

POVERTY AND STUDENT ACHIEVEMENT: THE APPLICATION OF  
COMPENSATORY PRACTICES TO EDUCATION FUNDING IN THE STATE OF  
FLORIDA

By

JEREMY ALLEN MOORE

A DISSERTATION PRESENTED TO THE GRADUATE SCHOOL  
OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

2011

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To

My dad who instilled in me faith, curiosity, self-efficacy and a genuine love of learning,  
and my mom, whose soft heart and kindness are unparalleled

To

Diane who taught me the art of organization, among many things, and to Tiffany, whose  
love, optimism, and encouragement have been an unwavering support

## ACKNOWLEDGMENTS

I want to thank God for granting me the abilities and opportunities to receive a high-quality education, and for filling me with a desire for life-long learning.

The support of my family throughout my life has been fundamental to successes I have experienced. My dad shaped me with love and discipline as a child, and through both nature and nurture, imparted to me some of his creativity and aptitude to understand things and do things. He is an interesting, talented and delightful man and I am proud to call him my father. My Mother's unconditional love and kindness has always been inspiring to me. She is selfless in a way that is beyond compare. My step-mother Diane taught me as a 4<sup>th</sup> grade student, and then simply never stopped. I would not have succeeded in schools or in life without her support, guidance, and efforts on my behalf.

I would like to thank my wife Tiffany. I only succeeded in completing this dissertation by her grace. She never once voiced her discontent that my time was taken for research and writing, even though we were planning our wedding during the final stages of this process. She is loving, understanding and supportive, and her brilliant positive energy is contagious. I love her very much. We are optimistic about our future abroad, and are excited to start a new chapter of our lives together.

I want to mention my family in Georgia. Traci, Paul, Nick and Jena are a testimony to the fact that family is truly the greatest priority. I admire their faith, and enjoy all the times we spend together; I wish there were more of them. Best wishes to my sister Gen and her new marriage, Brent who will be graduating from high school soon, and Bruce who unconditionally loves and cares for my mother.

I would like to acknowledge some friends that have played a significant role in my life and have helped to shape me into who I am as a person. There is no doubt that I learned from the family values, ambitious nature, and class of the Collins family. As a childhood friend, Paul and his family were excellent role models for me and I love them to this day. Dr. Gio Valiante has been an influential friend since we met at the University of Florida during our undergrad years. Our philosophical dialogue (and our meaningless banter) is something that I cherish. We understand each other at a deeper level, and experience life in much of the same ways. Charlie and Krissy Sternberg are the greatest of friends and I miss them often. Everyone loves their fun personalities, Charlie's quirkiness, and Krissy's charm. I have been blessed with many great personal friends in recent years. All of these people mean more to me than they really know.

Other friends have played a significant role in my professional life as an educator. Robert, Don, Pete, Molly, the Olympia crew, Polly and the Blankner folks, were all involved in my development as a school administrator. We had a unique synergy of good people who knew how to work hard and play hard, we helped each other grow in many ways, and we will always be friends because of it.

My committee chair, Dr. R. Craig Wood, has been an instrumental part of this long journey. I would like to thank him for the time and effort he provided in helping me reach my goal. His incredible wealth of knowledge in finance and law has been invaluable in accomplishing this task. His knowledge of English grammar was of great assistance, and his humorous demeanor is endearing. I would also like to thank my other committee members, Dr. James Doud, Dr. David Honeyman, and Dr. David Miller for the time they spent to help stretch my thinking and refine my research.

This doctoral program has been a significant part of my life for many years. The experience has facilitated my professional growth, and caused me to reflect on my life, priorities, and ambitions. I want to thank all of the members of the doctoral cohort who I began the program with. We spent countless hours together in classes and studies, and shared in each other's lives for several years. I am a better educator and a better person as a result of my time with these colleagues. And now it is time for post-dissertation mental serenity.

