecialsession.php3.

[262] Augenblick, Palaich and Associates, Inc., "Calculation of the Cost of an Adequate Education in Tennessee in 2001-02 using the Professional Judgment Approach and the Successful School District Approach," (December 2003): ES-1.

educators participated in the study. The different panels were divided into school-level panels, district-level panels, and a system-wide panel. The districts were categorized by small, moderate, large, and very large. The average per pupil cost using the professional judgment approach was estimated at $4,963 (small district), $5,571 (moderate district), $5,286 (large district), and $5,008 (very large district).

APA used the state report card to identify successful school districts for the successful school district approach. There are thirty-three indicators that districts need to meet to be deemed successful by the state. Since no districts at the time of the study were meeting all state and federal standards APA had to modify the state's definition of a successful school district. Eight districts were identified as meeting twenty-eight of the thirty-three indicators. "The eight districts had an average base cost of $4,949, with a range of base spending from $4,568 to $6,877. The 112 districts that were not deemed successful under this approach had an average base cost of $4,642 with a range of base spending from $3,500 to $6,628. These figures do not include the cost for special need students.

New York (January 2004)

The New York State Education Department prepared a report titled, *Regents Proposal on State Aid for 2004-05* for the New York State Board of Regents. Included in this report was a costing out study titled, *Estimating the Additional Cost of Providing an Adequate Education*. The successful school districts approach was used to determine the cost of an adequate education. However, the researchers added to the approach by determining a weighting for at-risk pupils and using a Regional Cost Index. For the study, a general definition for an adequate education was described as "the greater equalization of academic outcomes (not resource inputs)

so that all children are provided the opportunity to receive an education, which will subsequently allow them to lead meaningful and productive adult lives."[263]

Data from the Regents High School examinations was collected for the following school years: 1999-2000, 2000-01, and 2001-02 and for the following tests: Mathematics A, Global History, U.S. History, English, and Earth Science. Also, data from the English Language Arts and Mathematics tests for fourth grade were collected. The researchers then defined an adequate education for each district using the test data:

> With a simple, unweighted average of 80 percent of its test takers scoring at Level 3 or above on seven examinations (Fourth Grade English Language Arts, Fourth Grade Mathematics, high school Mathematics A, Global History, U.S. History, English and Earth Science) in 1999-00, 2000-01 and 2001-02. The reader will note that, given this operational definition, a district could have less than 80 percent of its test takers with a score below Level 3 on one or more of the individual tests and could still be found as providing an adequate education.[264]

To account for inefficiency in districts, after identifying the successful districts, the researchers used the average expenditure per pupil for the lower spending 50 percent of the districts.

The researchers identified students of need as those students eligible for free or reduced price lunch in grades K-6 using an average of three school years from 1999-2002. The high school districts were given the average configured from the component school district. After reviewing the research literature and examining how other states are adjusting for at-risk pupils, the researchers decided to give an additional weight of 1.0 for students eligible for free or reduced price lunch. The researchers also decided to include regional cost to account for differing educational costs throughout the state. "The cost indices used in calculating the estimate are the Regional Cost Indices (RCI) calculated for the 2004-05 State Aid Proposal of

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[263] New York State Education Department, "Estimating the Additional Cost of Providing an Adequate Education," in *Regents Proposal on State Aid to School Districts for 2004-05*, (January 2004): 47.

[264] Ibid, 52.

the Board of Regents"[265] which were provided by the Department of Labor based on professional salaries. The researchers determined an additional $6.0 billion would be needed and recommended an implementation period of seven years.

Minnesota (February 2004)

The Minnesota Center for Public Finance Research, an advocacy organization, completed the report, "Determining the Cost of an Adequate Education in Minnesota: Implications for the Minnesota Education Finance System" in February 2004. The Data Envelopment Analysis (DEA) method was used to determine the cost of an adequate education. "Data envelopment analysis (DEA) is a technique for measuring the relative performance of organizations where the presence of multiple inputs and outcomes makes direct comparisons between organizations difficult."[266] The researchers selected DEA "because of its ability to handle multiple outcomes simultaneously. Unlike other statistical approaches that would compare individual districts to a hypothetical 'state average school district,' DEA is a 'benchmarking' approach which compares each district to actual best performing districts."[267] The linear programming model is then run a second time with the adequacy standards in order to estimate what an adequate education would cost.

For the study, adequacy was defined using eight performance outcomes which included Minnesota's Comprehensive Assessment Test scores and graduation rates. Of the 343 school districts, 317 were used in the study. "In 2002, the vast majority of the 317 Minnesota school districts included in this study met and exceeded the requirements of an 'adequate education' as

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[265] Ibid, 54.

[266] Mark Haveman, "Determining the Cost of an Adequate Education in Minnesota: Implications for the Minnesota Education Finance System." (February, 2004): 4.

[267] Ibid.

defined by performance on the Minnesota Comprehensive Assessment Test, the Minnesota Basic Skills tests, and district graduation rates."[268] When analyzing the efficiency of each school district, "overall Minnesota school districts scored quite high on measures of relative efficiency."[269] The cost per pupil of an adequate education in Minnesota was found to be $6,236. For districts with the higher concentrations of at-risk students, the figure was estimated to be twice the state average. "In comparing the 2002 state operating expenditures per pupil to the district specific cost estimates we [the researchers] find that the vast majority of school districts are already spending sufficient amounts to achieve the basic skills adequacy standards."[270]

New York (March 2004)

In March 2004, Standard and Poor's prepared a report for the New York Commission on Education Reform. The purpose of the report was to answer the question: "How much spending is adequate to provide an opportunity for a sound, basic education?"[271] This question was a central one raised after the courts' ruling in *Campaign for Fiscal Equity v. State.*[272] The researchers used an empirical model resembling the successful schools method at the request of the New York Commission on Education Reform.

Specifically, the request was to:

- identify the spending levels of New York's better-performing school districts;
- take into account additional resources for educating students with special needs;

[268] Ibid, 7.

[269] Ibid, 10.

[270] Ibid, 13.

[271] Standard and Poor's, "Resource Adequacy Study for the New York Commission on Education Reform," (March 2004): 2.

[272] 100 N.Y. 2d 893 (N.Y. 2003).

- consider regional differences in the purchasing power of the dollar; and
- use empirical data to calculate equivalent levels of funding for the State as a whole, using data extrapolated from the better-performing districts.[273]

For the study, the researchers identified four different achievement scenarios. The first scenario identified the top performers; which included 102 K-12 school districts that met fifteen indicators such as the passing rate on the State test and graduation rate. The second scenario consisted "of 180 K-12 school districts identified by the State Education Department as having already met the State's 2005-06 Performance Index targets under the federal No Child Left Behind Act (NCLB). These districts also have Regents Diploma rates above the State average, and dropout rates below the State average."[274] The third scenario consisted "of 108 K-12 school districts identified by the State Education Department as having already met the State's 2007-08 Performance Index targets under NCLB…The districts must also have a Regents Diploma rate above the State average, and a dropout rate below the State average."[275] The fourth scenario included 208 K-12 districts that the State Education Department identified as meeting an adequate education as outlined in the Regents Proposal on State Aid for 2004-05.

The researchers then configured how much additional funding would be needed in 2004 dollars under the four different scenarios to fund all the New York districts to the funding level of the successful districts identified. For the study, the following expenditures were excluded: transportation costs, debt service, and capital fund transfers. Expenditures were analyzed at the district level, not the school level due to the way school level data were maintained. The following weights were applied to the base per pupil figure computed: 2.1 for students with

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[273] Ibid, 12.

[274] Ibid, 15.

[275] Ibid, 16.

disabilities, 1.35 for at-risk students, and 1.2 for limited English proficiency students. The researchers developed these weights by reviewing the research literature and determining the weightings being used by education agencies.

The researchers also adjusted the expenditures "for differences in educational purchasing power across the state using two alternative regional cost indices: the New York Regional Cost Index and the Geographic Cost of Education Index."[276] To adjust for cost effectiveness, the researchers computed "the average of the lowest spending 50% of districts in each scenario."[277] Therefore, the researchers identified "high-performing districts whose spending levels are in the bottom two quartiles."[278] The researchers identified forty-four districts that met successful schools requirement under all four scenarios. The spending gaps that the researchers found ranged from $4.61 billion to $5.57 billion when adjusted by the New York Regional Cost Index. The spending gaps were less when adjusted by the Geographic Cost of Education Index and ranged from $2.45 billion to $3.39 billion.

New York (March 2004)

In March 2004, American Institutes for Research (AIR), Management Analysis and Planning, Inc. (MAP), and Lori Taylor from Texas A&M University completed their fifteen-month New York adequacy study. The researchers used the professional judgment approach and designed the study to answer the question "What is the cost of providing all New York public school students a full opportunity to meet the Regents Learning Standards?"[279] Ten panels were

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[276] Ibid, 19.

[277] Ibid, 21.

[278] Ibid.

[279] Jay G. Chambers, Thomas B. Parrish, Jesse D. Levin, James R. Smith, James W. Guthrie, Rich C. Seder, and Lori Taylor, "The New York Adequacy Study: Determining the Cost of Providing All Children in New York an Adequate Education," Volume 1 – Final Report, (March 2004): 1.

created which consisted of New York State highly qualified educators. A summary panel was also created which consisted of educators from the other panels who reviewed the synthesis created by the AIR/MAP team. Besides educators, AIR/MAP created a panel of stakeholders which included "parents, taxpayers, the state legislature, the governor's office, school board members, and the business community."[280] Some of the resource effects identified were school size, poverty, special education services, English language learners, staff to pupil ratios, class size, pupil-teacher ratios, and pupil to professional staff ratio.

The AIR/MAP team examined teacher salaries by identifying cost factors and discretionary factors. Then the team configured costs using various models and compared the results of each model, discussing pros and cons of each method. A lump-sum approach was used to determine the cost of an adequate education in New York. "The lump-sum model simply adds on what was previously spent on district-level functions."[281] "The AIR/MAP analysis projects that an average per pupil expenditure of $12,975 would be required to provide adequate resources to each and every student in New York State."[282] For the 2001-2002 school year the average per pupil expenditure was $11,056. There were several stages of the team's research and at each stage the adequate amount of funds was configured. The team explained that these amounts could be seen as lower and upper limits. "With a combination of federal, state and local sources of revenue, the public schools in New York State spent a total of $31.71 billion in the 2001-02 school year to educate its students."[283] The researchers determined an additional $6.21-8.40 billion was needed.

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[280] Ibid, 5.

[281] Ibid, 71.

[282] Ibid, 75.

[283] Ibid, 1.

New York's Adequacy Studies and the Courts

Due to the ruling in *Campaign for Fiscal Equity (*hereinafter, *CFE) v. State*[284] the state of New York needed to conduct an adequacy study to determine the cost of a sound basic education. There were three adequacy studies done in 2004, one commissioned by CFE and the New York State School Boards Association, a second contracted by the Governor's Commission on Education Reform, and the third study was prepared for the New York Board of Regents. The Governor's Commission chose to accept the lower funding recommendations from Standard and Poor's study.[285] Initially the judicial referees found that the state failed to meet the deadline for determining and funding the cost of an adequate education and ordered the state to fund an additional $5.63 billion yearly. The Supreme Court in March 2005 affirmed the judicial referees' report.[286] In March 2006 the Intermediate Appeals Court ordered the state to begin phasing in increases to New York City School's operating funds and give facilities funding. The New York Legislature did meet the court's request for facilities funding but did not provide funding for the operating budget.

> The New York Court of Appeals declared in November 2006 that New York City schools required additional funding ($1.93 billion adjusted from 2004 for inflation), rejected the requirement for a capital improvement plan, and over-turned the Supreme Court's affirmation of the referees' report. The court instead found that the state's 2005-07 budget plan was a reasonable calculation of adequacy.[287]

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[284] 100 N.Y. 2d 893 (N.Y. 2003).

[285] Michael A. Rebell, "Professional Rigor, Public Engagement and Judicial Review: A Proposal for Enhancing the Validity of Education Adequacy Studies," *Teachers College Record* 109, no. 6 (2007).

[286] *Campaign for Fiscal Equity v State of New York,* 8 N.Y.3d 14 (N.Y. 2006).

[287] David T. Conley and Kathryn C. Rooney, "Washington Study," (Jan. 2007): 39; See *Campaign for Fiscal Equity, Inc. v. State of New York,* 8 N.Y. 3d 14 (N.Y. 2006).

Texas (March 2004)

The state of Texas contracted with Taylor et al. to conduct an adequacy study using a district-level cost function approach so the state could use the results as evidence in the *West Orange Cove v. Neeley*[288] case. The researchers "measure district costs as average operating expenditures per pupil, regardless of funding source. Therefore, [the] cost measure includes federal, state, and local dollars."[289] Debt service, transportation, and food expenditures are excluded. The researchers chose to "use a value-added measure of education outcomes that is based on changes in passing rates on the TAAS"[290] (Texas Assessment of Academic Skills). The Texas Education Agency (TEA) supplied "math and reading scores for each of the nearly 1,000,000 students in grades three through eight attending traditional public schools in Texas between the 1993-94 and 2001-02 school years, as well as data on students in grade 10."[291] Then the researchers examined the scores and calculated the percentage of students for each school district who had passed the TAAS for the current school year "and compared it to the percentage of those same students who passed two years previously."[292] The researchers' "value-added measure is the average increase in the district passing rate for elementary and high school students (grades five through eight and grade 10)."[293]

Due to concerns that the TAAS measures minimum performance, the researchers also chose to examine "two other district performance indicators: (1) the percentage of students who

[288] 107 S.W.3d 746 (Tex. 2005).

[289] Timothy J. Gronberg, Dennis W. Jansen, Lori L. Taylor, and Kevin Booker, "School Outcomes and School Costs: The Cost Function Approach," (2004): 5

[290] Ibid, 7.

[291] Ibid.

[292] Ibid, 7-8.

[293] Ibid, 8.

perform 'above criterion' on the SAT or ACT tests and (2) the percentage of students who complete an advanced course."[294] For both indicators, the researchers chose to calculate three-year moving averages. The researchers also considered using drop-out rate as an indicator but due to the TEA's low calculated rate, the researchers felt the numbers were not plausible and elected to not use the drop-out rate as an indicator.

To calculate the cost function index, the researchers used a teacher cost index and an estimated auxiliary cost index. Costs for instructional equipment and materials were not included in the cost function because the prices were not available. Since variations in student populations can affect costs, the researchers incorporated an analysis of the percentage of students in each school district that had the following characteristics: special education and/or LEP classification, national school lunch program participation, and high school enrollment.

The researchers chose to "include a measure of geographic isolation—the distance to the nearest major metropolitan area—in order to proxy for some of the variation in non-teacher input prices."[295] Lastly, the researchers identified efficient districts "by estimating a stochastic frontier form of the cost function"[296] which helps the researchers "estimate how much of observed costs can be attributable to measured cost factors, and how much is attributable to 'unnecessary' costs due to deviations from minimum-cost or best practices."[297]

The researchers chose to use the multiple regression method to estimate the cost model. For the analysis, "the dependent variable is actual spending per pupil by school districts, and the

[294] Ibid.

[295] Ibid, 14.

[296] Ibid.

[297] Ibid.

independent variables are the various cost factors described above."[298] The K-12 districts were used for the cost model which included 695 districts. Some K-12 districts were excluded because of missing data. After the researchers estimated the cost function, then they configured education cost indices.

The cost differential for educating an economically disadvantaged student was $1,960, for a limited English proficient student was $1,248, for a less severe special education student was $3,695, and for a more severe special education student was $5,306, and for a high school student was $4,001. All the estimates were configured for 2004 dollars. The researchers concluded "that the per pupil cost of meeting the performance standard is between $6,172 and $6,271 in 2004 dollars. [The] average per pupil revenue in 2004—which includes federal, state and local dollars—was $6,503."[299] The researchers found that "the total cost of meeting the performance standard is between $26.2 billion and $26.6 billion"[300] as compared to total actual revenues of $27.6 billion.

An explanation the researchers provided for the difference in actual revenue versus predicted costs was that many districts were already performing above the standard.

> Presuming that no cut in funding for any district, we [the researchers] estimate that it would cost between $226 million and $408 million more per year to meet the average performance standard required to comply with the No Child Left Behind Act and to bring up to the state average the share of students taking advanced courses and scoring above criterion on the SAT/ACT.[301]

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[298] Ibid, 16.

[299] Ibid, 26.

[300] Ibid.

[301] Ibid, 27.

Texas (May 2004)

For the case, *West Orange Cove v. Neeley*,[302] plaintiffs hired Reschovsky and Imazeki to complete a costing out study that the plaintiffs planned to use as evidence at trial. In this study, the researchers used "a statistical approach to estimate the minimum amount of money Texas school districts need to achieve state and federally mandated student performance goals."[303] The researchers conducted a log linear cost function for the K-12 districts in Texas. The dependent variable is the per pupil operating expenditures for the 2001-02 school year. Transportation and food expenditures were excluded from the study.

The Texas Assessment of Knowledge and Skills (TAKS) began being used in 2002-03. Prior to this, the Texas Assessment of Academic Skills (TAAS) was administered. Due to this change in testing and the unavailability of two years of TAKS scores, the researchers used the TAAS scores for the last two years the test was given to estimate a cost function. Since the TAKS test is considered more difficult than the TAAS, the researchers converted the TAAS passing scores to TAKS passing scores. Additional outcome measures the researchers used were the State-Developed Alternative Assessment (SDAA), the annual retention rate, and the percentage of high school seniors scoring "1100 or above on the SAT or a score of 24 or above on the ACT."[304]

The researchers estimated the cost function using two-stage least squares. Teacher salaries were used to estimate the education cost function. The researchers' goal was

> to isolate factors that contribute to higher levels of education spending, but are outside the control of local school districts. To accomplish this goal we [the researchers] use an

[302] 107 S.W.3d 746 (Tex. 2005).

[303] Jennifer Imazeki and Andrew Reschovsky, "Estimating the Costs of Meeting the Texas Educational Accountability Standards," (2004): 3.

[304] Ibid, 7.

> index of teacher costs developed by Lori Taylor (2004). Her index 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).[305]

Other characteristics included to estimate the cost function are the percentage of students in each district who are economically disadvantaged, limited English proficient, served by special education, black, Hispanic, enrolled in high school, and a district's overall enrollment. The researchers chose not to directly measure efficiency of districts. Instead, they chose to "address the issue of efficiency by assuming that school districts will operate more efficiently if they face a competitive local educational market"[306] and measured public school competition by using a Herfindahl index. "The index increases with the amount of competition so if district efficiency is correlated with the amount of competition that the district faces, then we would expect spending to be lower in districts with higher values of the Herfindahl index."[307]

Using data from the 2001-02 school year, the researchers estimated the cost function for K-12 districts. Due to missing data in some districts, 827 districts were used to estimate the cost function. After estimating the cost function, the researchers then calculated the cost index value for districts. To do this, accountability standards must be set. The researchers used the standard established by the Texas State Board of Education for the TAKS exam for the 2005-06 school year. The TAAS passing rates were converted to TAKS passing rates using the Texas Education Agency's conversion system. The researchers found "in 2004 dollars, the average cost per pupil

[305] Ibid, 8; See Lori Taylor, "Adjusting for Geographic Variations in Teacher Compensation: Updating the Texas Cost-of-Education Index," A report prepared for the Texas Legislature Joint Committee on Public School Finance, The Texas School Finance Project, 2004.

[306] Ibid, 10.

[307] Ibid, 11.

of meeting the 55 percent standard would be $8,101."[308] The researchers also estimated the average cost per pupil if the standard was set at 70 percent. They found in 2004 dollars it would cost $11,163 per pupil to reach that standard.

In their conclusion, the researchers explained why they believed their costs may be an under-estimate of what Texas districts may need to reach the accountability standards.

> Consider, for example, the Fairfield Independent School District. This district with around 1,600 students just exceeded the 55 percent passing rate standard, and thus according to our first definition of the 55 percent standard would not require any additional spending to meet the standard. However, when we examine the TAAS passing rate data for the sub-groups, we observe that the passing rate for blacks was 7.8 percent below the overall TAAS passing rate, the rate for Hispanics was 13.4 percent below the overall rate, and the rate for economically disadvantaged students was 8.9 percent below the overall rate. The clear implication of these numbers is that Fairfield ISD will have to spend additional money to bring the passing rates of these sub-groups of students up to the required passing rate standard.[309]

The researchers estimated that the additional costs to have all students achieve a passing score on the TAKS range from $1.7 to $6.2 billion (in 2004 dollars). The range varies depending on how the standard definition of a 55 percent passing rate is defined.

Texas' Adequacy Studies and the Courts

In *West Orange Cove v. Neeley*,[310] plaintiffs alleged the limit on local property tax rates was unconstitutional and that the funding system was inadequate. Plaintiffs hired Reschovsky and Imazeki to complete a costing out study. The state contracted with Taylor et al. to conduct an adequacy study for the trial. The trial court ruled in November 2004 that the funding system for Texas did not provide for an adequate education as mandated by the constitution. The trial court used both adequacy studies in rendering his decision. He found the Imazeki and

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[308] Ibid, 16.

[309] Ibid, 20-21.

[310] 107 S.W.3d 746 (Tex. 2005).

Reschovsky study "methodologically sound [and stated that it] provides strong evidence of the cost of meeting certain performance standards for particular districts."[311] Judge Dietz addressed many flaws he found in the Taylor study. Some of these flaws included not including district weights for pupil size, not acknowledging the differences between the two Texas tests, and not using an accurate measure of teacher salaries. Even though Judge Dietz found flaws in the Taylor study, he still said the study clearly showed insufficient funding in many Texas districts. The Texas Supreme Court ruled in *Neeley v. West Orange Cove*[312] in November 2005 that the local property tax was in violation of the constitution because of the manner in which the state levied the local property tax. The tax in effect had become a state property tax which violated article VIII, section 1-e of the Texas Constitution. The Supreme Court concluded by stating "structural changes, and not merely increased funding, are needed in the public education system to meet the constitutional challenges that have been raised."[313]

Arizona (June 2004)

In June 2004, the final report for an evidenced-based approach to school finance adequacy in Arizona was completed. This was a school finance adequacy study funded by the Rodel Charitable Foundation of Arizona and Greater Phoenix Leadership, an advocacy group. This study was not funded by the state of Arizona. The costs included in the study addressed only instructional needs (i.e. instruction, pupil and instructional support, and school administration). Therefore, operational costs (i.e. construction, transportation, and food services) were not addressed in the study.

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[311] Ibid.

[312] 176 S.W.3d 746 (Tex. 2005).

[313] Ibid.

A Steering Committee led by Lawrence O. Picus and Associates first defined an adequate education and then used that definition as the foundation for identifying the resources needed. They call the approach they used an evidenced-based approach but also included the professional judgment approach after developing the items required to provide all Arizona students with an adequate education. The professional judgment panels were a group of educators who were brought together for a day and half to review the Steering Committee's recommendations. The educators were divided into two panels and the "goal was to obtain the professional judgments of a cross section of key individuals in schools and school districts on the work of the committee."[314] The two panels gave suggestions and the Steering Committee determined what changes needed to be made.

A table is provided in the study that outlines "recommendations for adequate resources for prototypical Arizona elementary, middle, and high schools."[315] The five main recommendations were providing full day kindergarten for all students, preparing and recognizing teachers for high performance, creating smaller schools, reducing class sizes in lower grades, providing individualized tutoring or extra help for struggling students.

The main finding of the report was that "to provide for an adequate education program, Arizona would need to increase current expenditures from the 2002-2003 average of $5,745 (including an estimated additional amount for full day kindergarten) to $7,175, or an increase of about $1,430 per pupil, but still below the national average."[316] In sum, the Steering Committee found that "total resources for core instructional services using the evidenced-based approach to

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[314] Picus, Lawrence, O. "An Evidenced-Based Approach to School Finance Adequacy in Arizona, Final Report," (June 2004): 68.

[315] Ibid, 76-78.

[316] Ibid, 80.

determining adequacy would require expenditures of $5.2. billion, or an increase of $1.3 billion."[317]

Arizona (February 2005)

"In the summer of 2002, the Arizona Legislative Council contracted with the National Conference of State Legislators to identify the total and incremental costs associated with educating English Language Learners (ELLs) in Arizona."[318] Incremental costs were defined as those costs "that provide ELL programs and that are in addition to the regular costs of conducting programs for English-proficient students."[319]

A school district survey was sent to fourteen public school districts and two charter schools so that school districts could identify the materials and personnel costs being used to provide services to ELL students. Initial survey results were reviewed by an expert panel and reliability and validity issues were raised due to the length and complexity of the survey. A second survey was then conducted to increase the reliability and validity of the responses. Even though a telephone interview for follow-up information was also conducted the researchers had difficulty with the districts completing and returning the surveys. (Only seven of the 16 surveys sent were returned by the deadline.) Using the information obtained from the returned surveys, the researchers outlined the incremental costs by program area that is needed to run an ELL program which totaled $669.35 per student.

> The expenditure data reported here should to be treated with some caution, however. This is due to the relatively small number of districts included in the sample, the need to combine data from two separate survey instruments administered at different points in time, and the general difficulty encountered when attempting to collect detailed fiscal

[317] Ibid.

[318] The National Conference of State Legislators, "Arizona English Language Learner Cost Study," (February 2005): ix.

[319] Ibid, 8.

> data via surveys. A comparison to the 2001 ELL cost study conducted by the ADE [Arizona Department of Education] suggests that the results here may be somewhat understated. That ADE study of 174 school districts and charters in Arizona found that incremental costs for ELL programs ranged from zero to $4,676. Changes in the way the state's school districts track and report program data may be required before definitive current expenditure data can be collected and analyzed.[320]

"To thoroughly examine available information on what an adequate ELL education in the state may entail, NCSL also employed the professional judgment approach."[321] Two professional judgment panels were created – a state professional judgment panel which included seven members and a national professional judgment panel which included 5 members.

> In each case, the professional judgment process began with identifying current costs associated with educating ELLs and non-ELLs in the state. Each panel then made appropriate adjustments based on compliance with the implementation of requirements stemming from Proposition 203, the *Flores* consent decree and the No Child Left Behind Act of 2001.[322]

The state professional judgment panel concluded that in grades kindergarten through second grade, the incremental spending for ELL students would total an average of $1,785 per ELL student and in third grade through twelfth grade ELL students would total an average of $1,447. The national professional judgment panel categorized ELL students into high-need and lower-need taking into account ELL students who also qualified for free and reduced price lunch. Then the panel configured the incremental cost per ELL student further dividing the categories into elementary, middle, and high school students. For high-need ELL students, the national panel configured the incremental cost to be $2,751 for elementary students, $2,323 for middle school students, and $1,997 for high school students. For lower-need ELL students, the national panel computed the incremental cost to be $1,236 for elementary students, $1,227 for middle school

[320] Ibid, 16.

[321] Ibid, 18.

[322] Ibid, 23.

students, and $1,026 for high school students. "On average, the current incremental cost of the ELL programs in the fourteen school districts included in the study is $670 per student."[323]

Hawaii (March 2005)

In March 2005, an adequacy report was prepared by Grant Thornton for the Hawaii Department of Education. The objective of the study was to "develop an adequacy funding model that can be used as a tool for determining the level of funding required to support the vision and goals of the State of Hawaii Department of Education (DOE) and Board of Education (BOE)."[324] The researcher found that the DOE would need to increase funding by $278 million dollars to provide an adequate education for all the students in Hawaii. A five-year implementation plan was outlined in the study since the researcher identified the challenge of increasing the DOE's budget by $278 million. "At the adequate funding level, DOE's average cost per student would increase from $8,598 to $10,117 – a 17.7 percent increase over SY03-04."[325] The method used to configure the cost is the evidenced-based approach.

An initial step the researcher conducted was to develop a definition of an adequate education in Hawaii. Policy statements were collected from the DOE's strategic plan and accountability framework, the BOE, Act 51, and the Hawaii Revised Statutes. Fourteen policy statements were created using the previously mentioned sources to define an adequate education.

To determine the cost of an adequate education, first, the researcher created Baseline Schools. "The Baseline Schools reflect averages of all schools at each level in terms of students they enroll, the socioeconomic status of their students, the percentage of special education and English language learner students, the average experience of the teaching staff, and other factors

[323] Ibid, 39.

[324] Grant Thornton, "State of Hawaii Adequacy Funding Study," (March 2005): ES-2.

[325] Ibid., ES-10.

relevant to the school's organization and function."[326] An elementary, middle, and high school baseline model were created. Then adequacy schools were created so that a comparison could be made between the baseline schools and the adequacy schools. The researcher explained that the interventions were selected for the adequacy schools "because research and practice indicate that they are the most cost-effective ways of achieving DOE goals."[327]

The researcher provided detailed charts outlining the expenditures (i.e. salaries, computer hardware/software, supplies, training) for the elementary, middle, and high schools. Intervention charts were also provided detailing the costs of each intervention per pupil. The interventions were chosen from the following reports: *Improving quality: Evidence on resource-based policies and student achievement* and *Strengthening accountability: Evidence on regulatory and market-based strategies to improve student achievement* both produced by ECONorthwest and the Center for Educational Policy Research (CEPR) as well as a document produced by the Educational Testing Center (ETS) titled, *Parsing the achievement gap: Baselines for tracking progress.*

Connecticut (June 2005)

In June 2005, Augenblick, Palaich and Associates, Inc. (APA), prepared an adequacy report for the Connecticut Coalition for Justice in Education Funding (CCJEF), an advocacy group. The successful school district approach and the professional judgment approach were used to configure the base cost of a student. For the study, adequacy was defined as "the amount of funding needed so that school districts can meet state and federal student performance

[326] Ibid., I-1.

[327] Ibid., IA-1.

expectations."[328] Connecticut uses a foundation-type formula to distribute funds to school districts.

Using the successful school district approach the researchers utilized the targets set for the 2007-2008 school year and also included the requirement that districts must have met this target for three consecutive school years. With this standard, thirty-five out of the 166 districts were identified as successful. "The 2003-04 weighted expenditures of the twenty-five K-12 and three regional districts selected as being successful was $7,716. The weighted average expenditures of the seven successful K-6/8 districts was $8,635."[329]

The professional judgment panels were asked to determine resources that were needed to reach the performance targets set for 2013-2014. Several panels were created to conduct the professional judgment approach. There were school level panels, district-level panels, and an overview panel. Hypothetical school districts were created. There were K-12 districts and K-6/8 districts. The K-12 districts were divided into small, moderate, and large. After configuring the resources the panels recommended the researchers found that in a moderate size K-12 district the combined school-level and district-level base cost per student was $10,388. In the same district, added cost to educate a special education student with a mild disability was $10,248. The at-risk students' added costs depended on how many at-risk kids were in the district, the costs declining as enrollment increased. The second language learner required an additional $7,014 to educate.

[328] John Augenblick, Robert Palaich, Justin Silverstein, Douglas Rose, and Dale DeCesare, "Estimating the Cost of an Adequate Education in Connecticut," (June 2005): 5.

[329] Ibid, 9.

Montana (October 2005)

The Montana Legislature created the Joint Select Committee on Education Funding and then formed the Quality Schools Committee who then contracted R.C. Wood & Associates to conduct an adequacy study for the state of Montana. Due to the Supreme Court ruling in *Columbia Falls v. State*[330] the Legislature passed Senate Bill 152 which defined a quality public school education. Using the definitions created by the Legislature, R.C. Wood & Associates used four approaches (successful school district, professional judgment, evidence-based model, and advanced statistical analysis) to estimate the cost of an adequate education in Montana.

For the evidence-based approach, the researchers identified six strategies (preschool, full day kindergarten, full-time building principal, family outreach, professional development, and cost of technology) to be implemented. Research was given to support the implementation of the six strategies and an estimate of what each strategy would cost was provided. The researchers configured that "the cost would be an additional $20.6 million to the state legislature."[331] The researchers further explained that due to "the highly unique nature of Montana with its large number of small and isolated school districts the utilization of the evidence-based model does not lend itself to a robust explanation of future costs."[332]

To conduct the statistical analysis approach, a needs assessment was first conducted via the internet. All 331 administrative units were given an opportunity to complete the needs assessment. The return rate for the needs assessment was 83 percent. Response rates were

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[330] 109 P.3d 257 (Mont. 2004).

[331] R. Craig Wood, Donald Robson, Merle Farrier, Stephen Smith, Joyce Silverthorne, Michael Griffith, " Determining the Cost of Providing an Adequate Education in the State of Montana," (Oct. 2005): 20.

[332] Ibid.

shown by categories (i.e. organizational level, geographic region, and school size). The public was also given an opportunity to complete a shorter version of the needs assessment. Usable responses totaled 861.

For part of the cost analysis the researchers analyzed how closely Montana's schools were meeting the requirements of the Montana accreditation standards. Then areas identified in SB152 were analyzed to determine how schools were measuring up in the following categories: special education, Indian Education for All, qualified teachers and administrators, facilities, transportation, testing, and preservation of local control. The information that administrators had provided for each category were shared when applicable. Also, after each category, the researchers provided their recommendations if any changes needed to be made in order to support an adequate education.

One big deficit the researchers found was in the funding of at-risk students, particularly Native American students. Money ($100,000) was recommended to form a committee and create a plan and additional money ($5,000,000) was suggested to implement interventions. The researchers found that money had never been provided to support the Indian Education for All constitutional requirements. Therefore, the researchers designed a model that could be implemented in all schools for a total cost of $16,095,570. This is a start-up estimate and after the first year of implementation the researchers recommended actual spending data be collected and adjusted to continue to implement the program. At the end of the statistical analysis report, the researchers provided a spreadsheet where all additional costs to meet the requirements for SB152 were estimated. The total estimate was $34,360,345.

An earlier professional judgment study had been conducted by A&M and the researchers' goal was to build on the results of the previous study. First, a survey was conducted in order to

gather information from school districts on the following areas: student to teacher and staff ratios, per pupil costs for instructional supplies and student activities. The response rate for the survey was 61 percent and the results were given to the expert panel. There were fifteen individuals on the panel who were selected by the quality schools interim committee.

Several prototype schools (very small, small, medium, and large) were created for each level of school (elementary, middle, and high). "In order to determine the costs associated with different personnel for the prototype schools, the average salary information utilized in the A&M report was adjusted using the education growth factor."[333] Other components, such as instructional materials, equipment, technology, assessments, student activities, and security were also estimated by the expert panel. Then the expert panel estimated district costs. To do this, they analyzed education spending growth in Montana for the last thirteen years. "It was estimated that education-funding growth has been approximately 4.5 percent over the past thirteen years, and therefore the results of the A&M study were compounded at 4.5 percent for four years to arrive at the estimated costs for the 2005-06 school year."[334] After each component was estimated total spending was configured.

Next the expert panel identified and estimated the cost for the following cost factors and programs: at-risk students, summer and extended day programs, gifted and talented programs, and preschool. A summary cost table was provided at the end of the professional judgment report and the total additional cost was estimated at $328,917,906 which is a 27.4 percent increase.

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[333] Ibid, 91.

[334] Ibid, 93.

A separate professional judgment panel was created to focus on the American Indians and their achievement gap. A survey was distributed to twelve schools and five schools returned the surveys plus one additional school. Experts were invited to meet with the professional judgment panel to discuss closing the achievement gap of the American Indian students in Montana's schools. A model was created for the American Indian students. The strategies for the model were designed by the National Dropout Prevention Center/Network (NDPC/N). Fifteen strategies were selected by the panel. Projected additional costs were estimated at $15.7 million.

For the successful school district approach, the researchers did not use schools with American Indian populations at 50 percent or higher because a significant amount of money is spent to educate these students. Various performance measures were used to compare expenditures of successful schools and non-successful schools. After analyzing these data, the researchers found "expenditure levels for successful and non-successful schools vary widely depending on which performance measure is used."[335] The researchers "noted that the results on the norm-referenced test may well provide the most valid measure of a quality education"[336] due to the ability to measure data over three years as well as compare Montana students to students across the country. The projected additional cost using the successful schools method was $96.2 million.

Wyoming (November 2005)

In November 2005, Lawrence O. Picus and Associates prepared an adequacy report for the Wyoming Legislative Select Committee on Recalibration. Due to the court ruling in *State v.*

[335] Ibid, 133.

[336] Ibid.

Campbell County School District[337] at least every five years the Legislature must recalibrate the funding model for Wyoming's schools. "The current Block Grant in Wyoming was developed using the Professional Judgment approach."[338] The recalibration by Picus and Associates used a "similar approach, in that it identifies resources for an expanded set of prototypical schools, but uses evidence from research and best practice as well as the professional judgment of education leaders."[339] The adequacy standard used for the study was the Legislature's definition of what should be delivered to all Wyoming students which is referred to as the educational basket.

In the report recommendations and revisions to Wyoming's current funding practices such as summer school and class size were provided. Categorical aid programs were also identified and modified. For each recommendation the effect size was provided to support the proposal. Picus and Associates provided the research for their recommendations to the professional judgment panels who either concurred with the suggestions or proposed modifications. A separate professional judgment panel to discuss small schools and resources convened. In the appendix, Picus and Associates compared their recommendations to five other adequacy studies. They also presented research on why Wyoming should use a hedonic wage adjustment in their funding formula instead of a regional cost living index. Specific figures on how much more it would cost the state of Wyoming to fund all of the recommendations in the report was not provided.

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[337] *State v. Campbell County School District* 19 P.3d 518 (Wyo. 2001).

[338] Lawrence O. Picus, "An Evidence-Based Approach to Recalibrating Wyoming's Block Grant School Funding Formula," (November 30, 2005): 7.

[339] Ibid.

Kansas (December 2005)

Two cost study analyses needed to be conducted for/by the Kansas Legislative Division of Post Audit (LPA) as required from a 2005 Special Session. William Duncombe and John Yinger from the Center for Policy Research set out to answer the following question: "What should it cost school districts to meet the performance outcome standards set by the Board of Education?"[340] The researchers used a cost function approach with data produced by the Kansas State Department of Education that included five years (1999-2000 to 2003-2004). "The dependent variable used in the cost function is district expenditures per pupil...LPA selected a spending measure that included expenditures for six functional areas: instruction, student support, instructional support, school administration, general administration, operations and maintenance, and other."[341] The researchers averaged seven student performance measures (three reading exams, three math exams, and graduation results), each measure weighted equally.

The researchers estimated "a cost function for K-12 districts in Kansas using linear multiple regression technique."[342] "The coefficient for the outcome measure indicates that to increase student performance (as measured by reading and math test scores and the graduation rate) by a certain percent will require an almost equal percent increase in spending."[343] The researchers also found that "the cost of operating a school district is higher in small districts."[344] Three variables (fiscal capacity, competition, and factors affecting voter involvement) were included in the cost function model to measure efficiency.

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[340] William Duncombe and John Yinger, "Estimating the Costs of Meeting Performance Outcomes Adopted by the Kansas State Board of Education," (Dec. 2005): 1.

[341] Ibid, 7.

[342] Ibid, 16.

[343] Ibid, 21.

[344] Ibid, 19.

To determine the base cost per pupil, the researchers used three steps: set efficiency standards at 67 percent, set performance outcomes for reading, math, and graduation rates as specified by the Kansas State Board of Education, and allow variable spending for such things as enrollment size, population of disadvantaged students, and the costs of hiring teachers.

> The estimated cost to meet the 2004 standard is 5 percent above ($258 per pupil) the adjusted general fund budget per pupil in the General State Aid formula in 2005-06. The estimated cost to reach the performance outcomes in 2006 is 14 percent above ($709 per pupil), and in 2007 it is 23 percent above ($1,153 per pupil) the adjusted general fund budget per pupil in 2005-Using 2003-04 FTE, the differences between total estimated costs and the total adjusted general fund budget are approximately $115 million for 2004 outcomes, $315 million for 2006 outcomes, and $513 million for 2007 outcomes.[345]

Standards for 2005 and 2006 were the same and therefore only 2006 estimates were projected.

When examining the cost indices, the researchers found that poverty and enrollment size in districts has the greatest influence on cost differences. "The highest costs are estimated to be in large central cities (Kansas City and Wichita), and in small rural districts with above-average poverty."[346] The researchers also concluded that teacher salaries and bilingual population variations yielded less of an impact on education costs.

Kansas (January 2006)

The Kansas Legislative Division of Post Audit completed an input and an output-based adequacy study of K-12 education costs as mandated by the Kansas Legislature. For the input-based approach, eight prototype districts were created ranging in enrollment from 100 to 15,000. The method used is referred to as a modified resource-oriented approach. After creating the prototype districts resources were estimated for the prototype districts. Only resources needed to

[345] Ibid, 34.

[346] Ibid, 38.

provide what's mandated by State "statute or necessary to run a district operating at an above-average level of efficiency"[347] were estimated.

The types of staff needed to be allocated for the eight prototype districts was determined by examining other cost studies, reviewing staffing standards set by state and national associations, accrediting organizations, government agencies, and education journals, looking at current staffing in Kansas districts similar to the prototype districts, and "surveyed officials from eighty Kansas school districts to get their opinions about the types of positions they thought were essential to provide basic educational services."[348] Since an ideal teacher to student ratio has not been determined through research, three different class-size settings were created for the study (twenty students for all grades; twenty-five students for all grades; and eighteen in K-3, twenty-three in 4-12). Other staff positions (i.e. principal, assistant principal, library specialist, counselor, substitute teachers, technology specialists, human resources staff, school level clerical, and security) were allocated to the prototype districts after reviewing accrediting agencies standards, comparing Kansas districts, and analyzing historical staffing levels.

After allocating staff positions to the prototype districts, average salary costs were determined. Non-salary resources were also allocated to the prototype districts. Finally, the researchers plotted the costs of the eight prototype districts, "and determined a series of mathematical equations"[349] in order to be able "to predict the costs for other Kansas school districts."[350] Once the researchers "determined what the curricula and services mandated by

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[347] Legislative Division of Post Audit State of Kansas, "Cost Study Analysis – Elementary and Secondary Education in Kansas: Estimating the Costs of K-12 Education Using Two Approaches," (Jan. 2006): 17.

[348] Ibid, 119.

[349] Ibid, 122.

[350] Ibid.

State statute for regular education should cost [on a per student basis they] "plugged all 300 districts' 2004-2005 enrollment into the appropriate equation and came up with base-level costs and enrollment weighting per student for each one."[351]

For the output-based approach, consultants were hired "to perform the sophisticated statistical techniques involved in a cost function analysis that would estimate the cost of meeting the performance outcome standards adopted by the State Board of Education."[352] The specific details of the output-based approach are discussed prior to this study (Duncombe and Yinger, 2005).

For the 2006-07 school year using the input-based approach, an additional $316 million of foundation-level funding would be needed. Using the outcome-based approach for the same year, an additional $339 million would be needed. One explanation for the higher estimate using the outcome-based approach is that testing standards increase each year until the year 2013-14 and therefore the costs to meet the increased standards is greater. The biggest factor contributing to the additional cost to the foundation-level was the increase in funding for students in poverty. Other factors that also contributed were special education and regional cost estimates.

South Dakota (January 2006)

In January 2006, Augenblick, Palaich and Associates, Inc. (APA) prepared the report, "Estimating the Cost of an Adequate Education in South Dakota." The report was conducted for the Associated School Boards of South Dakota, which is an advocacy group, representing the South Dakota Alliance for Education. "The Alliance consists of the Associated School Boards

[351] Ibid.

[352] Ibid, 17.

of South Dakota, School Administrators of South Dakota, South Dakota Education Association, ESD+6, Middle Schools Organization, and the South Dakota Coalition of Schools."[353]

Adequacy was defined as "the costs school districts face in order to fulfill state and federal resource requirements and performance expectations."[354] Two methods were used in the study to determine the cost of an adequate education – the successful school district (SSD) approach and the professional judgment (PJ) approach. Input and output standards that the state had previously identified were used to estimate the cost of an adequate education.

The successful school district approach used "the 2003-04 actual performance of school districts – specifically looking for those districts that met the AYP (adequate yearly progress) performance standards for 2007-08."[355] The 2007-08 standard was used because no district was meeting the higher standards for future years. Forty-one districts were identified as successful and per student base cost for these districts was determined to be $4,717. Costs for special needs students are not included in this figure.

Professional judgment groups "focused on the resources needed for districts to meet performance targets in 2013-14."[356] Four types of districts were created – very small, small, moderate, and large. There were three types of panels – school-level (which consisted of three groups), district-level panels (which consisted of three groups), and an overview panel. "Panels had 6-8 participants, including a combination of classroom teachers, principals, personnel who provide services to students with special needs, superintendents, and school business

[353] John Augenblick, Amanda Brown, Dale DeCesare, John Myers, and Justin Silverstein, "Estimating the Cost of an Adequate Education in South Dakota," (January 2006): 1.

[354] Ibid, 1.

[355] Ibid, 6.

[356] Ibid, 6.

officials."[357] The cost per pupil in a large size school district was estimated to be $6,362. When accounting for special needs students, the number increases significantly depending on the severity of the disability and the size of the school district.