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Abstract of Dissertation Presented to the Graduate School  
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Jeremy Allen Moore

December 2011

Chair: R. Craig Wood  
Co-Chair: David S. Honeyman  
Major: Educational Leadership

It is commonly argued that the burdens of poverty have a negative effect on student achievement in schools. Historically in the United States, efforts have been made to address the ills of poverty and its impact in classrooms, and supplementary funding has been legislated for students from low socio-economic backgrounds. It is debatable whether monetary increases can be directly associated to improvements in student achievement. Measuring the degrees to which poverty and achievement are associated can be crucial information for policymakers, and a review of the compensatory practices of state legislatures, juxtaposed with Florida's education finance program, provides basis for research.

This study determined if there were associations between Free and Reduced-Price Lunch (FRPL) eligibility percentages and student testing results from the Florida Comprehensive Assessment Test (FCAT), displaying a relationship between poverty and achievement in Florida schools. In addition, this study reviewed compensatory practices of the fifty state legislatures and employed a theoretical poverty weight for the funding system in Florida. Furthermore, the poverty weights utilized in a contemporary

adequacy study were initiated into the Florida Education Finance Program (FEFP). This study correlated poverty and student achievement in Florida schools, and presented the funding implications of applying theoretical compensatory practices into the Florida's funding formula.

This study was successful in quantifying correlations between poverty and student achievement in Florida by utilizing FRPL as a proxy for poverty and FCAT as an indicator of student achievement. Correlation results ranging from -0.761 to -0.855 demonstrated strong associations between these variables. Over the span of years observed, as poverty levels increased in Florida schools, 76 percent to 86 percent of the corresponding student achievement scores decreased. These connections provided measured relationships between poverty and student achievement.

Compensatory practices of state legislatures and a recent adequacy study were the basis for establishing theoretical poverty weights. The fiscal implications of applying these weights to the FEFP were concluded. The additional cost of operationalizing the poverty weight of 0.193 in the FEFP was calculated at \$975,311,823. The poverty weight applied in this scenario increased the total education funding in 2010-2011 by 5.39 percent. The additional funding generated in the FEFP by employing the poverty weight of .25 was \$1,267,259,596, and the increase in funding displayed by including the poverty weight of .40 was \$2,043,470,009. The .25 poverty weight increased overall education funding in Florida by 7 percent, and the .40 poverty weight increased funding by 11.3 percent. This study was successful in quantifying correlations between poverty and student achievement in Florida, and demonstrated the fiscal consequences of applying compensatory practices to Florida's education finance program.

## CHAPTER 1 INTRODUCTION

The immense field of education finance is rife with cogent issues, often controversial, addressing everything from the smallest school budget to panoptic programs and international affairs. Financing of public elementary and secondary education reaches out into countless aspects of society, and in some way impacts the lives of almost every citizen. It is easy to understand why educators, economists, politicians and theorists around the world debate and altercate over money and schooling. The relationships between money, funding systems, poverty, and achievement create a host of problems that sometimes lack plausible definitive solutions. Analyzing these various relationships establishes a foundation for this study.

Poverty is a perpetuating social issue that has undeniable associations to the world of education. There are several definitions of “poverty” and multifarious formal indicators that researchers use to distinguish levels of economic disadvantage. In education finance research, the most commonly utilized indicator for poverty is the percentage of students receiving free or reduced price lunches in accordance with the National School Lunch Program (NSLP).<sup>1</sup> There are limitations in utilizing Free and

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<sup>1</sup> See e.g. numerous studies that utilize this procedure: Anthony Rolle and Keke Liu, “An Empirical Analysis of Horizontal and Vertical Equity in the Public Schools of Tennessee, 1994-2003,” *Journal of Education Finance* 32, no. 3 (2007): 328-351; Carolyn A. Brown, “Are America’s Poorest Children Receiving Their Fair Share of Federal Education Funds? School Level Title I Funding in New York, Los Angeles, and Chicago,” *Journal of Education Finance* 33, no. 2 (2007): 130-146; G. Kennedy Greene, Luis A. Huerta, and Craig Richards, “Getting Real: A Different Perspective on the Relationship Between School Resources and Student Outcomes,” *Journal of Education Finance* 33, no. 1 (2007): 49-68; Kern Alexander and Andrew Wall, “Adequate Funding of Education Programs for At- Risk Children: An Econometric Application of Research-Based Cost Differentials,” *Journal of Education Finance* 33, no. 1 (2006): 297-319; Augustina Reyes, “Texas State Compensatory Education,” *Journal of Education Finance* 31, no. 3 (2006): 221-237; Bruce D. Baker, “The Emerging Shape of Educational Adequacy: From Theoretical Assumptions to Empirical Evidence,” *Journal of Education Finance* 30, no. 3 (2005): 259-287.