When looking at the different approaches and the estimates per pupil identified, "there is a 1.35 ratio in cost between the PJ and SSD base cost figures."[358] When comparing the actual cost that South Dakota spent per pupil to the estimated costs by the SSD and PJ approach, more money is needed by most of the districts to meet the adequacy standard. Of the 170 districts, 142 "districts would have needed a total of $133.6 million, or $1,148 per student, on average, to bring them up to the successful school district adequacy level."[359] Of the 170 districts, 161 "districts would have needed a total of $405.7 million, or $3,324 per student, on average, to bring them up to the professional judgment adequacy level."[360]

Arkansas (August 2006)

In August 2006, Picus and Associates completed the report, "Recalibrating the Arkansas School Funding Structure" for the Adequacy Study Oversight Sub-Committee of the House and Senate Interim Committees on Education of the Arkansas General Assembly. This study is an update of the adequacy study conducted by Picus in 2003. In the report, Picus and Associates stress the research based information they propose by stating:

> Our report's recommendations, if funded and implemented, would redirect school resources to those strategies for which there is evidence that they do work. As will be clear, each and every one of the proposals is backed by evidence on its effectiveness. If current and new funds in schools were used to implement these recommendations, greater student performance should result – Arkansas achievement test scores should rise –

[357] Ibid, 13.

[358] Ibid, 64.

[359] Ibid, 68.

[360] Ibid, 69.

showing that it is the way money is used in schools that makes the impact on student performance real and measurable.[361]

After the adequacy study in 2003, the Arkansas Legislature converted the school-based numbers Picus and Associates suggested "into a per pupil foundation program with the expenditure per pupil figure set at $5,400"[362] with other programs supplemented such as National School Lunch (NSL) program, English-Language Learning (ELL) students, and Alternative Learning Environment (ALE) students. The recalibration "report continues to use the per pupil approach established by the Legislature by recalibrating each element that formed the creation of the $5,400 figure and recalibrating the NSL, ELL and ALE programs."[363] In the report, Picus and Associates list each recommendation from the 2003 adequacy study, discuss if/how the Arkansas Legislature implemented the recommendation, presents current research that supports the recommendation, and then share their current recommendation (i.e. keep implementing it the same way, modify it in some way, etc.).

In summary, Picus and Associates proposed six recommendations:

1. A new per pupil figure of $5,864.
2. The $50 per pupil for professional development.
3. A transportation categorical program which would average $286 per pupil in 2007-08, but based on district's actual transportation expenditures in 2004-05 inflated up to a 2007-08 base, AND to be replaced by a standards-based formula in the future.
4. A "smoothed" NSL formula which would smoothly increase the teacher allocation from 1 for every 100 NSL students up to two when the concentration hits 70 percent, from 2 to 3 as the concentration rises from 70 to 90 percent, and 3 teacher positions for districts with an NSL concentration of above 90 percent.

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[361] Allan Odden, Lawrence Picus, and Michael Goetz, "Recalibrating the Arkansas School Funding Structure," (Aug. 2006): 16.

[362] Id, 18.

[363] Ibid.

5. A modestly increased ELL allocation from 0.40 positions for every 100 ELL students to 1 position for every 100 ELL students.

6. A revised ALE allocation now that the state counts ALE students in an FTE format.[364]

Nevada (August 2006)

In August 2006, Augenblick, Palaich, and Associates (APA) prepared a report for Nevada's Legislative Committee on School Financing Adequacy (the Committee). For the study adequacy was defined as "the cost of meeting state and federal resource requirements and student performance expectations, including those in Nevada's education accountability system and the state's federally-approved plan to comply with the No Child Left Behind Act (NCLB)."[365] The researcher used the successful schools and the professional judgment methods to determine the cost of an adequate education in Nevada. The researchers also integrated the evidence based approach by providing the professional judgment panels with two national experts who provided information on which resources according to research have been found to help improve student achievement. Additionally, the researchers integrated the statistical approach by taking into consideration inflation and cost differences depending on school/district size and location.

To implement the successful schools approach the researchers determined that they would identify high performing schools and not school districts due to the small number of school districts (seventeen) in the state of Nevada. In Nevada, "the state pays for the collection of In$ite® data, which offers school level information"[366] and APA used this information to determine the base spending levels for successful schools. APA decided to identify successful

[364] Ibid, 80.

[365] John Augenblick, Justin Silverstein, Amanda R. Brown, Douglas Rose, Dale DeCesare, and Amy Berk Anderson, "Estimating the Cost of an Adequate Education in Nevada," (August 2006): 1.

[366] Ibid, 10.

schools by determining which schools had students on track to meet future state and federal standards. More specifically, APA identified schools as successful by examining two criteria: English and math general student population performance objectives for the 2008-09 school year and English and math test scores for students with special needs for the 2005-05 school year.

For the first criteria, "APA used performance data for each school from the 2002-03, 2003-04 and 2004-05 school years to see if the school was on target to meet the 2008-09 objectives."[367] APA "did this by regressing the proportion of students making adequate yearly progress against time for each school and using the resulting formula to predict the school's 2008-09 performance. If the school was on target to meet the 2008-09 objectives they were deemed successful."[368] For the second criteria, APA analyzed English and math test scores of special education students, at-risk students, and English language learners. Six tests for each school were examined. To be labeled successful, schools had to meet the first criteria and also "meet the 2004-05 objectives for two of the six special population tests."[369]

A total of 118 schools were identified as successful. After determining the base spending for each of these schools, APA applied an efficiency screen in the following spending areas: instruction, administration, and operations and maintenance. To measure efficiency APA analyzed the number of personnel per 1,000 pupils for instruction and administration and excluded any school that had a figure one standard deviation above the mean or higher. For operations and maintenance APA examined spending per pupil and excluded any school that had spending one standard deviation above the mean or higher. After applying the efficiency screening, "APA was left with 101 schools for instruction, 93 schools for administration and 98

[367] Ibid, 11

[368] Ibid.

[369] Ibid.

schools for building maintenance and operations."[370] APA estimated the base cost for these schools to be $4,660 per pupil.

To implement the professional judgment approach, APA asked the professional judgment panels to not only determine the base cost for the average students, but to decide if costs should vary due to district size and estimate the resources needed to educate the following groups of students: special education students, English language learners, at-risk students, career and technical education (CTE) students. Three hypothetical school districts were created for the study – small, moderate, and large. Multiple panels were used in the study. Two panels convened to determine school-level resources, three panels met to review the work of the previous panels and then determined additional resources needed for the district, for special needs students, and for the CTE program and the final in-state "panel reviewed previous panel work, discussed resource prices, examined preliminary cost figures and attempted to resolve some of the inconsistencies that arose across panels."[371] A total of thirty-nine people participated in the professional judgment panels and were selected through a nomination process.

Two national experts were given Nevada's state standards and asked to identify personnel that would be needed to help Nevada's students meet the standards. Then "APA used the expert panel's work as a starting point to stimulate discussion within the professional judgment panels."[372] Capital, food services, transportation, community services, and adult education were excluded for the professional judgment analysis. After the panels completed their work, APA used statewide average salaries to cost out the personnel recommendations. APA found that

[370] Ibid, 13.

[371] Ibid, 21.

[372] Ibid, 26.

> in moderate size K-12 districts, combined school-level and district-level base costs are $7,868 per student. In addition, students with mild special education needs add $6,918, students with moderate special education needs add $10,050, and students with severe special education needs add $19,813. At-risk students add $2,256, ELL students add $4,426 per student, and CTE students require an additional $568.[373]

To determine a statewide Inflation Adjustment Factor, APA recommended using the Consumer Price Index (CPI) and data from the Council for Community and Economic Research (ACCRA). APA analyzed how school size impacts cost and found "that smaller schools – with fewer students to absorb and spread out the same fixed costs – are more expensive per student. Conversely, the largest schools – with greater economies of scale – have the lowest per-student costs."[374] The same relationship was found when APA analyzed district size and cost. Finally APA analyzed the cost of living across the state of Nevada to create a Location Cost Metric (LCM).

After APA configured the LCM, they then created charts to compare Nevada's current spending to the adequacy costs they estimated. They compared the successful schools figures and the professional judgment costs using the LCM and without using the LCM. The researchers found that using the successful schools figures without applying the LCM "school districts would have needed to spend $64.2 million more than what they were spending."[375] When applying the LCM to the successful schools figures, the researchers found an additional $55.7 million would be needed. Using the professional judgment estimates and not applying the LCM, the researchers found an additional $1,333.2 million would be needed to meet adequacy standards. When applying the LCM to the professional judgment estimates, the researchers determined an additional $1,320.0 million would be needed. The researchers explain that the

[373] Ibid, 35.

[374] Ibid, 64.

[375] Ibid, 77-78.

costs using the professional judgment approach are higher because they used the 2013-2014 standards to estimate the costs.

Washington (September 2006)

Picus and Associates completed an evidence-based adequacy study for the K-12 Advisory Committee of Washington Learns. Costs included in the study focused mainly on instructional costs (i.e. strategies, programs, and services). Central office staff and operations and maintenance functions were also addressed. Costs not included in the study were food services, debt services, and transportation. The researchers used several sources and created a definition of an adequate education. These sources included Washington's Essential Academic Learning Requirements, the standards set for the state testing system – the Washington Assessment of Student Learning (WASL), and the state standards developed to meet the No Child Left Behind law. In order for schools to meet the requirements of the adequate education definition, the researchers identified six core strategies that Washington schools should implement. The strategies identified were recalibrate goals for student learning, re-engineer schools, redesign teacher development, reinforce achievement for struggling students, retool schools' technology, and restructure teacher compensation.

The researchers provided examples of some Washington schools that were able to double the performance of students by using some, if not all, of the six strategies aforementioned. For their report, the researchers stated that resources were identified that would be needed for schools to double student performance. The researchers discussed the education production function debate among various researchers and concluded "that it is the way money is spent that will make the largest and critical differences."[376] Therefore, the researchers recommended the

[376] Allan Odden, Lawrence O. Picus, Michael Goetz, Michelle Turner Mangan, Mark Fermanich, "An Evidenced-Based Approach to School Finance Adequacy in Washington," (Sept. 2006): 20.

redirecting of resources rather than simply adding additional monies. First, the researchers provided general recommendations which were to continue to use a full-time equivalency (FTE) student count, implement a full-day kindergarten program, and create smaller schools (432 students for elementary schools, 450 students for middle schools, and 600 students for high schools).

Then the researchers provided recommendations for the personnel in the prototypical schools. These recommendations included class sizes of fifteen students for grades K-3 and twenty-five students for grades 4-12, "that elementary and middle schools receive an additional 20 percent of the number of core teachers for specialist teachers, and that high schools receive an additional 33 percent,"[377] providing 2.5 FTE instructional coaches for every 500 students, one tutor for every 100 students eligible for free and reduced price lunch, one additional teacher for every 100 English Language Learning (ELL) students, create and fund an extended day program to help students meet the academic performance standards, "include a summer school provision for 50 percent of all Washington adjusted free and reduced price lunch students in all grades K-12,"[378] staff Alternative High Schools with one teacher for every eight students, keep the current funding structure for special education, and funding the gifted and talented program with an allocation of twenty-five dollars per student. Other personnel recommendations focused on career and technical education, substitute teachers, student support/family-community outreach, aides, librarians, principal, and school site secretarial staff. For every resource identified by the researchers, the current Washington policy was stated, research was shared about this resource,

[377] Ibid, 33.

[378] Ibid, 47.

evidence supporting the researchers' recommendations was provided, and effect sizes for the major recommendations were given.

After the researchers addressed the personnel issues at schools, the next area they identified resources for was dollar per pupil elements. These elements included professional development, technology and equipment, instructional materials, and student activities. Finally the researchers discussed central office expenditures. A total per pupil cost to implement all of the researchers' recommendations was not provided.

Washington (September 2006)

Picus and Associates conducted a successful school district study for the Washington Learns K-12 Advisory Committee. The researchers initially met with the K-12 Advisory Committee and developed selection criteria for successful school districts. There were thirty-three academic criteria and three non-academic criteria. Of the thirty-three academic criteria used, twenty-seven criteria consisted of students' performance on the Washington Assessment of Student Learning (WASL), "a single learning growth index for each district for each of the three years,"[379] and "a single achievement gap index for each district for each of the three years." On-time graduation rate for the years 2002-03, 2003-04, and 2004-05 was the non-academic criteria selected. The Washington Learns Advisory Committee requested two different analyses – "One to evaluate districts using the NCLB Uniform Bar Goals in effect for the 2004-05 school year as the performance benchmarks, and a second using the 2007-08 Goals as benchmarks."[380] Also, districts that met a range of criteria were identified. Outlier districts (21 percent) were excluded from the study to avoid skewed results. "The final sample of districts consisted of 233 of the 296

[379] Mark Fermanich, Michelle Turner Mangan, Allan Odden, Lawrence O. Picus, Betheny Gross, and Zena Rudo, "Washington Learns: Successful District Study," (Sept. 2006): 4.

[380] Ibid.

school districts serving 946,059 or 99 percent of the students in Washington."[381] Expenditures included in the study were spending for the regular education program, general operations and maintenance, and school and district administration. Costs excluded from the study were food service, community services, adult education, capital costs, and debt cost services.

Of the 233 districts, five districts met all of the thirty-six criteria using the 2004-05 benchmarks. There were 140 districts that met twenty-four of the thirty-six criteria using the 2004-05 benchmarks. Using the performance benchmarks for the 2007-08 school year, "only twenty-six districts met at least twenty-four of the thirty-six criteria and only one district met all thirty-six of the criteria."[382] After identifying the successful school districts, the researchers then disaggregated the districts by poverty and locale and concluded "that districts with lower poverty levels serving non-urban populations were more successful in meeting the selection criteria."[383] "The districts that met all thirty-six criteria for success spent $6,789 per pupil. This compares to the state average spending of $5,422 per pupil."[384]

After the researchers identified the successful districts, they then used a purposive, non-random sample to determine what resources and practices were used at some of the schools. A total of thirty-one schools in nine districts were used for this part of the study which included one PreK-12 school, seventeen elementary schools, seven middle schools, and six high schools. "Two categories of interview protocols were developed: one was designed to collect data on school-level staffing resources and district-level professional development resources; and the second category of protocols was designed to glean the instructional vision and improvement

[381] Ibid, 5.

[382] Ibid, 7.

[383] Ibid, 8.

[384] Ibid, I-1.

strategies that resulted in increased student performance."[385] From these interview protocols, the researchers concluded "that the successful districts and corresponding schools studied were able to raise student performance by focusing all of their resources toward teaching and learning."[386] The researchers summarized six core elements of successful systemic reform:

1. "Focus on educating all students
2. Use data to drive decisions
3. Adopt a rigorous curriculum and align to state standards
4. Support instruction improvement with effective professional development
5. Restructure the learning environment
6. Provide struggling students with extended learning opportunities"[387]

Colorado (October 2006)

This report updated the adequacy study that Augenblick, Palaich, and Associates (APA) completed in 2003.[388] The update was completed for the Colorado School Finance Project (CSFP), an advocacy organization. To update the successful school districts approach, "APA identified 'successful' districts as those who were on target to have 100 percent of students score proficient or above on reading and math assessments by 2013-14."[389] Also, to be selected as a successful school district APA chose only those districts that had met Colorado's accreditation standards. Fifty-eight districts were documented as successful for the study. "A base cost figure was then identified for each district."[390] The base cost figure "does not include spending for at-risk students, special education students, ELL students, transportation, food service and

[385] Ibid, 21.

[386] Ibid, 22.

[387] Ibid, 23.

[388] John Augenblick and John Myers, "Calculation of the Cost of an Adequate Education in Colorado using the Professional Judgement (sic) and the Successful School District Approaches," (Jan. 2003).

[389] John Augenblick, Robert Palaich, and Associates, "Estimating Colorado School District Costs to Meet State and Federal Education Accountability Requirements," (Oct. 2006): 4.

[390] Ibid., 7.

capital."[391] Once the base cost for each district was configured, APA used the weighted average of the fifty-eight districts to compute the per-pupil cost which came to $5,821.

To update the professional judgment approach, APA convened two school level panels consisting of six to eight people with one panel concentrating on very small and small districts and the other panel focusing on moderate and large districts. Unlike in the 2003 study, APA "provided panels with a set of initial resources based on applying the results of the evidence-based approach, as it has been used in a couple of other states, to the hypothetical schools; panelists were free to use the evidence-based resource levels, modify them, or discard them entirely."[392] APA also convened two additional panels, "one composed entirely of people who provided services to students with special needs; and one composed entirely of school business officials."[393] After the panelists identified resources needed, APA updated salaries by using 2004-05 statewide average salaries. Separate weights were configured for special needs students (mild, moderate, and severe), at-risk students, ELL students, and for districts of different sizes.

When APA compared the base cost they reached in this study compared to their previous study they found for the successful schools approach "the 2004-05 figure is about 33 percent higher in smaller districts but only about 21 percent higher in the larger districts."[394] When comparing the base cost using the professional judgment model to the their previous study, APA found "the 2004-05 figure is 14-16 percent higher among very small districts but only six percent higher among moderate and large districts."[395]

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[391] Ibid., 7.

[392] Ibid., 8.

[393] Ibid., 8.

[394] Ibid., 9.

[395] Ibid., 9-10.

At the conclusion of their study, APA compared their estimate of full adequacy funding to Colorado's expenditures for the 2004-05 school year. Using the successful schools approach, APA configured the total cost of adequacy to be $8,214 per student whereas the actual spending was $7,345 per student. For the professional judgment method, APA configured the total cost of adequacy to be $10,191 per student. Charts were provided at the end of the study to demonstrate which districts had spent above or below the figure APA had determined as adequate.

Minnesota (November 2006)

At the request of P.S. Minnesota, an advocacy group, APA conducted an adequacy study using the professional judgment approach and the successful school district model. For the study, APA defined adequacy as "sufficient funding so that schools and districts have a reasonable chance to meet state and federal student performance expectations."[396]

For the successful school district model, APA set two standards that districts would need to meet in order to be identified as successful. The first criteria focused on districts reaching the standards set for the 2008-09 school year. "APA used performance data from the 2002-03, 2003-04, and 2004-05 school years to see if the district's performance trend was on target to meet the 2008-09 objectives."[397] This was done by "regressing the proportion of students making AYP against time for each district and using the resulting formula to predict 2008-09 performance."[398] The second criteria examined how well special needs populations were doing to meet the 2004-05 AYP goals in each district. "To be considered successful, a district had to meet the first criteria (based on the 2008-09 AYP goals) and at least two of the six special

[396] Justin Silverstein, Doug Rose, and John Myers, "Estimating the Cost of an Adequate Education in Minnesota," (Nov. 2006): 4.

[397] Ibid, 10.

[398] Ibid.

population tests had to meet the 2004-05 performance objectives."[399] Forty-five of Minnesota's 341 districts were identified as successful using the two standards set by APA.

After identifying the 45 successful school districts, APA worked with the Minnesota Department of Education to determine the base student spending for the 45 districts. After the base spending for each district was determined, APA then used efficiency screens for three areas – Instruction, Administration, and Building Maintenance and Operations. For instruction APA

> excluded any district with a teachers-per-1,000-weighted-pupils figure that was one standard deviation above the mean or higher. The administration efficiency screen relied on the number of administrators per 1,000 weighted pupils and again excluded those districts with a figure above one standard deviation above the mean. Finally, for building maintenance and operations APA excluded any district whose spending per pupil in the category was one standard deviation above the mean or higher.[400]

After using the efficiency screens, there were 38 districts identified as successful for instruction, 39 districts for administration, and 43 districts for building maintenance and operations. APA then configured base costs for each area and estimated $5,359 for the student base cost for the 2004-05 school year.

For the professional judgment approach, APA used a previous professional judgment study for the School Funding Task Force that was conducted in 2004 by Management, Planning, and Associates (MAP). This was done because P.S. Minnesota requested it. In the MAP study, a base cost per pupil was not estimated and resources for special needs students were not identified. A weight of 1.9 was chosen by MAP for special education students and after reviewing national research and other APA professional judgment studies, APA chose a weight of 1.0 for special education students. APA configured a base cost of $5,938 for the 2004-05 school year. Other weights APA chose were .75 for at-risk students and .90 for LEP students.

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[399] Ibid.

[400] Ibid, 11.

Two other statistical methods were also used in the professional judgment study in order to account for expenditure differences in districts. To adjust for cost of living expenses, APA used a Location Cost Metric (LCM). To adjust for district size differences, APA used averages from other adequacy studies that had configured higher costs for small and large districts since the MAP study had not examined this area.

In sum, the successful school district approach estimated that the Minnesota Legislature should spend $1.05 billion for the 2004-05 school year which would be an increase of 18 percent over the current 2004-05 spending. For the professional judgment approach, APA determined $1.79 billion should be spent which is a 30 percent increase over the 2004-05 current spending level.

Montana (January 2007)

The Montana Quality Education Coalition, an advocacy organization, contracted with Augenblick, Palaich, and Associates, Inc. (APA) to conduct an adequacy study for the state of Montana. APA previously completed an adequacy study for several advocacy organizations in 2002 and this study updated that work. The professional judgment approach was the main methodology utilized to complete the study. A limited successful school district study was also conducted. Since the testing system in Montana had not been in place for several years, a complete analysis using the successful school district approach was not possible and therefore APA did not provide base cost figures using this method. Since APA's study in 2002, the Montana legislature has created a definition of a quality education for elementary and secondary schools. This definition along with "the state's plan to comply with the federal No Child Left Behind Act (NCLB), which includes 100 percent of students meeting reading and math

proficiency targets by 2013-2014, was the basis for the cost estimates"[401] were used for the study. Costs of transportation, capital, food services, community services, and adult education were not included in the study.

For the successful school district approach, two years of testing data (2003-04 and 2004-05) were available. "APA applied two measure to analyze districts:

1. A 'growth' trend standard. This identifies districts or systems whose aggregate test scores are on a trajectory to meet a future performance goal.
2. An 'absolute' standard. This identifies only those districts or systems that *currently meet* a future performance standard."[402]

Two growth objectives were identified by APA – 100 percent of students attaining proficiency in math and reading and "2009-10 proficiency targets of 80 percent of students in reading and 73 percent of students in math."[403] For the first objective, "APA identified 78 school systems that were on pace to meet the 2013-14 standard of 100 percent proficiency."[404] For the second objective, APA identified 91 systems that were on pace to meet the identified 2009-10 standard."[405] APA set the absolute standard the same as growth objective two. Since so few districts met this target, APA did not present the specific numbers because APA believed the results to be misleading. Using the 91 systems identified for growth objective two, APA concentrated on the base cost spending per pupil of these systems. Overall APA found that

[401] Justin Silverstein, Douglas Rose, Robert Palaich, John Myers, and Amanda Brown, "Estimating the Cost of an Adequate Education in Montana," (Jan. 2007): i-ii.

[402] Ibid, 9.

[403] Ibid, 10.

[404] Ibid.

[405] Ibid.

"smaller districts generally spend more per pupil, with the costs going down as district size grows."[406]

First APA created four hypothetical school districts for the professional judgment panels. The breakdown of the districts was as follows: a small district with under 500 students, a moderate district ranging from 501 to 1,200 students, a large district ranging from 1,200 to 3,000 students, and a very large district with over 3,001 students. To select participants for the professional judgment panels, APA solicited help from leaders of the state's major education associations. There were a total of seventy people who participated in the panels. There were nine panels with six to ten people serving on each panel. APA formed different levels of panels. Four different school level panels were created to identify resources in the four hypothetical school districts. Two separate special needs panels were formed. One of these panels focused on resources for special needs students in the small and moderate sized districts and the other panel focused on resources for special needs students in the large and very large sized districts. The special needs panels also included resources needed at the district level for the special needs pupils. District panels reviewed the work of the school level and special needs panels and also included resources needed at the district level for the regular education students. One district panel focused on resources for the students in the small and moderate sized districts and the other district panel focused on resources for the students in the large and very large sized districts. The statewide panel reviewed the work of all of the panels and made recommendations about salaries.

The resources that panelists examined included personnel, supplies and materials, non-traditional programs and services, technology, other personnel costs, and other costs. "In the

[406] Ibid, 12.

case of several categories of personnel (teachers, principals, instructional leaders, teacher tutors) APA provided panel members with starting figures that reflect research results that evidence-based (EB) analyses have used in estimating adequacy."[407] "Since the research based figures do not provide a complete picture of necessary resources, APA provided the figures primarily as a starting point to stimulate discussion and allowed panelists to modify the figures as they saw fit based on their expertise and experience."[408] After the panels completed their work, APA configured the resource costs. To configure salaries, APA "used the results of a statewide salary survey conducted by the Montana School Boards Association (MTSBA) which asked districts to provide the 2006-07 salaries for the relevant positions."[409] APA also compared Montana teachers' salaries to those of five neighboring states and "concluded that a salary increase of 6.1 percent was needed to make the average adjusted Montana teacher salary competitive with that of the comparison states."[410]

The researchers estimated that the average base cost per pupil for a small district was $11,682, for a moderate sized district was $9,459, for a large sized district was $9,028, and for a very large district was $9,030. The researchers also configured the added costs for educating special needs students, at-risk students, and LEP students. For a moderate sized district, "students with mild special education needs add $8,648, students with moderate special education needs add $12,592, and students with severe special education needs add $29,768. At-risk students add $3,720, and LEP students add $7,181 per student."[411] The researchers

[407] Ibid, 18-19.

[408] Ibid, 19.

[409] Ibid, 20.

[410] Ibid, 25.

[411] Ibid, 27.

compared Montana's current spending to their recommendations and estimated an increase of 61 percent in spending for K-12 school systems and an increase of 91 percent in spending for K-8 school systems.

Washington (January 2007)

David Conley and Kathryn Rooney were the primary researchers for this adequacy study which was conducted by the Educational Policy Improvement Center (EPIC), which is an advocacy organization. "The goal of this study was to determine the level of educational expenditure necessary to make ample provision for the education of all students, providing all students with the skills to meet long-term academic standards, pursue additional learning beyond high school, and become productive citizens and contributing members of society."[412] The researchers defined an adequate education as

> one that provides the required resources for all students to achieve the state's goals and to meet the expectations citizens have for their schools. Those goals include the standards established to fulfill the requirements of the 1977 Basic Education Act (as amended), the 1993 Education Reform Act (HB 1209), and the federal education goals for which Washington agrees to strive when it accepts federal funds.[413]

The researchers used a hybrid approach to complete the study utilizing elements from the successful schools, evidence-based, professional judgment, and cost function methods. First researchers created three prototype schools – an elementary, middle, and high school after analyzing expenditure data and enrollment and staffing information from 2004-05. Then principals at improving schools and other education administrators were asked to look at the prototype schools and provide recommendations for changes so the prototype schools resembled expenditure patterns of the improving schools. The information was gathered using a survey.

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[412] David T. Conley and Kathryn C. Rooney, "Washington Adequacy Funding Study," (Jan. 2007): 1.

[413] Ibid, 1.

The purpose of the survey was to obtain information about expenditures at the improving schools. Eighteen surveys were returned and the researchers used the information from the returned surveys to adjust the baseline model for expenditures.

A survey was also distributed to three school business managers. The survey provided data regarding the three baseline prototype schools – elementary, middle, and high school and the managers were asked to examine the expenditure patterns of the models and use their experience to determine how accurate the expenditure patterns were. Researchers used the information gathered from the surveys "to confirm the funding allocation in some categories and to adjust other categories. The study adjusted expenditure categories both up and down as a result of the survey input. However, none of these changes affected the bottom line expenditure levels."[414]

Improving schools were identified using several criteria. Performance data on the Washington Assessment of Student Learning (WASL) in math and reading had to be available for the following school years: 2002-03, 2003-04, and 2004-05 to ensure the students were constantly demonstrating high achievement. Another criterion was schools had to have at least forty students in a grade. Other criteria included no special admissions requirements, gave traditional grades, and made Adequate Yearly Progress (AYP) in 2004-05. The highest performing schools in each low-income student decile were selected in order to get a representative cross section of schools. Using the above criteria forty-two elementary schools, twenty-nine middle schools, and twenty-six high schools were identified as improving schools.

For the next phase of the study, the researchers used the evidence-based approach by conducting a literature review in order to identify intervention strategies that have been shown to

[414] Ibid, 61.

improve student achievement. Budget simulations were created for each prototype school. The panelists were selected from recommendations from the Washington Association of School Administrators (WASA). Also, all principals from the identified improving schools were invited to participate. Fifty people participated in the professional judgment process either by completing budget simulations or being involved in meetings. "Researchers asked professional judgment panelists to use the simulations to specify adequate compensation for each staff position, select any necessary educational interventions, as well as adjust staffing and other expenditures to adequate levels."[415]

> The results from the individual budget simulations were aggregated, analyzed, and then presented to two review panels of Washington educational administrators, most of whom had completed one of the simulations. Researchers facilitated two daylong meetings of panelists, one in Spokane and one in Renton. Panelists discussed and debated the results from the simulations, offered feedback on what should be included in an adequate education in Washington, and further considered the cost-effectiveness of the proposed adequacy changes in relation to the state's ability to fund its public education system.[416]

The researchers provided a list of the all the interventions selected for the elementary, middle, and high school prototype schools. Then each intervention was presented with the evidence supporting the use of the intervention and what additional cost, if any, was required to implement the intervention.

To determine salary levels, the "researchers performed a comparable wage analysis and hedonic teacher wage analyses."[417] The researchers explained that they chose to use the comparable wage approach because it can be "used to determine the level of compensation needed to recruit and retain the best teachers in a competitive labor market, while the hedonic

[415] Ibid, 46.

[416] Ibid.

[417] Ibid.

wage approach is used to determine the level of compensation necessary to give all schools an equal chance to employ the best teachers."[418]

Lastly, the researchers used the cost function approach to determine cost differences for schools with special demographics such as a large population of low-income students or a very low enrollment. "The study's overall finding is that the per student expenditure level needed to provide an adequate education to every K-12 Washington student is $11,678"[419] in 2005 dollars which comes to an additional $3,613 per student.

California (March 2007)

The Public Policy Institute of California (PPIC) led by researcher, Jon Stonstelie, conducted an adequacy study for the Institute for Research on Education Policy and Practice, Stanford University, which was carried out at the request of the Governor's Committee on Education Excellence. The researchers used a modified professional judgment approach for the study. Rather than being able to create hypothetical schools with an unlimited budget and unaware of the resource costs, the participants were presented with budget simulations that included a fixed budget and were informed what the resources would cost. Additionally, hundreds of participants were chosen to create budget simulations and those participants worked individually and were not expected to reach a consensus on resources as is customary with the traditional professional judgment method.

The budget simulations included resources needed for regular education at a school, such as teachers, administrative staff, and support staff. The simulations did not include special education students. Three different simulation scenarios were created – an elementary school, a

[418] Ibid, 100.

[419] Ibid, 115.

middle school, and a high school. Participants were given a spreadsheet to complete the budget. Each line on the spreadsheet included "a resource and the cost of a unit of that resource. The spreadsheet also specifies a total budget, and participants are asked to choose the units of each resource that would maximize the academic achievement of the school's students."[420] The spreadsheets contained many categories of resources including "teachers, principals, assistant principals, clerical office staff, aides, counselors, burses, librarians, security officers, technology support staff, tutors, and academic coaches."[421] Instructional computers were also included for the simulations. The following areas/resources were not included for the simulations: special education, instructional materials, transportation, maintenance and operations, extra-curricular activities, and district administration. Each participant completed two different budget scenarios.

After completing the budget simulation, participants then predicted student's achievement in the school. "For all three versions of the simulation, participants are asked to predict the Academic Performance Index (API) of the school, the measure of academic achievement in California's accountability system."[422] In addition to the API prediction, in middle school participants also predicted a proficient score or higher on the California Standards Mathematics Test; for high school, participants also predicted the amount of ninth grade students that would graduate in four years. The API is "a weighted average of students' scores on a battery of statewide achievement tests."[423] The state legislature has established a goal of 800 API for each school. The No Child Left Behind (NCLB) standard is for 100 percent of students

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[420] Jon Sonstelie, Irene Altman, Sarah Battersby, Cynthia Benelli, Elizabeth Dhuey, Paolo Gardinali, Brad Hill, and Stephen Lipscomb, "Aligning School Finance with Academic Standards: A Weighted-Student Formula Based on a Survey of Practitioners," (Mar. 2007): 6.

[421] Ibid, 13.

[422] Ibid, 6.

[423] Ibid, 15.

to be proficient in English and mathematics which equates to an API higher than 875 which no school is meeting. "About a quarter of California's public schools have an API of 800 or better."[424] The researchers used the goal of 800 API for the budget simulations.

Participants were provided descriptions of hypothetical schools with different student characteristics in order to compare how the student characteristics affected resource choices and API predictions. The four characteristics included: "enrollment, percent of students participating in the free or reduced price lunch program, percent of students classified as English language learners, and the average API of feeder schools (for middle and high school simulations)."[425]

Although participants were not asked to calculate resources for special education students, the researchers made two adjustments for special education students. "First, the budget is increased for the additional services special education students require."[426] This number was configured using the California Special Education Management Information System (CASEMIS) which provides average figures for disabilities. The researchers estimated the average cost for educating a student with special needs was $870 per student. "Second, the API prediction is lowered to reflect the reality that students with disabilities do less well, on average, on the standardized tests used to calculate the API of a school."[427]

Schools were selected using stratifies random sampling. Then principals or teachers were selected to participate. Principals of selected schools chose a teacher to participate so that process did not provide a random sample of teachers. Superintendents of schools chosen were asked to participate. In all 568 people completed the simulations which included teachers,

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[424] Ibid, 18.

[425] Ibid, 23.

[426] Ibid, 24.

[427] Ibid.

principals, and superintendents. Participants were sent a letter to complete the simulation on a web site, were allowed three weeks to do the simulation, and were paid $250. Each participant completed a different simulation.

The researchers configured other school district costs for areas such as transportation, district administration, and maintenance and operations. They used actual expenditures of school districts from 2003-04 school year, configured the costs for average school districts and then adjusted expenditures based in the specific characteristics of a district. The researchers also adjusted for population density, regional salaries, and district level special education costs. The average cost per pupil was estimated at $9,912. This figure used an API of 797; the researchers' original goal was an API of 800. The additional cost to the state was estimated at $17 billion which was more than a 40% increase. Gradual increases in funding were recommended as an immediate increase of that magnitude was unrealistic.

California (March 2007)

The American Institutes of Research (AIR) conducted a seven-month adequacy study using the professional judgment approach. The AIR team compiled information from the California Department of Education's Accountability Progress Report to define adequacy, identify target levels, and create a Goals Statement for the professional judgment panels to use. The 2011-2012 proficiency standards were used as a benchmark. To find highly qualified educators to participate in the professional judgment panels, AIR used two approaches to identify the educators: "individual educators associated with schools that have been identified through a series of separate AIR studies as high performing"[428] as well as "individual educators who were nominated by participants in the 'Getting Down to Facts' study group, county superintendents,

[428] Jay Chambers, Jesse Levin, and Danielle DeLancey, "Efficiency and Adequacy in California School Finance: A Professional Judgment Approach," (Dec. 2006): 16.

and numerous professional education agencies throughout the state."[429] Eighteen educators were chosen to serve on the professional judgment panels. Two independent professional judgment panels of nine educators each were used in the study.

First the panels were asked to create a base model instructional program for a typical California elementary, middle, and high school (specifically a school with median percentages of students receiving free- and reduced-price lunch, English Language Learners, and students receiving special education services and at the median school size).[430] Once the instructional programs were created, panelists were told to identify the resources needed to implement the programs. After creating a base model the panels were asked to create models for elementary, middle, and high schools with high and low poverty levels. Then the two professional judgment panels were divided into three separate sub-panels in order to create programs for the various demographics found at California schools (i.e. English Language Learners, special education students, and different size schools). Finally the full professional judgment "panels were given the opportunity to review the work completed by the sub-panels and make modifications in light of more specified deliberations."[431]

The researchers acknowledged the fact that specific types of districts such as urban or rural were not identified for the study due to budget constraints. The researchers also noted that "neither panel had sufficient time to address fully the issues of multiple non-English languages served by ELL programs, varying disability compositions among special education students, and varying school sizes."[432] The researchers created equations to configure the costs of the

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[429] Ibid.

[430] Ibid, 11.

[431] Ibid., 11.

[432] Ibid., 33.

professional judgment panels' recommendations. "The results showed, all else being equal, higher per-pupil costs for schools with greater numbers of students in poverty, requiring ELL services, or eligible for special education services."[433] Schools with more students living in poverty showed dramatic increases on a per-pupil basis. For example, an elementary school with a high poverty level (90th percentile) "per-pupil expenditure is 34 percent higher than a school with average poverty."[434]

Since the panels were asked to determine resources at the school level only, the AIR team then computed district costs (central administrative functions, maintenance and operations, and transportation) using fiscal data from the CDE so that current expenditures could be compared to the results of the professional judgment panels. A comparable wage index (CWI) was incorporated in order to adjust "for geographic variations in the cost of school personnel."[435] The researchers estimated "that the costs of an adequate education in California will require an additional investment of somewhere between $24.14 and $32.01 billion which represent a stunning increase in spending of between 53 to more than 70 percent"[436] for the 2004-2005 school year.

Rhode Island (March 2007)

In 2007, R.C. Wood & Associates conducted an adequacy study for the state of Rhode Island. The researchers prepared the report for the Joint Committee to Establish a Permanent Education Foundation Aid Formula for Rhode Island. The four methods to determine adequacy

[433] Ibid., 36.

[434] Ibid., 35.

[435] Ibid., 41.

[436] Ibid., 2.

(successful schools, cost function, professional judgment, and evidenced-based) were used in the study.

For the successful schools method, the researchers did not include transportation and facility costs. An inflation rate of 11.7 percent was applied to expenditures for the 2004-05 in order to estimate the costs for the 2007-08 school year. "This inflation rate is based on the historic comparable wage index increases in Rhode Island."[437] Outliers were removed from the study to reduce distortion of the results. The outliers removed were the "schools with the top and bottom 5 percent in expenditures for each group."[438]

The researchers created discount rates to account for differences in student populations. Two different discount rates were used in the study. For the first discount rate, the researchers determined English language learners and free and reduced price lunch students cost 25 percent more to educate and special education students cost 100 percent more. For the second discount rate, English language learners and free and reduced price lunch students cost 40 percent more to educate and special education students cost 110 percent more. Schools were considered successful if students were meeting the 2008 outcome standards. The researchers found "the required increase in funding based on the application of discount rates, and then comparing successful schools to school average percentages ranges from $56.7 to $128.3 million."[439]

Data for the Cost Function approach "and for Successful Schools analysis were drawn from the downloadable Microsoft Access format files of detailed budget and actual expenditure data from Rhode Island's recent implementation of IN$ITE financial analysis software."[440]

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[437] R.C. Wood & Associates, "State of Rhode Island Education Adequacy Study," (March 2007): 26.

[438] Ibid.

[439] Ibid, 43.

[440] Ibid, 45.

Student demographic data and school level performance outcome data were obtained from RIDE. Three years of data from 2002-03 to 2004-05 were used for the cost function study. The researchers compiled the school level expenditures per pupil for 297 schools in Rhode Island. Since Rhode Island is considered a single labor market, "there is no need to account for regional wage variation from one side to the other of the state."[441] "In addition, given the state's average population density across counties, there is little need to account for the role of school or district size in influencing costs"[442] except in a few cases.

The researchers chose to use stochastic frontier cost functions in order "to estimate the relationship between outcomes and spending, given student and school characteristics."[443] The researchers chose not to use their "methods to compare or evaluate school efficiency, and instead to use the methods to derive reasonable predictions of the costs of producing desired outcome levels."[444] Using the cost function approach, the researchers found that it would cost an additional $42.4 million for students to reach the 2008 proficiency targets.

For the professional judgment approach, nine prototype schools were created – small, medium, and large elementary, middle, and high schools. The researchers surveyed all the principals in the state of Rhode Island. The principals "were provided a survey with their corresponding prototype school, and asked to provide input on what they considered to be the required adequate inputs. Overall, 148 principals (46 percent) responded."[445] To increase their sample size, the researchers also created two expert panels and a district panel. The participants

[441] Ibid, 46.

[442] Ibid, 47.

[443] Ibid, 51.

[444] Ibid, 53.

[445] Ibid, 60.

for the first expert panel were invited by "the Joint Committee with input from various education entities in the state of Rhode Island."[446] For the district panel, all school superintendents and their staff were asked to participate. The participants for the second expert panel were principals from high performing schools, "along with recommendations from the Rhode Island Principals Association."[447] The researchers explained that "the research protocol averages the results of the two expert panels and thus provides the most valid information."[448]

The researchers provide a section to explain how they configured their input costs such as teacher salaries, principal salaries, teacher aides, substitutes, office staff, meal preparation, custodians, and other costs. For each school level (elementary, middle, and high school) and school size (large, medium, and small), the researchers provide a chart of the recommended resources and calculate a total per pupil cost. Then the actual expenditure for the school type and size is given to compare the prototype estimates. The range was from $11,380 to $13,931 per pupil. The researchers estimated that to fund the prototype schools would require an additional $153.5 million which was an increase of 8.6 percent. The expert panel participants also recommended funding for students who were not making sufficient progress and the researchers explain how they estimated the additional funding and determined an additional $51.3 million would be needed to help these students.

For the evidence-based method, the researchers discuss a brief summary of educational strategies and concepts that appear to have the most impact on helping students improve and for each program, the effect size is given. Due to criticisms by experts of the evidence-based method, the researchers explain that they "believe it is inappropriate and invalid to estimate costs

[446] Ibid.

[447] Ibid.

[448] Ibid.

using this approach."[449] However, the researchers did recommend the state fund pilot programs for the following areas: small group tutoring, enhanced technology usage, drop out prevention and career prep, early grade literacy and math, and education of English language learners. These areas were chosen because there has been strong evaluation standards met with these strategies. They also emphasize the importance of the state creating a strong evaluation system in order to measure the results of these pilot programs. Additional funding of $25 million was recommended for the pilot programs and $10 million for the program evaluation infrastructure. Since there has been strong evidence showing the benefits of full-day kindergarten the researchers recommended additional funding so that all Rhode Island students can attend full-day kindergarten. The cost for this was estimated at $23.35 million.

Wisconsin (March 2007)

In March 2007, Allan Odden, Lawrence Picus and Associates prepared an adequacy study for the Wisconsin School Finance Adequacy Initiative, an advocacy organization. The researchers used the evidence-based approach to estimate the cost of an adequate education in Wisconsin. The goal of this study was to configure an "adequate cost figure [that] will set a target for what the state should fund for K-12 education with a combination of state and local funds to allow all districts and schools to double student performance and dramatically reduce the achievement gaps."[450]

In the study, the researchers "redesign strategies, programs, and services covering expenditures for the instructional, instructional support, pupil support and site administration

[449] Ibid, 80.

[450] Allan Odden, Lawrence O. Picus, Sarah Archibald, Michael Goetz, Michelle Turner Mangan, and Anabel Aportela, "Moving From Good to Great in Wisconsin: Funding Schools Adequately And Doubling Student Performance," (March 2007): 8.

functions."[451] The researchers defined adequacy using Wisconsin's Academic Standards, a proficient score on Wisconsin's state test "(with the proficiency standard calibrated over time to those of the NAEP),"[452] the standards set by the state's accountability system as well as No Child Left Behind, and reasonable funding for resources. General recommendations the researchers made were for the state to fully fund preschool for low-income three and four year olds, use an FTE student count but create a simpler system for student counting, continue the full day kindergarten program, and create schools within a school for those schools above the suggested enrollment (432 for elementary, 450 for middle school, and 600 for high school). The prototype school sizes used in the study was 432 for elementary school, 450 for middle school, and 600 for high school. For each recommendation, the researchers explained Wisconsin's current policy if there were one and provide research to support the recommendation.

The researchers also made recommendations for the personnel elements in prototypical schools. Class sizes were recommended to be fifteen for K-3 and twenty-five for 4-12. The researchers recommended "that elementary and middle schools receive an additional 20 percent of the number of core teachers for specialist teachers, and that high schools receive an additional 33 percent, in order to teach specialist classes and also to provide time for teachers to engage in collaborative planning and preparation as well as job-embedded professional development."[453] Allocating instructional coaches ("2.5 FTE instructional coaches for a school of 500 students, or 1 instructional coach for every 200 students"[454]) was recommended. For struggling students,

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[451] Ibid, 11.

[452] Ibid, 48.

[453] Ibid, 63.

[454] Ibid, 64.

specific extra-help programs (tutoring, additional teachers for English language learners, extended day programs, and a summer school programs) were discussed. Creating an alternative high school was also suggested. Fully reimbursing districts using state funds for educating special education students was recommended, providing $25/ADM for gifted and talented programs, "weight career and technical education students an additional 0.3 for smaller class sizes, and to provide a sum of money, approximately $7,000, for every career and technical education teacher"[455] were also recommended. Other personnel recommendations covered the following areas: substitute teachers, student support/family outreach, aides, librarians, principals, and school site secretarial staff.