Reduced-Priced Lunch (FRPL) percentages for research, including data reporting difficulties, families who choose not to participate in the NSLP, student stigmas, and FRPL fraud that may skew research to some degree. Despite some limitations, FRPL data has been demonstrably effective in education finance and child poverty research. This indicator is utilized in this study to determine varying percentages of poverty among Florida schools.

There is a substantial body of literature denoting numerous factors which place students at risk of academic failure, and it is widely held that poverty is a pivotal factor having the potential to negatively affect the achievement of students. The relationship between money and achievement is highly researched and contested, resulting in volumes of valuable studies, yet delivering little clarity or conclusive findings that practitioners and policymakers hold to be incontrovertible. Several of these studies were initiated in response or rebuttal to the controversial “Coleman Report” in 1966, which many interpreted to claim that resources and schools have little effect on student achievement.<sup>2</sup> Numerous academic works of a similar nature have been conducted subsequently, many refuting this assertion and others substantiating it.<sup>3</sup> These studies hold a common desire to answer the question, “If schools were provided with more money, will student achievement increase?” A meta-analysis of these *production*

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<sup>2</sup> James Coleman, Ernst Campbell, Carol Hobson, James McPartland, Alexander Mood, Frederic Weinfeld, and Robert York, *Equality of Educational Opportunity*, Washington, DC: U.S. Government Printing Office (1966).

<sup>3</sup> See e.g. works supporting Coleman Report: Christopher Jencks, *Inequality: A Reassessment of the Effect of Family and Schooling in America* (New York: Basic Books, 1972); Eric Hanushek, “The Impact of Different Expenditures on School Performance,” *Educational Researcher* 18, no. 4 (1989): 45-51. See e.g. contra: Anita A. Summers and Barbara L. Wolfe, “Do Schools Make a Difference?” *The American Economic Review* 67, no. 4 (1977): 639-652; 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): 5-14.

*function* research studies displays patterns and generalizations that serve as a basis for theory.<sup>4</sup> An investigation of American poverty, its effects on student achievement, and production function research are vital elements of this examination.

It is evident that public schools cannot exist without some level of resources and funding, but the relationship between money and student achievement is an enduring conundrum. There is not a direct correlation between dollars spent and achievement results for students.<sup>5</sup> Money is absolutely necessary to operate a public school with the purpose of developing active productive citizens and increasing human capital. Student achievement realized in a school setting requires an investment. Increasing student achievement for students who come from a background of poverty requires even more of an investment. It is undeniable that the education of poor students necessitates greater expenditures than the education of other students to reach a given academic standard.<sup>6</sup> Educators, policymakers, economists, and taxpayers want to determine the most productive and efficient investment that will yield adequate levels of student achievement. What is the right amount of money to devote to educational purposes in order to obtain adequate results? What compensatory measures are appropriate for students in poverty? Answers vary. A review of public school funding and related research can elucidate some issues.

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<sup>4</sup> 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): 5-14.

<sup>5</sup> Eric Hanushek, "Throwing Money at Schools," *Journal of Policy Analysis and Management* 1, no. 1 (1981): 19-41.

<sup>6</sup> Vern Brimley and Rulon Garfield, *Financing Education in a Climate of Change*, 8<sup>th</sup> ed. (Boston: Allyn & Bacon, 2002).