After providing their recommendations, the researchers presented a chart with the estimated effect size for each major recommendation. The researchers provided recommendations for dollar per pupil elements as well. These areas were professional development, technology and equipment, instructional materials, student activities, and supervisory and safety personnel. A section was included in the study for central office expenditures including the following areas: central office administration, operation and maintenance, food services, transportation, legacy health benefits, and debt service. Charts to summarize the resource and personnel recommendations for the prototype elementary, middle, and high school are provided.

Since Wisconsin had many districts that did not match the description of the prototype schools, the researchers provided recommendations on how to fund small schools and adjust for small districts, as well as costed out their recommendations. The average per pupil cost was estimated at $9,820 (where the base funding equaled $8,520 and the categorical programs

[455] Ibid, 85-86.

equaled $1,300). A simpler approach was also estimated at $8,400 per pupil, with several add-ons for special needs students. The estimated additional cost was $786 million or an increase of 9.2 percent.

Pennsylvania (November 2007)

Augenblick, Palaich, and Associates (APA) completed an adequacy study for the Pennsylvania State Board of Education in November 2007. The professional judgment approach, successful school district approach, and the evidence-based approach were used for the study as requested by the Pennsylvania State Board of Education. Additionally, APA had researchers from New York University conduct a cost function analysis "to statistically analyze data to see how spending relates to student performance."[456] The performance targets used for the study were the targets already set by the Pennsylvania State Board of Education which are all students (100 percent) mastering state standards in twelve academic areas and all students (100 percent) achieving proficiency in math and reading by 2014.

For the successful school district approach, APA used an absolute standard and a growth standard to identify successful school districts. For the absolute standard, APA used the performance targets for 2012 set by the state which "require 81 percent of students to score proficient or above on reading assessments and 78 percent to score proficient or above on math assessments."[457] This standard was set assuming that students who met this target were on track to reach the 2014 target. The growth standard "identifies districts whose *year-to-year growth* in PSSA [Pennsylvania System of School Assessments] test scores suggests that they will have 100

[456] John Augenblick, Robert Palaich, and Associates, Inc. "Costing Out the Resources Needed to Meet Pennsylvania's Public Education Goals," (Nov. 2007): 5.

[457] Ibid, 6.

percent of students scoring proficient or above by 2014 in both reading and math."[458] Using these standards eighty-two districts were identified as successful districts. APA then analyzed the efficiency of the eighty-two districts in three areas: instruction, administration, and maintenance and operations. Then APA identified the school districts that were deemed low spending and efficient and interviewed the superintendents in those districts to determine the methods used in the districts.

For the professional judgment approach the performance targets of 100 percent of students mastering state standards in twelve academic areas achieving proficiency in math and reading by 2014 was used. Five hypothetical school districts were created for the study: very small, small, moderate, large and very large. Sixty-six people participated in the professional judgment panels with five to eight people serving on each panel. Participants were chosen for the panels after the State Board of Education received recommendations from education organizations, colleagues, advocacy groups, and self-nominations. Three panels were created that focused on identifying resources for the five hypothetical school districts. Two panels focused on resources for the special needs students which included poverty, gifted, second language learners, and special education. Four district level panels convened and reviewed the other panels' recommendations and added district level resources. Philadelphia was used as its own district because of its unique characteristics and two panels convened to identify resources for this school district. A "statewide panel reviewed the work of all earlier panels, discussed resource prices, examined preliminary cost figures, and attempted to resolve some of the inconsistencies that arose across panels."[459] The resources that were examined by the panels for

[458] Ibid.

[459] Ibid, 14.

the study were personnel, supplies and materials, non-traditional programs and services, technology, other personnel costs, and other costs. The following costs were not included in the study: food service, transportation, community services, adult education, and capital.

For the evidence-based approach, APA worked with researchers from the Educational Policy Improvement Center.

> The evidence-based approach in this study began with a comprehensive review of available literature to identify educational strategies that are likely to be effective in schools. The strategies with the most research support were then presented, via an online simulation, to a panel of teachers, educational administrators, pupil support staff, school board members, and business representatives who were called upon to consider the necessity and relative importance of each strategy. Panelists were encouraged to select only strategies that they believed would be effective in "hypothetical" schools, or schools that represent current (2005-06) enrollments, staffing, and other expenditures in large Pennsylvania school districts at the elementary, middle, and high school levels.[460]

Panelists were selected through recommendations from various education groups in the state. The State Board of Education also selected local business leaders to participate. Forty-five people completed the simulation. APA then analyzed the data from the simulation.

After APA conducted the three adequacy methods for the state of Pennsylvania, they had researchers from New York University complete a cost analysis of school district spending and determine how it correlated to student performance. APA also analyzed other costs in the state of Pennsylvania. APA configured a regional cost of living index that could be used in Pennsylvania's education funding formula, examined wage and salary differences in districts and student enrollment change, and analyzed the resources required to run the transportation system.

The cost estimate for 2005-06 for student to meet the performance targets was $21.63 billion compared to the actual statewide aggregate spending of $17.25 billion. The estimate per student was $11,926 whereas the actual spending per student in 2005-06 per was $9,512. APA

[460] Ibid, 17.

also calculated the additional cost for special needs students and concluded the added costs for special education was 1.1, for poverty was 0.43, for English language learners was 0.75, and for gifted students was 0.37.

New Mexico (January 2008)

In January 2008, the American Institute for Research (AIR) released its adequacy report for the Funding Formula Study Task Force, who was appointed by the state legislature. The professional judgment approach was used "to determine the cost of a sufficient education for all public school students in New Mexico."[461] Although the professional judgment approach was the main methodology utilized to cost out the resources, the researchers state that there was a hybrid approach used as well. The following items were provided to the professional judgment panels – expert briefs, resource profiles of successful schools, and public engagement materials. In order to create a definition for sufficiency and receive public input, online and paper surveys were made available. The surveys were created to elicit the following information: perceptions of New Mexico's current goals and standards and the elements needed to reach the goals. The survey was distributed to 100 individuals and the response rate was 33 percent. The public survey was completed by 1,700 individuals. Also, twenty-three town hall meetings were held to receive public input.

A Project Advisory Panel (PAP) was formed to work with AIR and included educators, legislators, superintendents, and school board members. In addition to the PAP, a Stakeholder Panel was formed which included members of the PAP, superintendents, education organization representatives, business community members, parents, and other interested residents. The Stakeholder panel convened twice to provide input. The first meeting entailed the panel

[461] American Institutes for Research (AIR), "An Independent Comprehensive Study of the New Mexico Public School Funding Formula, Volume I – Final Report," (Jan. 2008): 1.

synthesizing all the information from the public input process to create a definition for sufficiency which is referred to as the Goals Statement. The second meeting had AIR members sharing cost estimates of the base models the panels had created.

Six independent professional judgment panels (PJPs) composed of fifty-four educators were formed to represent the diverse districts across the state. The panels were asked to create a base model in order for the average size school with low-need students in elementary, middle, and high schools to reach the Goals Statement. Then the panels were asked to describe the resources for varying demographic groups and school sizes. After the PJP's recommendations were completed AIR conducted a review of the programs. "The purpose of this review is to ensure that the final program designs are efficient and to arrive at a more realistic and grounded set of specifications and cost estimates."[462] The PAP met with representatives from the PJPs for the review. "There was agreement that some of the programs developed by the PJPs could be designed more efficiently."[463]

After the review, the PAP then conducted the same exercises as the PJPs did along with a member of the AIP team using the recommendations of the PJPs as a starting point. "As a result of their review, the PAP developed a revised set of program designs and resource specifications, which AIR used to produce a final set of sufficiency cost estimates."[464] "In general, the instructional program designs developed by the PAP added resources to reduce class sizes, allocated personnel to support language and cultural heritage programs, extended the

[462] Ibid, 2.

[463] Ibid.

[464] Ibid.

instructional year, added specialists to work with small groups of students, and provided coaches to foster professional development opportunities for teachers."[465]

The costs for a sufficient student education are the combined total of these "components: (1) the projected sufficient school-level projections (aggregated to the district-level for non-charter schools); (2) the cost of services for three- and four-year old DD students; (3) the cost of ancillary services for disabled students; and (4) the cost of district-level overhead functions." Initially AIR recommended applying a geographic cost adjustment to the sufficiency cost estimate. However, after concerns about the external validity of the estimated indices were discussed by the task force and the PAP, the geographic cost adjustment was not applied. The researchers computed that "the statewide average per pupil program cost for the 2007-2008 school year is $8,144."[466] This means that state funding would need to be increased by 14.5 percent ($334.7 million) for New Mexico's students to achieve sufficiency. Variations in estimates existed depending on the type of district. For example, the cost per pupil for rural-remote districts would require $12,501 per pupil. Due to the increased funding recommended by AIR, a multi-year, phase-in schedule was provided.

Other Adequacy Studies

There have been other state adequacy studies conducted besides the studies previously discussed. These studies could not be included or evaluated due to the fact that the studies were unattained and/or not released. Following is a list of the titles of these studies:

[465] Ibid, 26.

[466] Ibid, 47.

- “Alabama Department of Education Study,” State Board of Education, 2001

- “School Finance in Mississippi: A Proposal for an Alternate System” by Augenblick, Van de Waters, & Myers, 1993, Sponsoring Agency: The Task Force on Restructuring the Minimum Education Program

- “An Estimation of the Total Cost of Implementing the Result of the School Finance Adequacy Study Undertaken by the Missouri Coalition for Education Adequacy” by The Task Force” by Augenblick and Silverstein, 2003, Sponsoring Agency: The Missouri Education Coalition for Adequacy

- “Calculation of the Cost of an Adequate Education in Nebraska in 2002-2003 Using the Professional Judgment Approach” by Augenblick & Myers, Inc., 2003, Sponsoring Agencies: Nebraska State Education Association; Greater Nebraska Schools Association; Lincoln Public Schools; Nebraska Association of School Boards; Nebraska Coalition for Educational Equity and Adequacy; Nebraska Council of School Administrators; Nebraska Rural Community Schools Association; Omaha Public Schools; and Westside Community Schools

- “Alternative Approaches for Determining a Base Figure and Pupil-Weighted Adjustments for Use in a School Finance System in New Hampshire” by Augenblick & Myers, Inc., 1998, Sponsoring Agency: The Adequate Education Costs and Municipal Grant Distribution Commission of New Hampshire, authorized by state statute

- “Costing Out Model” by New Jersey Department of Education, 1996, Sponsoring Agency: New Jersey Department of Education

- “New Jersey Cost Study,” by Augenblick, Palaich, and Associates, 2003, Sponsoring Agency: New Jersey Department of Education

- “Recommendations for a Base Figure and Pupil-Weighted Adjustments to the Base Figure for Use in a New School Finance System in Ohio” by Augenblick & Myers, 1997, Sponsoring Agency: The School Funding Task Force

- “Determining a Base Student Cost Figure for Use in Ohio's School Foundation Program” by Augenblick, Van de Water & Associates, 1993, Sponsoring Agency: The Alliance for Adequate School Funding

- Oklahoma’s study by Augenblick, Palaich, and Associates, 2004-2005

- “Determining an Adequate Per Pupil Funding Level for Public K-12 Education in South Carolina in Relationship to Pupil Performance Objectives: Creating the Basis for an Agreement Between the State and Local School Districts with Appropriate Accountability at Both Levels,” by Augenblick & Myers, 2000, Sponsoring Agency: South Carolina School Boards Association

- "Basic Education Program," by Tennessee Board of Education,1992, Sponsoring Agency: Tennessee Legislature and Tennessee Department of Education
- "Vermont Education Finance Study," by National Conference of State Legislatures, 2004, Sponsoring Agency: Vermont Department of Education

Two additional adequacy studies were completed for the states of Alaska[467] and New Hampshire.[468] These studies are not full scale costing out studies because the researchers do not estimate the cost of an adequate education and therefore these studies have not been summarized.

Florida's Education Finance System

Florida currently funds its public schools through the Florida Education Finance Program (FEFP). The Florida Legislature adopted the FEFP in 1973 based on the recommendation of the Citizens' Committee on Education. The FEFP replaced the Minimum Foundation Program which the state had been using since 1947. The goal of the FEFP is "to guarantee to each student in the Florida public educational system the availability of programs and services appropriate to his or her educational needs which are substantially equal to those available to any similar student notwithstanding geographic differences and varying local economic factors."[469]

Using the FEFP, the responsibility of funding public education is shared between the state and Florida's sixty-seven school districts.[470] "The FEFP is a distribution formula and does not assess the adequacy or the outcomes of the distribution."[471]

> The key feature of the FEFP is to base financial support for education upon the individual student participating in a particular educational program rather than upon the number of

[467] See Jay Chambers, Lori Taylor, and Joe Robinson, "Alaska School District Cost Study," (Jan. 2003).

[468] See James. R. Smith and James W. Guthrie, "An Exploration of Educational and Demographic Conditions Affecting New Hampshire's Adequacy Aid," (Oct. 2000).

[469] Florida Statutes, § 236.012(1) (1998). This section of the Florida Statutes was renumbered after the "Florida K-20 Education Code" rewrite, effective January 7, 2003.

[470] FLA. CONST. art. XII § 9a2.

[471] Nakib and Herrington, 353.

> teachers or classrooms. FEFP funds are primarily generated by multiplying the number of full-time equivalent (FTE) students in each of the funded educational programs by cost factors to obtain weighted FTEs. Weighted FTEs are then multiplied by a base student allocation and a district cost differential in the major calculation to determine the base funding from state and local FEFP dollars. Program cost factors are determined by the Legislature and represent relative cost differences among the FEFP programs. In addition to the base funding allocation, two major allocations within the FEFP are the Supplemental Academic Instruction Allocation and Exceptional Student Education Guaranteed Allocation.[472]

"Program cost factors serve to assure that each program receives its equitable share of funds in relation to its relative cost per student."[473]

After the adoption of the FEFP in 1973, Garms, Guthrie, and Pierce lauded the FEFP as a national model for inter-district equity.[474] "According to most traditional measures of inter-district equity it still ranks very high."[475] After analyzing the evolution of the equalization of educational opportunity in Florida, Johns states: "the evidence shows clearly that the Florida school finance program is almost 'fiscally neutral.' Florida in 1975-76 probably ranked among the top six states in the nation in the extent to which educational opportunity was financially equalized."[476]

The FEFP is considered a highly modified foundation plan. However, due to local property tax limitations the FEFP provides de facto full state funding.[477] Florida's tax base to fund education is limited due to the constitutional prohibition of imposing a state personal

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[472] Florida Department of Education 2005-2006 Funding for Florida School Districts, EIAS Series (2005-06): 1.

[473] Ibid, 10.

[474] Walter Garms, James Guthrie, and Lawrence Pierce, *School Finance: The Economics and Politics of Public Education* (Englewood Cliffs, NJ: Prentice Hall, 1988).

[475] Nakib and Herrington, 360.

[476] R.L. Johns, *The Evolution of the Equalization of Educational Opportunity in Florida 1926 to 1976* (Gainesville, FL.: Institute for Educational Finance, 1976): 77.

[477] Wood, 36.

income tax or state property tax.[478] Therefore the state must rely on the sales tax, the corporate income tax, and other specific consumption taxes (e.g., beverage, gas, and cigarette). Nakib and Herrington hold the view that "this taxing base has been exposed over the last decade as too volatile and too narrowly based to adequately support an educational system with growing enrollments and aspirations for high student achievement, and its volatility has undermined the stability of educational funding at the state level."[479]

"Many state funding programs, including Florida's, are designed to distribute funds to maintain equality of local revenue capacity among districts, but are not designed to assess the returns of such distribution."[480] One way of addressing adequacy among school districts within a state is to increase "the level of spending of the lower-spending districts to be at par with the highest-spending districts."[481] This assumes that the highest-spending districts are spending what is adequate. The difficulty with attempting this in the state of Florida is that the highest-spending districts do not spend much more than the lowest-spending districts, therefore the application of this model in Florida is problematic.

When computing the base student allocation for Florida's students, it is not configured by doing a cost analysis. Instead, public policymakers determine it mainly with two issues in mind. Legislators want to ensure school districts receive at least what they were appropriated the prior year. Nakib and Herrington suggest legislators try to appropriate funds using the current taxation level so they will not have to raise taxes to fund education.[482] It is argued by some that due to

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[478] Fla. Const. art. XII § 5.

[479] Nakib and Herrington, 364.

[480] Ibid, 362.

[481] Ibid.

[482] Ibid, 358.

the high growth in Florida, "the lack of relationship between the base and cost requirements is amplified"[483] even though it is funded on a per student basis. To summarize, "if the base student allocation has been inadequate all along, the prevailing method of appropriation perpetuates the flaws year after year."[484] Interviews with legislative fiscal staff confirmed that the level of annual program increase is incremental and may have little relation to any formal definition of need. The single most important factor is the amount that had been provided the year before.[485]

Florida's Court Challenges

Florida has had its school finance formula challenged four times in court—two on equity issues and two on adequacy concerns.[486] None of these challenges have been successful in the courts. In 1979, the Supreme Court ruled in *Gindl v. Department of Education*[487] that the district cost differential in the FEFP "is not arbitrary, capricious, or unreasonable and unrelated to the goal of providing substantially equal educational opportunities."[488] Additionally, the Supreme Court ruled that it is permissible for local school districts to levy additional millage. In the words of the Court, levying additional millage "does not violate the equal protection clause, and substantial equality of education is not prevented by the leeway millage."[489]

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[483] Ibid.

[484] Ibid.

[485] Ibid, 363.

[486] See *Gindl v. Department of Education*, 396 S. 2d 1105 (Fla. 1979); *Department of Education v. Glasser*, 622 So. 2d 944 (Fla. 1993); *Coalition for Adequacy and Fairness in School Funding v. Chiles*, 680 So. 2d 400 (Fla. 1996); *Faith L. Honore, et al., v. Florida State Board of Education* No. CV 99-17 (Fla. 2d. Cir., Filed Jan 4, 1999).

[487] 396 S. 2d 1105 (Fla. 1979)

[488] Ibid.

[489] Ibid.

In 1993, in the *State of Florida Department of Education vs. Glasser*,[490] the Supreme Court of Florida ruled to reverse the decision of the District Court who had ruled in favor of *Glasser*. "The School Board and the *Amici* argued that the Legislature has 'no power' over local government millage."[491] The Supreme Court identified language in the 1885 Constitution and the 1968 Revision to demonstrate the Legislature's role in local government millage. When comparing the verbiage in the Constitution and the Revision of 1968, "there is no constitutional history to support the argument that the 1968 Revision intended to change the allocation of powers to control levels of ad valorem taxation and that this radical change was accomplished by continuing with the same language."[492] To show its control over local government millage, in the 1968 Revision, the Legislature "adopted a millage limitation for local governments."[493] The Court also denied the plaintiffs' request to define "a uniform system of free public schools,"[494] instead leaving that responsibility to the legislature.

In 1995, the Coalition for Adequacy and Fairness in School Funding bought suit against Lawton Chiles, arguing that the funding of education in Florida was not adequate. The Plaintiffs argued "that the right to an adequate education is fundamental under the Florida Constitution, that the state is constitutionally obligated to provide adequate resources to provide a uniform system of free public schools, and that defendants have failed to make such provision."[495] The Supreme Court affirmed the lower court's decision to dismiss the case stating the "appellants

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[490] *Department of Education v. Glasser*, 622, So. 2d 944 (Fla. 1993).

[491] Ibid.

[492] Ibid.

[493] Ibid.

[494] Fla. Const., art. IX § 1.

[495] *Coalition for Adequacy and Fairness in School Funding, In., et al., v. Chiles*, 680 So. 3d 400 (Fla. 1996).

have failed to demonstrate in their allegations a violation of the legislature's duties under the Florida Constitution."[496] The Supreme Court affirmed the lower court's ruling that the court would not "usurp and oversee the appropriations power [and stated] because Plaintiffs do not ask the Court to review the constitutionality of any specific legislative enactment, the separation of powers provision of the Florida Constitution, Article II, Section 3, clearly prevents this court from granting the relief sought by Plaintiffs."[497]

In *Honore v. Florida,*[498] individual students and parents and a group of civil rights organizations filed an adequacy suit. The Circuit Court of the Second Judicial Circuit of Florida dismissed the case in 2003 for failure to prosecute.

Florida's Courts: The Standard for an Adequate Education

"In 1998, the citizens of Florida amended the language in the state constitution."[499] Article IX, section 1 of the Florida Constitution states

> The education of children is a fundamental value of the people of the State of Florida. It is, therefore, a paramount duty of the state to make adequate provision for the education of all children residing within its borders. Adequate provision shall be made by law for a uniform, efficient, safe, secure, and high quality system…[500]

"The new clause references both an input and an output standard; that is to say, the system as well as the education obtained must be high quality."[501] Prior to 1998, the state's constitution made it the "paramount duty of the state to make adequate provision for the education of all

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[496] Ibid.

[497] Ibid.

[498] *Faith L. Honore, et al., v. Florida State Board of Education et al*. No. CV 99-17 (Fla. 2d. Cir., Filed Jan 4, 1999)

[499] Herrington and Weider, 523.

[500] Fla. Const. art. IX § 1 (1998).

[501] Herrington and Weider, 523.

children residing within its borders."[502] "Although the term 'adequate provision' has not been defined, several Florida cases have attempted to define the second phrase in this clause, 'uniform system of free public education.'"[503] The education clause was reviewed in *St. Johns County v. Northeast Florida Builders Association,*[504] in which the court ruled

> The Florida Constitution only requires that a system be provided that gives every student an equal chance to achieve basic educational goals prescribed by the legislature. The constitutional mandate is not that every school district in the state must receive equal funding nor that each educational program must be equivalent. Inherent inequities, such as varying revenues because of higher or lower property values or difference in millage assessments, will always favor or disfavor some districts.[505]

The Supreme Court declined to define "a uniform system of free public schools" in *Florida Department of Education v. Glasser,*[506] ruling that the legislature should be the party to define the meaning of this phrase. "As Justice Kogan's concurring opinion explained in *Glasser*, uniformity is a complicated question 'involving the special expertise of the Legislature, its staff, its advisors on public finance, and the Department of Education.'"[507]

In *Coalition for Adequacy and Fairness in School Funding v. Chiles,*[508] the Florida Supreme Court concurred with the trial court's statement that "adequate provision as expressed under article IX, section 1, of the Florida Constitution cannot refer to 'adequate' funding."[509] The trial court also stated "Florida's Constitution does not create a fundamental right to a

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[502] Fla. Const. art. IX § 1 (1968).

[503] *Coalition for Adequacy and Fairness in School Funding, Inc., et. al., v. Chiles*, 680 So. 3d 400 (Fla. 1996).

[504] 583 So. 2d 635 (Fla. 1991).

[505] Ibid.

[506] 622 So. 2d 944 (Fla. 1993).

[507] *Coalition for Adequacy and Fairness in School Funding, Inc., et al., v. Chiles*, 680 So. 3d 400 (Fla. 1996); *Department of Education v. Glasser*, 622 So. 2d 944, 951 (Fla. 1993).

[508] *Coalition for Adequacy and Fairness in School Funding, Inc., et al., v. Chiles*, 680 So. 3d 400 (Fla. 1996).

[509] Ibid.

particular level of funding."[510] After discussing previous cases, the Supreme Court explained, "each time the education article has been challenged, the challenging party made an objection to some specific funding issue. In contrast, in this case appellants have made a blanket assertion that the entire system is constitutionally inadequate."[511] The Supreme Court agreed with the reasoning given by the trial court which stated:

> While the courts are competent to decide whether or not the Legislature's distribution of state funds to complement local education expenditures results in the required 'uniform system,' the courts cannot decide whether the Legislature's appropriation of funds is adequate in the abstract, divorced from the required uniformity. To decide such an abstract question of 'adequate' funding, the courts would necessarily be required to subjectively evaluate the Legislature's value judgments as to the spending priorities to be assigned to the state's many needs, education being one among them. In short, the Court would have to usurp and oversee the appropriations power, either directly or indirectly, in order to grant the relief sought by Plaintiffs. While Plaintiffs assert that they do not ask the Court to compel the Legislature to appropriate any specific sum, but merely to declare that the present funding is constitutionally inadequate, what they seek would nevertheless require the Court to pass upon those legislative value judgments which translate into appropriations decisions. And, if the Court were to declare present funding levels 'inadequate,' presumably the Plaintiffs would expect the Court to evaluate, and either affirm or set aside, future appropriations decisions, unless the Plaintiffs are seeking merely an advisory opinion from the Court. The Court cannot give an advisory opinion, May v. Holley, 59 So.2d 636 (Fla. 1952). Accordingly, the Court declines to interpret Article IX, Section 1, of the Florida Constitution as Plaintiffs urge. That clause must be read in pari material with the rest of the Constitution. The Court declines to read it in a manner which allows the judiciary to usurp the exercise of the appropriations power allocated exclusively to the Legislature under our Constitution. Because Plaintiffs do not ask the Court to review the constitutionality of any specific legislative enactment, the separation of powers provision of the Florida Constitution, Article II, Section 3, clearly prevents this court from granting relief sought by Plaintiffs.[512]

To summarize their ruling, the Supreme Court stated

> while we stop short of saying 'never,' appellants have failed to demonstrate in their allegations, or in their arguments on appeal, an appropriate standard for determining 'adequacy' that would not present a substantial risk of judicial intrusion into the powers and responsibilities assigned to the legislature, both generally (in determining

[510] Ibid.

[511] Ibid.

[512] Ibid.

> appropriations) and specifically (in providing by law for an adequate and uniform system of education.)[513]

Due to the Florida court's rulings, it is apparent that the Florida Supreme Court does not plan to determine if Florida's funding meets the requirements of adequate provision as defined in the constitution. Furthermore, the court does not plan to develop a set amount or model to determine how much schools should be spending on students. The Supreme Court has given that task to the state legislature if it so chooses. At the time of this study, the Florida legislature had not developed an adequacy model.

Summary

This study examined the methodologies utilized to determine adequate education funding in past adequacy studies. This study intended to demonstrate the difficulty state legislatures have to determine how much money is adequate for schools particularly in a state like Florida's which has relatively equal spending. An adequacy model has not been developed for Florida and this study's purpose was to research and analyze the various methods for determining adequate education funding and determine if a model can be designed for the state of Florida. The methodology utilized for the study was discussed in chapter 3.

[513] Ibid.

Table 2-1. State Education Adequacy Studies

State	Title of Study	Year	Researcher	Funding Source	Advocacy Group (Yes/No)
Massachusetts	Every Child a Winner	July 1991	Massachusetts Business Alliance for Education Committee on School Finance	Massachusetts Business Alliance for Education	Yes
Wyoming	A Proposed Cost-Based Block Grant Model for Wyoming School Finance	May 1997	Management Analysis & Planning Associates (MAP)	Joint Appropriations Committee of the Wyoming Legislature	No
Maine	Essential Programs and Services: Equity and Adequacy in Funding to Improve Learning for All Children	Jan. 1999	Maine Education Policy Research Institute	Maine Legislature	No
Oregon	The Oregon Quality Education Model	April 1999	Legislative Council on the Oregon Quality Education Model	Oregon Legislative Assembly	No
Oregon	Oregon Quality Education Model-2000	Jan. 2000	Oregon Quality Education Commission	Oregon Gov. John Kitzhaber and Schools Superintendent Stan Bunn	No
Illinois	A Procedure for Calculating a Base Cost Figure and an Adjustment for At-Risk Pupils that Could be Used in the Illinois School Finance System	June 2001	Augenblick and Myers, Inc.	Illinois Education Funding Advisory Board	No

Table 2-1. Continued

State	Title of Study	Year	Researcher	Funding Source	Advocacy Group (Yes/No)
Maryland	A Professional Judgment Approach to Determining Adequate Education Funding in Maryland	June 2001	Management Analysis & Planning, Inc. (MAP)	The New Maryland Education Coalition	Yes
Maryland	Calculation of the Cost of an Adequate Education in Maryland in 1999-2000 Using Two Different Analytic Approaches	Sept. 2001	Augenblick and Myers	Maryland Commission on Education Finance, Equity, and Excellence (Thornton Commission)	No
Wyoming	Proposed Revisions to the Cost-Based Block Grant	Jan. 2002	Management Analysis and Planning Associates (MAP)	Wyoming State Legislature	No
New York	Estimating the Cost of an Adequate Education in New York	Feb. 2002	Duncombe	Center for Policy Research	Yes
Kansas	Calculation of the Cost of a Suitable Education in Kansas in 2000-2001 Using Two Different Analytical Approaches	May 2002	Augenblick and Myers	Kansas' Legislative Coordinating Council	No
Wisconsin	Funding Our Future: An Adequacy Model for Wisconsin School Finance	June 2002	Norman	Institute for Wisconsin's Future	Yes
Montana	Calculation of the Cost of a Suitable Education in Montana in 2001-2002 Using the Professional Judgment Approach	Aug. 2002	Myers and Silverstein (Augenblick and Myers)	Montana School Board Association	Yes

Table 2-1. Continued

State	Title of Study	Year	Researcher	Funding Source	Advocacy Group (Yes/No)
Indiana	Calculation of the Cost of an Adequate Education in Indiana in 2001-2002 Using the Professional Judgment Approach	Sept. 2002	Augenblick and Myers, Inc.	Indiana State Teachers Association	Yes
Colorado	Calculation of the Cost of an Adequate Education in Colorado using the Professional Judgment and the Successful School District Approaches	Jan. 2003	Augenblick and Myers	Colorado School Finance Project (CSFP)	Yes
Kentucky	A State-of-the-Art Approach to School Finance Adequacy in Kentucky	Feb. 2003	Picus and Associates	Kentucky Department of Education	No
Kentucky	Calculation of the Cost of an Adequate Education in Kentucky: A Professional Judgment Approach	Feb. 2003	Verstegen	Council for Better Education, Inc.	Yes
Washington	What Will It Take? Defining a Quality Education in Washington and a New Vision of Adequacy for School Funding	Mar. 2003	Conley and Freund	The Rainer Institute	Yes
Kentucky	A Professional Judgment Approach to School Finance in Kentucky	May 2003	Picus and Associates	Kentucky Department of Education	No

Table 2-1. Continued

State	Title of Study	Year	Researcher	Funding Source	Advocacy Group (Yes/No)
North Dakota	Calculation of the Cost of an Adequate Education in North Dakota in 2002-2003 Using the Professional Judgement (sic) Approach	July 2003	Augenblick, Palaich, and Associates	North Dakota Department of Public Instruction (DPI)	No
Arkansas	An Evidenced-Based Approach to School Finance Adequacy in Arkansas	Sept. 2003	Picus	Arkansas Legislature's Joint Committee on Educational Adequacy	No
Tennessee	Calculation of the Cost of an Adequate Education in Tennessee in 2001-02 Using the Professional Judgment Approach and the Successful School District Approach	Dec. 2003	Augenblick, Palaich, and Associates	Coalition for Tennessee's Future	Yes
New York	Estimating the Additional Cost of Providing an Adequate Education	Jan. 2004	New York State Education Department	New York State Board of Regents	No
Minnesota	Determining the Cost of an Adequate Education in Minnesota: Implications for the Minnesota Education Finance System	Feb. 2004	Haveman	Minnesota Center for Public Finance Research	Yes
New York	Resource Adequacy Study for the New York State Commission on Education Reform	Mar. 2004	Standard & Poor's (S&P)	New York State Commission on Education Reform	No

Table 2-1. Continued

State	Title of Study	Year	Researcher	Funding Source	Advocacy Group (Yes/No)
New York	The New York Adequacy Study: Determining the Cost of Providing All Children in New York an Adequate Education	Mar. 2004	American Institutes for Research (AIR), MAP and Taylor	The Atlantic Philanthropies, Bill and Melinda Gates Foundation, and The Ford Foundation	Yes
Texas	School Outcomes and School Costs: The Cost Function Approach	Mar. 2004	Gronberg, Jansen, Taylor, and Booker	The Texas Joint Select Committee for Public School Finance	No
Texas	Estimating the Costs of Meeting the Texas Educational Accountability Standards	May 2004	Imazeki and Reschovsky	Plaintiffs in *West Orange Cove v. Neeley*	Yes
Arizona	An Evidenced-Based Approach to School Finance Adequacy in Arizona	June 2004	Picus	Rodel Charitable Foundation of Arizona and Greater Phoenix Leadership	Yes
Arizona	Arizona English Language Learner Cost Study	Feb. 2005	National Conference of State Legislature's National Center on Education Finance	Arizona Legislative Council	No
Hawaii	State of Hawaii Adequacy Funding Study	Mar. 2005	Thornton	Hawaii Department of Education	No
Connecticut	Estimating the Cost of an Adequate Education in Connecticut	June 2005	Augenblick, Palaich, and Associates	Connecticut Coalition for Justice in Education Funding (CCJEF)	Yes

Table 2-1. Continued

State	Title of Study	Year	Researcher	Funding Source	Advocacy Group (Yes/No)
Montana	Determining the Cost of Providing an Adequate Education in the State of Montana	Oct. 2005	R.C. Wood and Associates	Quality Schools Interim Committee and the Montana State Legislature	No
Wyoming	An Evidenced-Based Approach to Recalibrating Wyoming's Block Grant School Funding Formula	Nov. 2005	Picus	Wyoming Legislative Select Committee on Recalibration	No
Kansas	Estimating the Costs of Meeting Performance Outcomes Adopted by the Kansas State Board of Education	Dec. 2005	Duncombe and Yinger	Kansas Legislative Division of Post Audit (LPA)	No
Kansas	Elementary and Secondary Education in Kansas: Estimating the Costs of a K-12 Education Using Two Approaches	Jan. 2006	Legislative Division of Post Audit (LPA)	Legislative Division of Post Audit (LPA)	No
South Dakota	Estimating the Cost of an Adequate Education in South Dakota	Jan. 2006	Augenblick, Palaich, & Associates	South Dakota Alliance for Education	Yes
Arkansas	Recalibrating the Arkansas School Funding Structure	Aug. 2006	Odden, Picus, and Goetz	Adequacy Study Oversight Sub-Committee of the House & Senate Interim Committees on Education of the Arkansas General Assembly	No
Nevada	Estimating the Cost of an Adequate Education in Nevada	Aug. 2006	Augenblick, Palaich, and Associates, Inc.	Nevada Legislative Commission's Committee to Study School Financing Adequacy	No

Table 2-1. Continued

State	Title of Study	Year	Researcher	Funding Source	Advocacy Group (Yes/No)
Washington	An Evidence-Based Approach to School Finance Adequacy in Washington	Sept. 2006	Odden, Picus, Goetz, Mangan, and Fermanich	K-12 Advisory Committee of Washington Learns	Yes
Washington	Washington Learns: Successful District Study	Sept. 2006	Fermanich, Mangan, Odden, Picus, Gross, and Rudo	Washington Learns	Yes
Colorado	Estimating Colorado School District Costs to Meet State and Federal Education Accountability Requirements	Oct. 2006	Augenblick, Palaich, and Associates	Colorado School Finance Project	Yes
Minnesota	Estimating the Cost of an Adequate Education in Minnesota	Nov. 2006	Silverstein, Rose, and Myers	P.S. Minnesota	Yes
Montana	Estimating the Cost of an Adequate Education in Montana	Jan. 2007	Silverstein, Rose, Palaich, Myers, and Brown	Montana Quality Education Coalition	Yes
Washington	Washington Adequacy Funding Study	Jan. 2007	Conley and Rooney - Educational Policy Improvement Center (EPIC) and Center for Educational Policy Research (CEPR)	Washington Education Association	Yes
California	Aligning School Finance with Academic Standards: A Weighted Student Formula Based on a Survey of Practitioners	Mar. 2007	Sonstelie, Altman, Battersby, Benelli, Dhaey, Gardinali, Hill, and Lipscomb	Institute for Research on Education Policy and Practice at Stanford University	No

Table 2-1. Continued

State	Title of Study	Year	Researcher	Funding Source	Advocacy Group (Yes/No)
California	Efficiency and Adequacy in California School Finance: A Professional Judgment Approach	Mar. 2007	Chambers, Levin, and DeLancey (American Institutes for Research – AIR)	Bill and Melinda Gates Foundation, William and Flora Hewlett Foundation, James Irvine Foundation, and Stuart Foundation	Yes
Rhode Island	State of Rhode Island Education Adequacy Study	Mar. 2007	R.C. Wood and Associates	Joint Committee to Establish a Permanent Education Foundation Aid Formula for Rhode Island	No
Wisconsin	Moving From Good to Great in Wisconsin: Funding Schools Adequately And Doubling Student Performance	Mar. 2007	Odden, Picus, Archibald, Goetz, Mangan, & Aportela	Wisconsin School Finance Adequacy Initiative	Yes
Pennsylvania	Costing Out the Resources Needed to Meet Pennsylvania's Public Education Goals	Nov. 2007	Augenblick, Palaich, and Associates, Inc.	Pennsylvania State Board of Education	No
New Mexico	An Independent Comprehensive Study of the New Mexico Public School Funding Formula	Jan. 2008	American Institutes for Research (AIR)	Funding Formula Task Force appointed by the State Legislature	No

CHAPTER 3
METHODOLOGY

Introduction

This study utilized techniques from content and policy analysis research. In general terms, Holsti explains content analysis as "the application of scientific methods to documentary evidence."[1] Fraenkel and Wallen describe content analysis as "the analysis of the written or visual contents of a document."[2] "Content analysis applies empirical and statistical methods to textual material."[3] The scientific methods Holsti identifies are objectivity, system, and generality. Objectivity requires "that each step in the research process must be carried out on the basis of explicitly formulated rules and procedures."[4] System refers to "the inclusion and exclusion of content or categories [which] is done according to consistently applied rules."[5] Generality "requires that the findings must have theoretical relevance."[6] Holsti defines a strong research design as one that "makes explicit and integrates procedures for selecting a sample of data for analysis, content categories and units to be placed into the categories, comparisons between categories, and the classes of inference which may be drawn from the data."[7]

"Policy analysis is a means of synthesizing information including research results to produce a format for policy decisions (the laying out of alternative choices) and of determining

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[1] Ole R. Holsti, *Content Analysis for the Social Sciences and Humanities*, (Reading, MA: Addison-Wesley Publishing Company, 1969): 5.

[2] Jack R. Fraenkel and Norman E. Wallen, *How to Design and Evaluate Research*, 2nd ed. (New York: McGraw-Hill, Inc., 1993), 11.

[3] Kent Lindkvist, "Approaches to Textual Analysis," in *Advances in Content Analysis*, Karl Erik Rosengren, Ed, (Beverly Hills: Sage Publications, 1981): 34.

[4] Holsti, 3.

[5] Ibid, 4.

[6] Ibid, 5.

[7] Ibid, 24-27.

future needs for policy-relevant information."[8] "Policy analysis is viewed as an applied social science discipline that employs multiple methods of inquiry, in contexts of argumentation and public debate, to create, critically assess, and communicate policy-relevant knowledge."[9] Weimer and Vining explain that "policy research focuses on relationships between variables that reflect social problems and other variables that can be manipulated by public policy."[10] Policy analysis "is a means of synthesizing information to draw from it policy alternatives and preferences stated in comparable, predicted quantitative and qualitative terms as a basis or guide for policy decisions."[11]

The purpose of this study was to examine the different methodologies used to determine what an adequate education would cost and if there were a state of the art adequacy study. Analysis of past adequacy studies conducted and models used was necessary in order to determine if there was one approach that could be used to configure an adequate education in a state like Florida where expenditure levels are similar across districts. A review of the literature that was relevant to this study was presented in the previous chapter. This chapter contains the methodology used for this study including the research design, data sources, and data organization.

Research Design

This study analyzed previous adequacy studies conducted by various researchers for several states. The studies were obtained via the Internet, from journals, and from texts. Certain

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[8] Walter Williams, *Social Policy Research and Analysis*, (New York, NY: American Elsevier Publishing Company, Inc., 1971), xi.

[9] William N. Dunn, *Public Policy Analysis: An Introduction*, (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1994), xiii-xiv.

[10] David L. Weimer and Aidan R. Vining, *Policy Analysis: Concepts and Practice*, 3rd ed. (Upper Saddle River, NJ: Prentice-Hall, Inc., 1992), 29.

[11] Williams, 13.

studies were not accessible as identified and previously discussed in chapter 2 and therefore were not included in the analysis. This study was designed to answer the following questions:

1. What are the strengths and weaknesses of the current methodologies used to determine adequate funding?

2. Did the previous adequacy studies use the previously stated methodologies and if so did they use them correctly?

3. Using this information previously stated how does a state like Florida that has similar expenditures between districts utilize the methodologies?

4. Can an adequacy model be developed or applied for a state like Florida?

Data Sources

The primary sources used in the study were the adequacy studies conducted by various researchers many of which were obtained from the Internet or in journals. As discussed in chapter 2, many of the adequacy studies, as identified, were not published in scholarly journals and were funded by advocacy groups. Although these advocacy groups attempt to present as education interest groups, no organization is a public interest group. Approximately 50 percent of the adequacy studies conducted were commissioned by a state legislature. Augenblick and Associates have conducted many adequacy studies of which more than half of these studies were not commissioned by state legislatures. No studies of Augenblick's have been published and are highly proprietary. The literature exists as found in these studies but does not exist in a scholarly manner and as a result these independent studies cannot be judged.

Data Organization

Collected data were organized chronologically by the date the study was completed and then alphabetically by state. Each of the studies was summarized in chapter 2. Then the adequacy method utilized for the study (i.e. cost function, professional judgment, successful schools, and whole-school design) was identified and analyzed to determine if the method was

used correctly. In chapter 4, strengths and weaknesses of each methodology were identified and reliability and validity issues were presented. The data collected from the analysis of the state adequacy studies and the individual methodologies was then used to determine if any of the methodologies could be utilized in the state of Florida.

Summary

This chapter presented the methodology utilized for this study. Research on content and policy analysis was described. Then the research design was discussed. Data sources were outlined. Finally, how data was organized was presented. Results of the data analysis were discussed in chapter 4.

CHAPTER 4
RESULTS

The purpose of this study was to analyze the different methodologies utilized to configure the cost of an adequate education and determine if there were a model that could be used in a state like Florida's with similar expenditures across districts. To conduct this study, analysis of past adequacy studies conducted and models used was necessary. The strengths and weaknesses of the four adequacy models as well as the adequacy studies conducted were previously discussed in chapter 2. The methodology utilized for this study was presented in chapter 3. This chapter presents the results of the data analysis and how each adequacy model could be applied in the state of Florida. The following questions specifically addressed for this study were:

1. What are the strengths and weaknesses of the current methodologies used to determine adequate funding?
2. Did the previous adequacy studies use the previously stated methodologies and if so did they use them correctly?
3. Using this information previously stated how does a state like Florida that has similar expenditures between districts utilize the methodologies?
4. Can an adequacy model be developed or applied for a state like Florida?

Statistical Modeling/Cost Function Approach

"Statistical models run cost functions to determine how much money it takes to achieve a certain average test score under certain school and demographic circumstances. As these circumstances change from one community to another, the formula adapts the costs accordingly."[1] Some concerns with this model are that it is complicated and may be difficult for policy makers to understand, the model looks at one standard for student achievement such as

[1] William J. Mathis, "Equity and Adequacy," 13.

test scores, and the model relies on the existence of production function.[2] This model would be difficult to apply in Florida since the expenditures are similar across districts. Rebell explains that cost function studies "attempt to determine how much a particular school district would need to spend relative to the average district to produce a set performance target, given the characteristics of the school district and its student body."[3] Specifically, cost function analyses describe how "levels of spending may vary for districts of different characteristics that serve different student populations."[4] In Florida the model would not provide variations in spending and therefore would produce less valid results due to the similar expenditure levels across districts.

Although the cost function approach uses actual school spending experiences, Hanushek questions whether or not the researchers "have adequately identified the *causal* relationship between student performance and spending."[5] Hanushek argues that the cost function approach finds similar results that the production function studies have shown over the years – "the current pattern of spending is not very productive…[but] the cost or the expenditure needed to obtain any outcome"[6] has not been identified. "The expenditure function does not indicate the minimum expenditure (or cost) of reaching any achievement level but instead identifies average spending behavior seen in districts."[7] The cost function approach "does not identify

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[2] Addonzio.

[3] Rebell, 1311-1312.

[4] Ibid, 1312.

[5] Hanushek, "Science Violated," 274.

[6] Ibid, 275.