The expenditures for K-12 public education in the United States have increased considerably in the last century, yet it is debatable whether the outcomes justify the noted escalation in funding. Public education is the single largest area of state and local government spending in the United States, accounting for approximately one-fifth of direct state and local government expenditures in 1996.<sup>7</sup> Education expenditures, adjusted for inflation, increased from \$2 billion in 1890 to almost \$190 billion in 1990.<sup>8</sup> Real per pupil expenditures increased by nearly 70 percent in the 1960s, increased approximately 22 percent in the 1970s, and increased more than 48 percent in the 1980s.<sup>9</sup> In 2000, public elementary and secondary schools were funded a total of \$396.5 billion. These funds derived from federal (7 percent), state (51 percent) and local (42 percent) sources. Teacher salaries accounted for about 53 percent of spending for school districts. When districts received additional funds, about 40 percent was allocated for class size reductions and 10 percent spent on increased teacher salaries.<sup>10</sup> Other monies were utilized for support services, building operation and maintenance, administration, transportation, and other support functions. Recent data indicates that \$476.8 billion was spent on public elementary and secondary education in the United States during the year 2007. Sixty-one percent of these dollars were expenditures on

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<sup>7</sup> Michele Moser and Ross Rubenstein, "The Equality of Public School District Funding in the United States: A National Status Report," *Public Administration Review* 62, no. 1 (2002): 63-72.

<sup>8</sup> Eric A. Hanushek, *Making Schools Work: Improving Performance and Controlling Costs* (Washington D.C.: The Brookings Institution, 1994).

<sup>9</sup> Lawrence O. Picus, "The \$300 Billion Question: How Do Public Elementary and Secondary Schools Spend Their Money?" Paper presented at the 1994 annual meeting of the American Education Research Association. New Orleans, LA.

<sup>10</sup> Steve Barro, "What Does the Education Dollar Buy?: Relationships of Staffing, Staff Characteristics, and Staff Salaries to State Per-Pupil Spending" Los Angeles, CA: The Finance Center of CPRE

instruction, 5.3 percent on student support services, 4.9 percent on instructional support staff, 2.0 percent on general administration, 5.6 percent on school administration, 9.8 percent on operation and maintenance, 4.2 percent on student transportation, 3.3 percent on other support services, 3.8 percent on food services, and 0.2 percent on enterprise operations.<sup>11</sup> The persisting pattern of resource allocation has been cited as a possible cause for the ambiguous link between funds and outcomes.<sup>12</sup> Education dollars, on an inflation adjusted, per pupil basis, are about three times higher today than they were forty years ago. Much of these dollars have been utilized to add professional staff in the areas of art, music and physical education, as well as adding large numbers of instructional aides to school staffs.<sup>13</sup> From 1985 to 2007, the inflation-adjusted per pupil expenditure for public elementary and secondary education rose by almost \$4,000. A study published by the Economic Policy Institute asserts that reports of longitudinal inflation-adjusted spending numbers are overstated based on the fact that purchases made by public schools are different than those typically made under the Consumer Price Index (CPI) used to measure inflation.<sup>14</sup> Long-term national enrollment trends indicate large increases in students identified as having disabilities that require expensive special education services. These services account for a significant portion of

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<sup>11</sup> National Center for Education Statistics, Revenues and Expenditures for Public Elementary and Secondary Education: School Year 2006–07 (Fiscal Year 2007).

<sup>12</sup> Bruce S. Cooper, "Making Money Matter in Education: A Micro-Financial Model for Determining School-Level Allocations, Efficiency, and Productivity," *Journal of Education Finance* 20 (1994): 66-87.

<sup>13</sup> Allen Odden and Carolyn Busch, *Financing Schools for High Performance: Strategies for Improving the Use of Educational Resources* (San Francisco: Jossey-Bass, 1998).

<sup>14</sup> Richard Rothstein and Karen Hawley Miles, *Where's The Money Gone? Changes in the Level and Composition of Education Spending*, Economic Policy Institute, 1995.

the increases in education expenditures.<sup>15</sup> Many different analyses of education expenditures exist, but it is certain that the gross amount of resources dedicated to education has increased over time.

Significant amounts of money are utilized to educate students in the United States. Funding comparisons concerning the United States and other developed countries who are members of the Organization for Economic Cooperation and Development (OECD) can provide another perspective. In 2007, the United States ranked 5<sup>th</sup> out of 30 nations in the amount of educational expenditure per student. When including poverty and disability as factors into the comparison, the United States ranked thirteenth. The United States ranked 22<sup>nd</sup> out of 30 OECD nations for fiscal effort per \$1,000 of Gross Domestic Product.<sup>16</sup> “Adequacy of funding of public schools in the United States can be viewed from the simple perspective of expenditures per student, or it can be viewed from the more complex and accurate vantage point that takes into account the heterogeneity of the student population, the diversity of education needs, and the tax effort a nation is willing to incur to fund its public school system. A nation’s commitment to education cannot be determined accurately without consideration of all four of these elements.”<sup>17</sup> The United States educates considerably more students who come from a background of poverty than most other OECD countries. The complexity of needs of U.S. students is different than other developed nations.

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<sup>15</sup> Richard Rothstein and Karen Hawley Miles, *Where's The Money Gone? Changes in the Level and Composition of Education Spending*, Economic Policy Institute, 1995.

<sup>16</sup> National Center for Education Statistics, Condition of Education 2007, <http://nces.ed.gov/pubs2007/2007064.pdf>

<sup>17</sup> Alexander and Wall, “Warranting Failure: The “System” That Breeds Poverty and Starves Public Schools”

Despite the significant monies allocated to educational purposes in the United States, positive results in student achievement are not assured. The Program for International Student Assessment (PISA) is a system of international assessments that measures literacy, mathematics, and science of 15-year-old students. PISA is sponsored by OECD. In 2006, students in the United States had an average score of 489 on the combined science scale, lower than the OECD average score of 500. The average U.S. score in mathematics was 474, lower than the OECD average of 498.<sup>18</sup> These scores do not reflect differences in student populations among nations, including the factor of poverty. The Scholastic Assessment Test (SAT) is a commonly used, and debated, measure for comparisons of student academics. The average per pupil expenditure from 1968-1993 increased from approximately \$3,000 to nearly \$6,000, while the average SAT score decreased from 960 to nearly 900 during the same period.<sup>19</sup> This drop may be accounted for by considering the significant increase in the numbers of students taking the exam over time, including more low and average achieving students, coupled with a significant increase in percentage of low-income and minority test takers.<sup>20</sup> Another method of analyzing student achievement is longitudinal review of NAEP data in reading, writing, math and science. Student performance in these subject areas did not increase at the same rate as the 22 percent rate of increase

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<sup>18</sup> Highlights From PISA 2006: Performance of U.S. 15-Year-Old Students in Science and Mathematics Literacy in an International Context, [nces.ed.gov/pubs2008/2008016.pdf](http://nces.ed.gov/pubs2008/2008016.pdf)

<sup>19</sup> National Center for Education Statistics, Digest of Education Statistics, <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=94115>

<sup>20</sup> National Center for Education Statistics, Digest of Education Statistics, [http://nces.ed.gov/pubs2007/minoritytrends/ind\\_3\\_14.asp](http://nces.ed.gov/pubs2007/minoritytrends/ind_3_14.asp)

in spending during the 1970s, nor the 48 percent increase during the 1980s.<sup>21</sup> These data reinforce the fact that an increase in spending does not proportionally correlate with an increase in student achievement results. Due to absence of this parallel relationship, research on the association between money and achievement has been prolific.

In the past two decades, education finance research has focused on the topic of adequacy. Different approaches emerged as researchers continued to address the question of how much money is necessary for an adequate education. The Professional Judgment approach, the Evidence-Based approach, the Successful Schools approach, and the Statistical Analysis approach have been utilized to determine education adequacy.<sup>22</sup> Few studies utilize all four approaches in determining results.<sup>23</sup> The results of these adequacy studies have been particularly significant to the outcomes of education litigations across the United States and have far reaching implications.<sup>24</sup> Various adequacy studies include a focus on compensatory elements to address students in poverty. These compensatory practices vary, yet it is recognized that additional resources are a necessity for students from low income families.