[7] Ibid.

programmatic ways of achieving outcomes. Instead, it assumes that just adding more of the resources observed (e.g., smaller classes or more experienced teachers) will lead to higher achievement."[8]

Duncombe recommended several ways to increase reliability of the cost function method. "Interrater reliability could be tested by asking different researchers to estimate CF's [cost function] for the same state over the same period."[9] An example Duncombe used is the adequacy studies done for the state of Texas in 2004.[10] "These studies produced significantly different COA [cost of adequacy] estimates even with the same standard, which suggests that it is important for CF researchers to examine the sensitivity of their results to different assumptions."[11] Duncombe identified a strength of the cost function method: "sensitivity analysis and study replication can be done at low cost."[12] Another strength Duncombe asserted is that "test-retest reliability tests of CF results are also feasible for estimating the same CF at several periods."[13]

To assess construct validity Duncombe recommended a way to assess the construct validity for cost function studies. "The accuracy and reliability of the historical data used in the statistical analysis should be assessed by examining stability of the [sic] data across time and

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[8] Ibid, 286.

[9] William Duncombe, "Responding to the Charge of Alchemy: Strategies for Evaluating the Reliability and Validity of Costing-Out Research," *Journal of Education Finance*, 32, no. 2 (2006): 143.

[10] See Timothy J. Gronberg, Dennis W. Jansen, Lori L. Taylor, and Kevin Booker, "School Outcomes and School Costs: The Cost Function Approach," (2004); Jennifer Imazeki and Andrew Reshovsky, "Estimating the Costs of Meeting the Texas Educational Accountability Standards," (2004).

[11] Duncombe, "Responding to the Charge," 143.

[12] Ibid.

[13] Ibid.

correlating similar measures from different sources."[14] The example Duncombe provided is student poverty.

> The most common measure of student poverty used in CF research is the percentage of students receiving free or subsidized lunch. CF studies should examine the stability of this measure across time and examine the correlation with the census poverty rate. Similar assessments of data quality should be done for other measures in the study.[15]

Testing for predictive validity is possible as long as reliable data exist for at least five years which is difficult in some states since the methods of assessing students continually changes. If there were five years of consistent data, Duncombe suggested testing "forecasting accuracy by estimating the cost model for the first three years and using model coefficients to predict spending for the fifth year. Comparisons of predicted and actual spending can be made, and the size of the forecast error and bias can be estimated."[16]

To improve internal validity, potential biases must be removed. "Of particular concern in statistical studies of this type are biases caused by omitted variables and simultaneous relationships between independent variables and the dependent variable."[17] Duncombe found that an important variable that many researchers omit are controls for efficiency. Even though some cost function "studies have attempted to control for efficiency, if these controls are inadequate, the results could be biased."[18]

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[14] Ibid, 144.

[15] Ibid.

[16] Ibid, 146.

[17] Ibid, 147.

[18] Ibid.

Successful Schools Model

For the successful school district approach, researchers or policymakers identify districts that have met state performance standards based on state tests. "Spending levels in those districts are used to calculate a base cost for adequate spending per pupil-the costs of serving a student with no special needs. Adjustments for student and district characteristics are then made."[19] This approach assumes that differences in funding correlate to variations in performance. Since Florida's school districts have similar expenditures no district in Florida would meet the definition for a successful school because the spending of the successful schools would be within the same spending pattern as non-successful schools (see Table 4.1). Florida's restricted range is small compared to the restricted ranges of most of the other 49 states and Washington DC (see Table 4.2). Furthermore, additional funding does not guarantee higher achievement. After examining 187 studies, Hanushek could not find a strong relationship between increased resources and student achievement.[20]

> The overarching problem stems from the empirical evidence available to estimate the costs of adequate student proficiency. The consultants' work would be simple, if scholars had shown, repeatedly, something like the following: An additional expenditure of one thousand dollars per pupil will translate, on average, into a 15 percent gain in student proficiency. Unfortunately, such studies do not exist. Research has not shown a clear causal relationship between the amount schools spend and student achievement.[21]

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[19] Picus and Blair, 4.

[20] Hanushek, "Assessing the Effects of School Resources."

[21] Eric A Hanushek, "The Alchemy of 'Costing Out' an Adequate Education." Paper presented at the conference "Adequacy Lawsuits: Their Growing Impact on American Education," Harvard University, Cambridge, MA (Oct. 2005): 5-6. See Eric A. Hanushek, "The Failure of Input-based Schooling Policies," *Economic Journal* 113, no. 485 (Feb. 2003): F64-F98,

Table 4-1. 2004-2005 Current Expenditures Per PK-12 UFTE (Florida)
(Does not Include Capital Outlay or Debt Service)

District	Current Expenditures	Unweighted FTE	Expenditures per UFTE
Monroe	99,129,088	8,081.10	12,267
Glades	14,396,824	1,245.17	11,562
Charlotte	200,607,489	17,571.89	11,416
Jefferson	13,522,758	1,196.45	11,302
Franklin	13,527,244	1,226.49	11,029
Sarasota	420,890,338	42,297.00	9,951
Collier	418,862,482	42,500.06	9,856
Liberty	13,919,405	1,428.75	9,742
Gadsden	59,494,659	6,122.19	9,718
Taylor	29,724,348	3,092.46	9,612
Walton	62,530,501	6,662.36	9,386
Hamilton	17,653,683	1,922.38	9,183
Dade	3,199,399,736	349,618.09	9,151
Hendry	67,776,571	7,431.83	9,120
Desoto	44,514,761	5,011.93	8,882
Madison	25,780,337	2,907.40	8,867
Dixie	18,924,587	2,139.08	8,847
Hardee	44,812,061	5,094.67	8,796
Lafayette	9,191,817	1,052.96	8,730
Palm Beach	1,478,250,130	169,477.07	8,722
Sumter	63,038,524	7,229.78	8,719
Martin	155,311,232	17,826.80	8,712
Gilchrist	24,234,541	2,787.10	8,695
Calhoun	18,857,424	2,193.49	8,597
Highlands	106,087,208	12,363.70	8,581
Gulf	18,402,062	2,151.01	8,555
Putnam	100,227,683	11,756.92	8,525
Bradford	29,809,796	3,518.04	8,473
Pinellas	924,581,120	109,292.92	8,460
Lee	657,641,996	78,065.54	8,424
Manatee	351,247,873	41,744.33	8,414
Escambia	352,560,957	42,025.33	8,389
Indian River	145,192,713	17,366.73	8,360
Flagler	100,325,995	12,014.89	8,350
Alachua	235,768,482	28,244.49	8,347
Broward	2,168,422,606	259,961.96	8,341
Leon	269,908,509	32,358.64	8,341
Volusia	543,243,613	65,357.48	8,312
Okaloosa	249,933,483	30,161.23	8,287

District	Current Expenditures	Unweighted FTE	Expenditures per UFTE
Washington	33,204,163	4,031.91	8,235
Jackson	58,911,820	7,164.95	8,222
Orange	1,418,837,511	172,711.40	8,215
Holmes	27,027,950	3,299.59	8,191
Hillsborough	1,558,800,495	190,909.89	8,165
Union	18,100,634	2,217.33	8,163
Levy	50,266,533	6,164.20	8,155
Bay	214,476,081	26,305.66	8,153
Duval	1,016,813,716	126,029.83	8,068
Columbia	81,254,024	10,089.05	8,054
St. Johns	214,996,415	26,833.27	8,012
Pasco	512,079,627	63,957.41	8,007
Citrus	127,125,190	15,892.51	7,999
Polk	731,217,393	92,020.15	7,946
Marion	333,367,505	41,970.71	7,943
Baker	37,819,609	4,793.09	7,890
Brevard	580,894,633	73,841.90	7,867
St. Lucie	302,596,885	38,673.09	7,824
Seminole	512,875,366	65,942.64	7,778
Lake	302,128,336	38,901.28	7,767
Santa Rosa	192,098,196	24,796.89	7,747
Osceola	394,251,865	51,061.34	7,721
Okeechobee	55,261,163	7,236.62	7,636
Nassau	83,167,863	10,926.12	7,612
Wakulla	37,754,079	4,987.70	7,569
Suwannee	44,097,844	5,841.05	7,550
Hernando	163,753,445	22,312.55	7,339
Clay	259,397,544	35,620.14	7,282
State	22,130,280,520	2,627,031.98	8,424
Range			4,985
Restricted Range			3,690

Table 4-2. 2004-05 Restricted Range For Expenditures Per Pupil (49 States and Washington DC)

STATE ABBR (SCHOOL)	RESTRICTED RANGE
AK	$21,736
AL	$2,492
AR	$3,556
AZ	$15,338
CA	$63,959
CO	$8,141
CT	$7,331
DC	$24,832
DE	$6,223
GA	$3,294
HI	$0
IA	$4,802
ID	$32,337
IL	$7,591
IN	$4,479
KS	$5,181
KY	$2,385
LA	$3,070
MA	$11,641
MD	$3,106
ME	$15,153
MI	$7,780
MN	$9,641
MO	$5,853
MS	$3,539
MT	$26,113
NC	$6,050
ND	$30,565
NE	$14,477
NH	$9,571
NJ	$11,396
NM	$10,863
NV	$13,153
NY	$44,132
OH	$14,782
OK	$7,808
OR	$20,881
PA	$5,422
RI	$6,031
SC	$3,169
SD	$8,394
TN	$2,512
TX	$9,216
UT	$8,438
VA	$4,681
VT	$11,159
WA	$18,555
WI	$3,987
WV	$1,696
WY	$13,787

The difficulty with adding resources to schools is that "the current organization and incentives of schools do little to ensure that any added resources will be used effectively."[22] In fact, "the spending that schools undertake when they have additional funds generally does not go toward things that enhance student outcomes."[23] Hedges, Laine, and Greenwald evaluated the same studies Hanushek did, eliminating those studies that had insignificant results and determined "…there is evidence of statistically reliable relations between educational resource inputs and school outcomes, and that there is much more positive relations than of negative relations between resource inputs and outcomes."[24]

Hanushek does explain that the research does not conclude that money never matters or that money cannot matter. Hanushek clarifies

> the fact that there has historically been a set of decisions and incentives in schools that have blunted any impacts of added funds, leading to inconsistent outcomes. That is, more spending on schools has not led reliably to substantially better results on the tests that states use to determine whether students are proficient.[25]

Picus argues that "one of the problems with all of these studies is they don't take into consideration the tremendous similarity with which school districts spend the resources available to them."[26] Picus states, "what we don't know is what the impact on student performance would be if schools or school districts were to dramatically change the way they spend the resources available to them."[27] Odden and Picus summarized the resource allocation studies and

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[22] Hanushek, "Assessing the Effects of School Resources," 156.

[23] Hanushek, "A Jaundiced View," 465.

[24] Hedges, Laine, and Greenwald, "Does Matter Matter?" 11.

[25] Hanushek, "The Alchemy of Costing Out," 6.

[26] Picus, "Does Money Matter?" 31.

[27] Ibid, 31.

concluded, "if additional education revenues are spent in the same way as current education revenues, student performance increases are unlikely to emerge."[28]

"Educators, social scientists, and courts have been unable to agree on the correlation between educational expenditures and the quality of education."[29] Wood summarized the research on money and student achievement. "Overall, research on the relationship of moneys expended and student achievement reveals mixed results. The basic research suggests there is a minimal relationship between expenditures and student achievement. However, those moneys spent on direct instructional activities yield the most positive relationship between student outcomes and moneys expended."[30]

"The successful schools approach is fully rooted in the current operations of a state's schools and considers only average expenditure for the relevant group of successful schools. Therefore, it gives no information about how changing the level of spending might affect achievement."[31] Hanushek identifies two extrapolation problems with the successful schools approach:

> There is no way to extrapolate the successful schools results from the currently observed outcomes of schools to a new level that is outside the range of observations on outcomes. Specifically, assume for illustration that the set of schools identified as successful has 70 to 80 percent of students reaching proficiency (which is perhaps well within current standards); there is no way to extrapolate these results to a 95 percent proficient standard. A second extrapolation problem also occurs. When successful schools are identified just by proficiency levels on state tests, the schools identified as successful tend to have students from more advantaged families where the parents have provided considerable education to the students. The method concentrates on base spending for a typical

[28] Odden, and Picus, 281.

[29] McUsic, 316.

[30] Wood, 53.

[31] Eric A. Hanushek, "Science Violated," 285.

> successful school but then must indicate how much remedial spending would be needed to bring schools with disadvantaged backgrounds up to the proficiency of the schools with better-prepared students. The appropriate way to do this is unclear, because again the situation is largely outside of the observations going into the successful schools analysis. The successful schools approach cannot provide any guidance to 'unsuccessful' schools other than to spend the same amount of money (which many already do with poor results).[32]

Professional Judgment Approach

For the professional judgment approach, teams of education experts meet and independently identify the educational resources needed to create schools in which educators have confidence that most of the students in the school will be able to meet the state-established performance goals.[33] To strengthen the validity of the professional judgment approach, some researchers recommend providing a statewide survey to all building principals and use these data to create inputs needed for the different prototype schools.[34] This approach has been used by many advocacy groups to determine the cost of an adequate education and invariably result in an increasingly higher estimate to provide an adequate education than the other adequacy models. This approach assumes that higher expenditures equal higher achievement which is not a guarantee and in a state like Florida with similar expenditures across districts, this assumption could not be validated.

One of the biggest criticisms of the professional judgment approach is how the educators are selected to serve on the panels. Hanushek explained

> The consultants performing the study seldom know any of the education personnel in the state, so they obviously need to solicit nominations—frequently from the organization

[32] Ibid, 286.

[33] Conley and Picus, "Oregon's Quality Education Model," 588.

[34] Ibid; R. Craig Wood and R. Anthony Rolle, "Improving "Adequacy" Concepts in Education Finance: A Heuristic Examination of the Professional Judgment Research Protocol," *Educational Considerations* 35, no. 1 (2007).

> commissioning the study. But since these organizations generally have a direct interest in the outcomes of the study, it seems unlikely that they will produce a random selection of educators to serve on the professional judgment panels. The nature of the selection process ensures that the judgments of any panel cannot be replicated (a fundamental concern of any truly scientific inquiry).[35]

Hanushek identified disclaimers or warning labels that researchers used in their reports when conducting professional judgment analyses. In the New York City adequacy study conducted by AIR/MAP, the researchers' stated:

> It must be recognized that the success of schools also depends on other individuals and institutions to provide the health, intellectual stimulus, and family support upon which public school systems can build. Schools cannot and do not perform their role in a vacuum, and this is an important qualification of conclusions reached in any study of adequacy in education. Also, success of schools depends on effective allocation of resources and implementation of programs in school districts.[36]

In their North Dakota adequacy study, Augenblick, Palaich, and Associates (APA) "discuss a lack of empirical validation of the professional judgment work:"[37]

> The advantages of the approach are that it reflects the views of actual service providers and its results are easy to understand; the disadvantages are that resource allocation tends to reflect current practice and there is only an assumption, with little evidence, that the provision of money at the designated level will produce the anticipated outcomes.[38]

Hanushek argued that professional judgment panels are not asked to identify the minimum expenditure necessary for students to reach a given standard. Instead Hanushek explained:

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[35] Eric A. Hanushek, "Science Violated," 272.

[36] Jay G. Chambers, Thomas B. Parrish, Jesse D. Levin, James W. Guthrie, Rich C. Seder, and Lori Taylor, "The New York Adequacy Study: Determining the Cost of Providing All Children in New York an Adequate Education," Volume 1 – Final Report, (March 2004): 3.

[37] Hanushek, "Science Violated," 292.

[38] John Augenblick, Robert Palaich, et al., "Calculation of the Cost of an Adequate Education in North Dakota in 2002-2003 using the Professional Judgement (sic) Approach," II-3.

> Whether discussing the purchase of a car, home, or service, the term cost is usually understood to mean the minimum necessary expenditure to achieve a given outcome. The idea is to establish the desired quality level and determine the lowest amount of money required. By contrast, the professional judgment panels are effectively encouraged to identify the maximum expenditure imaginable, in the hope that the amount will be enough to produce adequately proficient students.[39]

Duncombe concurred with Hanushek that there are many problems with reliability and validity with the research studies that use the professional judgment approach. However, instead of dismissing the methodology, Duncombe proposed ways to increase the reliability and validity of these studies. First Duncombe recommended ways to assess the interrater reliability of professional judgment studies "by randomly assigning potential panel members to several alternative panels. The panels could be given the same instructions and asked to estimate staffing and other instructional costs for the same prototype schools."[40] Then to evaluate how great the variations are among the different panels, Duncombe suggested using a simple measure of variation such as coefficients of variation.

Duncombe recommended examining the construct validity of professional judgment research "by systematically varying the scenario and the constraints given panel members to see how these variations affect their COA [cost of adequacy] estimates."[41] Duncombe provided an example to demonstrate:

> Three different randomly selected PJ [professional judgment] panels could be asked to estimate adequacy in two prototype schools with poverty rates of 10% and 40% (Panel 1), 10% and 60% (Panel 2), and 10% and 80% (Panel 3). If the increase in the cost of adequacy between low-poverty and high-poverty schools is about the same across the three panels, this suggests that panelists may have difficulty accurately estimating the effects of poverty on student performance. The strategic response of panel members

[39] Hanushek, "The Alchemy of 'Costing Out," 7-8.

[40] William Duncombe, "Responding to the Charge of Alchemy," 142.

[41] Ibid, 144-145.

> could be tested by comparing the results with and without a budget constraint or examining whether answers change significantly if the estimates are done individually rather than as a group.[42]

Since performance levels are established well above current performance in schools for professional judgment studies establishing predictive validity would be difficult. Duncombe suggested that "it may be possible to develop estimates of predictive accuracy of PJ estimates if performance levels or budgets are set at lower levels."[43] Members of the panels would be asked to predict student performance after budgets were set at reasonable levels within a state. "Once performance levels (and budgets) are extrapolated to all districts (based in panel estimates for prototype schools), it would be possible to examine for districts with spending in the range of the budget scenarios the difference between the predicted performance levels and actual performance levels."[44]

To eliminate biases, Duncombe suggested ways to test internal validity. "For PJ studies, explicit tests of potential biases in the data collection process and steps taken to eliminate bias would strengthen their credibility."[45] To address the bias that Hanushek found with panelists overestimating the resources needed, Duncombe stated that "PJ studies would need to estimate the size of this potential bias and demonstrate that changes in study protocol have addressed this problem."[46]

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[42] Ibid, 145.

[43] Ibid, 146.

[44] Ibid, 146.

[45] Ibid, 147.

[46] Ibid, 148.

Evidence-Based Approach

"The evidence-based approach relies on current educational research to identify the resources needed for a prototypical school to meet a state's student performance benchmarks."[47] Then "the costs of the prototypical school designs are estimated and applied to the actual schools in that state."[48] One problem with the evidence-based approach is that the strategies are difficult to cost out and are not generalizable.[49] Also, when the approach has been utilized in adequacy studies, the strategies are developed from a blank slate. The researchers do not investigate if any schools were already implementing the strategies, what the schools were spending to implement the strategies and if the schools were achieving success with the strategies. Similar to the professional judgment model, the evidence based approach is less valid and replicable when comparing the four adequacy models. Therefore, in a state like Florida with similar expenditures, the only recommendation that could come from the evidence-based approach would be to increase funding in all districts which would not be reasonable since that would include districts that are already meeting state performance standards.

Hanushek evaluated many of the evidence-based studies conducted by Odden, Picus, Goetz, and Fermanich (OPGF) and found this approach to be weak for several reasons.[50] Many of the studies that are used for the evidence-based approach are not scientifically based. Hanushek argued that "OPGF tend to select studies by their results. The studies that form the

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[47] Picus and Blair, 4-5.

[48] Ibid.

[49] Wood and Rolle, 53.

[50] Eric A. Hanushek, "Is the 'Evidence-Based Approach' a Good Guide to School Finance Policy?" Stanford University: 2006. Retrieved on April 7, 2008 from http://media.hoover.org/documents/ednext20073_73ua.pdf

basis for their recommendations tend to be those that show large impacts on student achievement."[51] Hanushek acknowledged that high quality studies should be weighted more than low quality studies. However, "it is completely inappropriate from a scientific viewpoint to choose studies on the basis of their results."[52] The biggest issue Hanushek finds with the OPGF studies "is that it does not select or concentrate on studies that credibly identify the *causal impact* of the policies considered."[53] Current education research "does not provide much confidence that instituting a particular studied policy would have anywhere near the same impact on students when implemented in a new setting."[54] Since the studies chosen "are highly selective studies from the research base, there is no reason to believe that they can be generalized."[55]

Another issue Hanushek found with the OPGF studies is that the student achievement results suggested by the studies are not credible. The recommendations suggested by OPGF list several programs for schools to implement. "They imply that the programs would work independently, so that doing all simultaneously would yield the sum of all of the effect sizes…By their estimates, student performance would improve by 3 to 6 standard deviations."[56] OPGF do not acknowledge that many of the programs they recommend have a one time impact and would not have a cumulative impact. Looking at the OPGF study from Washington 2006,

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[51] Ibid, 3.

[52] Ibid, 3.

[53] Ibid, 3.

[54] Ibid, 3.

[55] Hanushek, "Science Violated," 273.

[56] Ibid, 6.

the cumulative effect on the schools "would be *an increase in state achievement of 23 to 37 standard deviations*."[57] Hanushek explained how implausible this achievement is:

> To put this in perspective, national achievement has been assessed by the National Assessment of Educational Progress (NAEP), and this gives a consistent measure of how achievement has changed. Between 1973 and 2004, average mathematics performance of 17-year-olds in the U.S. improved by 0.1 standard deviations. While this shows the challenges facing the nation, and Washington, it also shows the difficulties. National spending per student (adjusted for inflation) more than tripled between 1960 and 2000, thus showing that resources alone were not the issue. Nor is simply uncovering the right program currently buried in the research literature, since much the same rational of 'knowing what to' (albeit by different people) has motivated previous increases in spending.[58]

Hanushek found with the OPGF report that any program they have found had a positive impact should be implemented simultaneously in all the schools regardless of price. Haunshek argued that by not being more selective with the programs chosen, OPGF recommendations will guarantee inefficiencies in school spending. Even though OPGF acknowledge that some of the programs are more cost efficient than others, they still advocate the implementation of all the programs. "*Unless there are unlimited funds to spend on educational programs, it would not make sense to put the money in all programs, regardless of cost…P*utting money equally into low return and high return programs does not make economic sense."[59]

Hanushek also argued that there is no "empirical evidence on the success of the OPGF proposals. There exists no actual demonstration that these programs will be instituted or that they will be effective. For example, virtually the same programs with the same rational have

[57] Ibid, 7.

[58] Ibid, 7.

[59] Ibid, 9.

been proposed to Arkansas and to Wyoming by this group."[60] Furthermore, the OPGF studies do not predict "student achievement will actually increase with the funding they propose. They only assert that the gains would be possible, based in their reading of past research. By phrasing everything in terms of the 'opportunity to learn,' their programs can never in the future be judged against the actual achievement."[61]

Hanushek referred to the evidence-based model as the consultants' choice model. He explained this label by stating: "The results would vary dramatically if a different set of consultants, perhaps with a different focus, attempted to apply their understanding of the existing research base,"[62] and therefore the model cannot be replicated. Baker evaluated the reliability, validity, and usefulness of the education cost studies and identified some of the same aforementioned problems. "Evidence-based models do not require rigorous meta-analysis of all available studies on each possible intervention. Nor does application of evidence-based cost analysis require that the interventions in question be evaluated with respect to specific, policy-relevant outcome measures."[63]

Duncombe also identified many of the same problems that Hanushek and Baker found with the evidence-based studies. However, Duncombe suggested ways to increase the reliability and validity of these studies.

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[60] Ibid, 10. See e.g. Lawrence O. Picus "An Evidenced-Based Approach to School Finance Adequacy in Arkansas," (Sept. 2003); Lawrence O. Picus, "An Evidence-Based Approach Recalibrating Wyoming's Block Grant School Funding Formula," (Nov. 2005).

[61] Ibid, 10.

[62] Hanushek, "Science Violated," 291.

[63] Bruce D. Baker, "Evaluating the Reliability, Validity, and Usefulness of Education Cost Studies," *Journal of Education Finance*, 32, no. 2 (2006): 173.

> Interrater reliability could be assessed for EB [evidence-based] studies by selecting different researchers to put together the package of interventions and resources to produce the performance standards. Besides selecting interventions and resource requirements, the raters could indicate what educational evaluations are the most influential in designing their proposal and for which resources or programs they think the evaluation research is weak or the results mixed. For this test to have credibility, several consultants would be needed, and they should produce their results without consulting each other.[64]

To assess construct validity, the accuracy of the information used to develop the cost estimates would need to be examined. For the evidence-based approach, "the basic data are the results from education program evaluations that are used to support a certain package of interventions. The quality of these evaluations should be assessed and reported as part of the EB study. Ideally, only high-quality evaluations would be used to support the recommended interventions."[65]

Duncombe acknowledged that it would not be possible to assess the predictive validity of evidence-based studies because the interventions recommended are hypothetical scenarios meaning no schools have used the exact package of interventions that the researchers create. Therefore, "it is not possible to assess differences between actual and predicted student performance."[66]

To eliminate potential biases and test internal validity, Duncombe suggested what researchers need to provide in their studies.

> To establish causality between a particular package of interventions, resources, and student performance levels, ideally EB studies would recommend a package of interventions that have been tested using a well-designed program evaluation. Instead, EB studies draw from the existing education program evaluation literature on individual

[64] Duncombe, "Responding to the Charge," 143.

[65] Ibid, 144.

[66] Ibid, 146.

> education interventions. More information must be provided in these studies on the evaluations on which they base their judgments and on the strengths and weaknesses of these studies. The authors need to present more explicitly how they use this research to estimate the link between resources and student performance to convince readers that there is a sound basis for these judgments.[67]

After examining the four adequacy models, it can be concluded at the present time that none of the four models can be applied to a state like Florida because the spending patterns are so similar across districts. All the models are predicated based on what others have spent in a state and the inference is drawn that if more money were spent on a group of students then achievement will increase. This is not applicable in Florida or in any other state with similar expenditures across districts. There are not significantly higher spending districts but there are many students who have high achievement.

The Four Adequacy Models

Through the data analysis, many concerns were identified related to the reliability and validity of the current adequacy methodologies. "Each approach lacks the information needed to project outcomes outside of those currently observed."[68] Additionally, "without accurately identifying current inefficiencies by schools and without specifying how added resources for a district will be used, the costing out methods lack any predictive value."[69]

> Analyzing the minimum cost needed to achieve any given outcome—the putative job of the costing out consultants—requires that cost estimation be built on the joint consideration both of program effectiveness and of costs. Obtaining an estimate of the minimum costs to reach the achievement goal is seldom even a consideration in the costing out studies. Ignoring this ensures that the results are biased above the true costs of adequacy.[70]

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[67] Ibid, 147.

[68] Hanushek, "Science Violated," 286.

[69] Ibid, 276.

[70] Ibid, 279.

"If the methods systematically produce very different results when addressing the same questions, they obviously cannot be taken as giving a reliable and unbiased estimate of the resource requirements. Nor can they satisfy the most rudimentary criteria of scientific validity."[71] In their Kansas report, Augenblick and Myers stated:

> None of these approaches are immune to manipulation; that is, each is subject to tinkering on the part of users that might change results. In addition, it is not known at this point whether they would produce similar results if used under the same circumstances (in the same state, at the same time, with similar data).[72]

After examining many of the adequacy studies, Hanushek reached the conclusion that the reports are unverifiable:

> Virtually none of the reports says that the calculated level of resources will yield the outcomes that the consultants are striving to obtain. When it comes time to write the reports—and to produce a document by which the consultants might be judged—the language generally changes to providing an 'opportunity' to achieve the standard, not actually achieving the standard…This change of language means that the consultants are not predicting any level of achievement if the stated resources are provided. None of the reports states that the added resources will yield achievement that is any higher than currently observed. The reports provide no predictions about outcomes…[73]

Although Rebell proposed ways to enhance the validity of adequacy studies he, too, acknowledged the problems with the current studies and methodologies:

> It is not, in fact, possible to definitively identify the precise amount of money that is needed for an adequate education. Although these studies use a variety of complex statistical and analytic techniques, all of them are premised on a number of critical judgments which strongly influence their ultimate outcomes. Moreover, the studies are often undertaken in the highly charged political environments created by ongoing litigation or legislative reform movements. Since the credibility and validity of all adequacy cost studies hinge on these core judgments, their internal integrity, the manner

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[71] Ibid, 290.

[72] John Augenblick and John Myers, "Calculation of the Cost of an Adequate Education in Colorado using the Professional Judgment and the Successful School District Approaches," (Jan. 2003): II-5.

[73] Hanushek, "Science Violated," 301.

> in which they have been formulated, and the extent to which they have the subject of fair open public discussion should be subjected to extensive, ongoing professional and public scrutiny.[74]

Using multiple methodologies to configure the cost of an adequate education has been done in some studies.[75] To enhance the validity of adequacy studies, Rebell stated:

> …every costing-out study should incorporate multiple methodologies. Since costing out is not an exact science and each of the costing-out methodologies is based on series of explicit or implicit judgments, the best way to highlight and resolve differences in these judgments or in the results that they yield is to juxtapose the results of the application of one methodology with the results of an alternate approach.[76]

Duncombe acknowledged that most education adequacy studies have not established reliability and validity. In order to increase the reliability and validity in these studies Duncombe recommended that "funding of basic adequacy research should be by neutral parties, such as foundations or the federal government, not parties with a direct interest in the outcome."[77] "To encourage more systematic evaluation of COS estimates, this research must move away from the advocacy environment to the realm of social science research, where methods can be tested and evaluated without pressure to produce only one answer."[78]

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[74] Rebell, 1305.

[75] See e.g., John Augenblick and John Myers, "Calculation of the Cost of an Adequate Education in Colorado using the Professional Judgement (sic) and the Successful School District Approaches," (Jan. 2003); John Augenblick, John Myers, Justin Silverstein, and Anne Barkis, "Calculation of the Cost of a Suitable Education in Kansas in 2000-2001 using Two Different Analytical Approaches," (May 2002); Legislative Division of Post Audit State of Kansas, "Elementary and Secondary Education in Kansas: Estimating the Costs of K-12 Education Using Two Approaches," (Jan. 2006); John Augenblick and John Myers, "Calculation of the Cost of an Adequate Education in Maryland in 1999-2000 Using Two Different Analytic Approaches," (Sept. 2001); R. Craig Wood, Donald Robson, Merle Farrier, Stephen Smith, Joyce Silverthorne, and Michael Griffith, "Determining the Cost of Providing an Adequate Education in the State of Montana," (Oct. 2005); R.C. Wood & Associates, "State of Rhode Island Education Adequacy Study," (March 2007);

[76] Rebell, 1334.

[77] Duncombe, "Responding to the Charge of Alchemy," 138.

[78] Ibid, 166-167.

Summary

This chapter presented the strengths and weaknesses of the current methodologies to determine adequate funding for schools. Also presented in this chapter was how a state like Florida with similar expenditures could utilize any of these methodologies. Reliability and validity issues about the methodologies identified by several researchers were discussed. Conclusions and recommendations were discussed in chapter 5.

CHAPTER 5
CONCLUSIONS AND RECOMMENDATIONS

Introduction

The purpose of this study was to examine the different methodologies utilized to determine what an adequate education would cost and if there were a model that could be used in a state like Florida with similar expenditures across districts. Fifty-one adequacy studies were reviewed for this study. These adequacy studies were included because the researchers of those studies released them to the public. In chapter 4 the results of the content and policy analysis were presented. This chapter provides a summary of the findings, implications for future research, and recommendations for future adequacy studies.

This study specifically addressed the following four questions:

1. What are the strengths and weaknesses of the current methodologies used to determine adequate funding?

2. Did the previous adequacy studies use the previously stated methodologies and if so did they use them correctly?

3. Using this information previously stated how does a state like Florida that has similar expenditures between districts utilize the methodologies?

4. Can an adequacy model be developed or applied for a state like Florida?

Findings

The focus of this study was on the four adequacy methodologies utilized in the various state adequacy studies to configure a cost estimate for an adequate education. The purpose of the study was to determine if a model could be used for a state like Florida with similar expenditures across districts. Through the content analysis, strengths and weaknesses were identified for each of the four education adequacy methodologies. For each methodology, strengths and weaknesses

were summarized. Then common strengths and weaknesses were discussed. The results of the four research questions were summarized below:

Research Question 1

Statistical modeling/cost function approach

A strength of this approach is that it has "unique power for calculating the added costs of dealing with poverty, bilingual populations and other special populations."[79] Additionally, replication of the study and sensitivity analysis could be completed at minimal cost.[80] Furthermore, "test-retest reliability tests of CF results are also feasible for estimating the same CF at several periods."[81]

Several weaknesses were identified with the cost function approach: it is complicated, it usually looks at one standard for student achievement such as test scores, and it relies on the existence of educational production function.[82] Also, "the cost function results can be sensitive to what efficiency factors are included"[83] and some researchers have difficulty controlling for efficiency.

Successful schools model

A strength of this approach is that adjustments can be made for higher needs districts or students.[84] Also, this method can take into account more than one measure of student

[79] William J. Mathis, "Equity and Adequacy," 13.

[80] William Duncombe, "Responding to the Charge of Alchemy."

[81] Ibid, 143.

[82] Addonzio.

[83] William Duncombe, "Estimating the Cost of an Adequate Education in New York, Working Paper no 44," (Feb. 2002): 5.

[84] Ibid.

achievement. A third strength is that this approach uses data from the current funding and outcomes of schools.

Some weaknesses have been identified with this approach. First, districts that are producing adequate results inefficiently may be included which could lead to overfunding.[85] Also, this approach assumes that differences in funding correlate to variations in performance. Two extrapolation concerns were identified by Hanushek: since real school data is used for this method, new levels outside the range of the current outcomes cannot be inferred.[86] Additionally, besides telling schools to spend the base amount configured which many schools may already be doing, directions for different populations are not provided.[87]

Professional judgment approach

A statewide testing system is not necessary for this approach which can be considered a strength if the data did not exist. Another strength is that educators currently in the field are selected for the panels. Further, the results of this approach are easy to understand. Adjustments can be made for cost of living differences across districts.[88]

Several weaknesses have been identified for this approach. One weakness of this approach is that it assumes that higher expenditures equal higher achievement. A second weakness is that achievement data from the state is not utilized for this approach. A third weakness identified is that coming to a consensus among so many educators may be difficult. Fourth, the educators selected to serve on the panels are not randomly selected which makes

[85] Guthrie and Rothstein, 224.

[86] Hanushek, "Science Violated."

[87] Ibid.

[88] Mathis, "Equity and Adequacy."

replicating the study virtually impossible.[89] Still another weakness is that panels are not asked to identify the minimum expenditure necessary for students to reach a given standard[90] and therefore the resources identified tend to be overestimated.[91] Finally, creating prototype districts assumes that the results can be generalized to all districts.[92]

Evidence-based approach

A strength of this approach is that current educational research is used to identify programs. Another strength is that adjustments can be made for special groups of students such as limited English, low income, and special education.

One weakness of this approach is that the strategies selected are not from high quality studies and therefore are not generalizable.[93] Additionally, the student achievement results suggested by this approach are not credible.[94] Furthermore, by not being more selective with the programs, inefficiencies in school spending are guaranteed.[95] There is no observed evidence that the programs suggested by using this approach are effective and that student achievement would increase.[96] This approach does not use current spending or achievement results of districts.

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[89] Eric A. Hanushek, "Science Violated: Spending Projections and the 'Costing Out' of an Adequate Education," in *Courting Failure: How School Finance Lawsuits Exploit Judges' Good Intentions and Harm Our Children*, Eric A. Hanushek, Ed., (Stanford: Education Next Books, 2006).

[90] Ibid.

[91] John Augenblick, John Myers, Justin Silverstein, and Anne Barkis, "Calculation of the Cost of a Suitable Education in Kansas in 2000-2001 using Two Different Analytical Approaches," (May 2002).

[92] Mathis, "Equity and Adequacy," 2003.

[93] Hanushek, "Science Violated," 2006.

[94] Ibid.

[95] Ibid.

[96] Ibid.

The four adequacy methodologies

There are some common weaknesses with all of the costing out methods. "Without accurately identifying current inefficiencies by schools and without specifying how added resources for a district will be used, the costing out methods lack any predictive value."[97] Also, "each approach lacks the information needed to project outcomes outside of those currently observed."[98]

Rebell summarized the problems with the current studies and methodologies:

> It is not, in fact, possible to definitively identify the precise amount of money that is needed for an adequate education. Although these studies use a variety of complex statistical and analytic techniques, all of them are premised on a number of critical judgments which strongly influence their ultimate outcomes. Moreover, the studies are often undertaken in the highly charged political environments created by ongoing litigation or legislative reform movements. Since the credibility and validity of all adequacy cost studies hinge on these core judgments, their internal integrity, the manner in which they have been formulated, and the extent to which they have the subject of fair open public discussion should be subjected to extensive, ongoing professional and public scrutiny.[99]

Research Question 2

For each of the adequacy studies summarized in chapter 2, the methodologies utilized were identified. It can be deduced after researching all of the studies that most researchers prefer certain methodologies and conduct their studies in similar ways regardless of the state they are studying. Some researchers provide more in-depth explanations of their methodologies utilized in their studies. When comparing the four adequacy methodologies previously discussed to how

[97] Ibid, 276.

[98] Ibid, 286.

[99] Rebell, 1305.

those methodologies are utilized in the adequacy studies, it can be concluded that the researchers used the methods correctly.

Research Question 3

In chapter 4, each adequacy methodology was summarized and discussed if it were possible for a state like Florida to utilize any of these approaches. The cost function approach would be difficult to apply in Florida since the expenditures are similar across districts. Cost function studies "attempt to determine how much a particular school district would need to spend relative to the average district to produce a set performance target, given the characteristics of the school district and its student body."[100] Specifically, cost function analyses describe how "levels of spending may vary for districts of different characteristics that serve different student populations."[101] In Florida, the model would not provide variations in spending and therefore would produce less valid results due to the similar expenditure levels across districts.

For the successful school district approach, researchers or policymakers identify districts that have met state performance standards based on state tests. "Spending levels in those districts are used to calculate a base cost for adequate spending per pupil-the costs of serving a student with no special needs. Adjustments for student and district characteristics are then made."[102] This approach assumes that differences in funding correlate to variations in performance. Since Florida's school districts have similar expenditures no district in Florida would meet the definition for a successful school because the spending of the successful schools would be within the same spending pattern as non-successful schools.

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[100] Ibid, 1311-1312.

[101] Ibid, 1312.

[102] Picus and Blair, 4.

For the professional judgment approach, teams of education experts meet and independently identify the educational resources needed to create schools in which educators have confidence that most of the students in the school will be able to meet the state-established performance goals.[103] Then the cost of the resources is configured to ascertain the adequate cost for a school. This approach assumes that higher expenditures equal higher achievement which is not a guarantee and in a state like Florida with similar expenditures across districts, this assumption could not be validated.

"The evidence-based approach relies on current educational research to identify the resources needed for a prototypical school to meet a state's student performance benchmarks."[104] Then "the costs of the prototypical school designs are estimated and applied to the actual schools in that state."[105] One problem with the evidence-based approach is that the strategies are difficult to cost out and are not generalizable.[106] Also, when the approach has been utilized in adequacy studies, the strategies are developed from a blank slate. The researchers do not investigate if any schools were already implementing the strategies, what the schools were spending to implement the strategies and if the schools were achieving success with the strategies. Similar to the professional judgment model, the evidence-based approach is less valid and replicable when comparing the four adequacy models. Therefore, in a state like Florida with similar expenditures, the only recommendation that could come from the evidence-based

[103] Conley and Picus, 588.

[104] Picus and Blair, 4-5.

[105] Ibid.

[106] Wood and Rolle, 53.

approach would be to increase funding in all districts which would not be reasonable since that would include districts that are already meeting state performance standards.

Research Question 4

After examining the four adequacy models, it can be concluded at the present time that none of the four models can be applied to a state like Florida because the spending patterns are so similar across districts. All the models are predicated based on what others have spent in a state and the inference is drawn that if more money is spent on a group of students then achievement will increase. This is not applicable in Florida or in any other state with similar expenditures across districts. There are not significantly higher spending districts but there are many students who have high achievement.

Conclusions

The results of this study found that the four adequacy methodologies, cost function, successful school district, professional judgment, and evidence-based, currently being utilized to configure the cost of an adequate education in several states cannot be used in the state of Florida or any state that has similar expenditures across districts. All of the approaches assume that higher expenditures equal higher achievement which can be refuted when comparing the achievement of students across Florida. This study exemplified the limited strengths and the many weaknesses found in the four adequacy methodologies.

After examining the restricted ranges of the fifty states and Washington, DC, it can be concluded that restricted range determines adequacy. In states with a small restricted range like Florida there are no rich districts and therefore none of the four adequacy models can be applied. The main reason for conducting an adequacy study is to determine how much more money is

needed to increase achievement. When money is removed from the equation (i.e. restricted range) there is no reason to conduct an adequacy study.

The four adequacy methodologies cannot be used in the state of Florida to determine what an adequate education costs. The cost function method is not appropriate to use in the state of Florida because it compares the spending of school districts to the spending of the average school district. Since there are similar expenditures across Florida's school districts the cost function method would not provide variations in spending.

The successful school district model is not appropriate to use in the state of Florida because only average expenditures are considered for districts that are meeting state standards. This method assumes that differences in funding correlate to variations in performance. Since the restricted range for Florida's school districts is small, no district in Florida would meet the definition for a successful school because the spending of the successful schools would be within the same spending pattern as non-successful schools.

The professional judgment approach is not appropriate to use in the state of Florida because teams of educators identify the educational resources needed to create prototype schools where most students can meet state standards. Then the researchers configure the cost of an adequate education by pricing out the resources. This approach assumes that higher expenditures equal higher achievement, which is not a guarantee and in a state like Florida with similar expenditures across districts, this assumption cannot be validated.

The evidence-based approach is not appropriate to use in the state of Florida because researchers identify and cost out the resources needed in schools in order for students to reach state standards. This method assumes that more money will produce higher student achievement. In a state like Florida with a small restricted range, the only recommendation that

could come from this approach would be to increase funding in all districts which would not be reasonable since that would include districts that are already meeting state performance standards.

Implications and Suggestions for Future Research

The purpose of this study was to determine if there were an adequacy model that could be used in the state of Florida by analyzing the different methodologies utilized to configure the cost of an adequate education. The results of the content analysis determined that the four methodologies currently being utilized cannot be used in the state of Florida. The results of the content analysis also revealed the many weaknesses found in the four adequacy methodologies. Given that funding education adequately is a topic that continues to be discussed throughout the United States there is a need for further research on this topic.

Since the four adequacy approaches assume that higher expenditures produce higher achievement and this is not a guarantee, future studies should shift from identifying a specific cost to analyzing what programs or resources schools that are meeting state performance standards are utilizing. Besides identifying successful programs for typical students, other factors (e.g., socio-economic status, race, lowest performing students, special education, and second language learners) could be examined to determine what schools are specifically doing to help different groups of students achieve to the state standards.

Another research study could utilize one of the adequacy studies already completed that had been adopted by a state legislature and implemented into schools or districts. Then comparisons could be made to determine if the recommendations from the study had created higher student achievement than prior to the implementation of the program.

Recommendations

Through the literature review and data analysis, many recommendations were discovered that would strengthen the reliability and validity of education adequacy methods and future adequacy studies. First, "funding of basic adequacy research should be by neutral parties, such as foundations or the federal government, not parties with a direct interest in the outcome."[107] Second, "every costing-out study should incorporate multiple methodologies."[108] Third, participants should be randomly selected for the professional judgment panels so that the study could be replicated. For the evidence-based and cost function approaches, interrater reliability could be tested by having different researchers configure the costs/programs for the same state at the same time period.

[107] Duncombe, "Responding to the Charge," 138.

[108] Rebell, 1334.

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BIOGRAPHICAL SKETCH

Lori Rosen Benton was born in Morristown, New Jersey, the youngest of five children. She received her public school education in Parsippany, New Jersey, and graduated from Parsippany High School in 1992. She graduated from the University of Florida with a Bachelor of Arts in Education with honors in 1996, a Master of Education in 1997, and a Specialist in Education in educational leadership in 2002. In December 2008, she received a Doctor of Philosophy degree in educational leadership from the University of Florida.

Lori began her professional career teaching first grade at Oak Hill Elementary School in Orlando, Florida. Then she taught a multi-age kindergarten and first grade class at Windy Ridge K-8 School in Orlando, Florida. After that Lori served as the primary reading specialist for kindergarten through third grade students at Windy Ridge K-8 School. In 2003, she was appointed as assistant principal at Oakshire Elementary School in Orlando, Florida where she served for two years.

While working on her Bachelor of Arts degree at the University of Florida, Lori met her husband, Rich. They married after graduation and have two daughters. In 2007, she resigned from Orange County Public Schools to stay home with her small children. She plans to return to administration when her daughters are older. Her long-term career goals include writing books and becoming a professor