Unique differences in states have led to variations in taxation and school funding mechanisms. Under The Tenth Amendment of The United States Constitution,

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<sup>21</sup> National Center for Education Statistics, Digest of Education Statistics, <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=94115>

<sup>22</sup> Odden, Allan, and L. O. Picus, 2000. *School finance: A Policy Perspective*. New York: McGraw-Hill.

<sup>23</sup> R. Craig Wood and Anthony R. Rolle, "Improving "Adequacy" Concepts in Education Finance: A Heuristic Examination of the Professional Judgment Research Protocol," *Educational Considerations* 35, no. 4 (2007): 51-55.

<sup>24</sup> David C. Thompson, R. Craig Wood, and Faith E. Crampton, *Money and Schools* (New York: Eye on Education, 2008).

education is affirmed as a state responsibility.<sup>25</sup> Federal interest and involvement is extensive and influential, yet each state legislature maintains direct control, including responsibilities for funding schools. Each legislature approaches education finance in a different manner, and historically there have been vast disparities and inequities in resource allocations within and among states.<sup>26</sup> In the early 1900s, education finance researchers asserted the belief that all children of a state were equal and were entitled to equal advantages. This concept addressed the vast funding disproportions within states, began to shift control from locally taxed districts to state control, and eventually initiated the concept of state aid formulas.<sup>27</sup> Multiple researchers contributed, adding a variety of complexities to basic state formulas in attempts to move closer toward finance equity and address specific state needs. Moving beyond horizontal fairness and considering all children as equals, state legislatures have created vertical adjustments to basic formulas, accounting for district and student differences that require variations in funding.<sup>28</sup> The majority of state legislatures incorporate multiple classifications of vertical adjustments in formulas in order to address the needs of different student populations. This type of need equalization creates the basis for compensatory education, bilingual education and special education supports, and sets the foundation

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<sup>25</sup> U.S. CONST. amend. X

<sup>26</sup> Lawrence Picus, Allan Odden, and Mark Fermanich, "Assessing the Equity of Kentucky's SEEK Formula: A 10-Year Analysis," *Journal of Education Finance* 29, no. 4 (2004): 315-335; Ross Rubenstein, Dwight Doering, and Larry Gess, "The Equity of Public Education Funding in Georgia," *Journal of Education Finance* 26, no. 2 (2000): 187-208; Marilyn Hirth and Edward Eiler, "Horizontal and Vertical Equity Analysis of Indiana's 2001 Reward-for-Effort Formula," *Journal of Education Finance* 30, no. 4 (2005): 382-398; National Conference of State Legislatures, "The Search for Equity in School Funding," An Education Partners Working Paper, Denver (1996): 23 pages.

<sup>27</sup> Elwood P. Cubberly, *School Funds and Their Apportionment* (New York: Columbia Teachers College, 1906).

<sup>28</sup> David C. Thompson, R. Craig Wood, and Faith E. Crampton, *Money and Schools* (New York: Eye on Education, 2008).

for per-pupil funding weights.<sup>29</sup> Every state legislature accounts for these issues differently in the established funding formula, a detail that will be further explicated. Socio-economic inequalities in relation with compensatory education practices, funding formulas, and per-pupil weights are central to this study.

The Florida Legislature is responsible for the adequate provision and appropriate allocation of state education funding.<sup>30</sup> In 1973, the state enacted the Florida Education Finance Program (FEFP) in order to “guarantee to each student in the Florida public education 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.”<sup>31</sup> One of the fundamental aspects of this funding formula is that it is based upon the number of individual students participating in a particular educational program. Varying funding weights, also known as cost factors, are associated with the educational programs. Funding increases based on district necessities and demographic or economic factors are provided to determine the total funding for each district. The cost factors recognized in the FEFP are categorized into four groups: Basic Programs; Exceptional Student Programs; English for Speakers of Other Languages; and Vocational Education Programs.<sup>32</sup> There are some compensatory elements that are incorporated in the

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<sup>29</sup> David C. Thompson, R. Craig Wood, and Faith E. Crampton, *Money and Schools* (New York: Eye on Education, 2008).

<sup>30</sup> F.S. § 1000.01(3)

<sup>31</sup> F.S. § 236.012(1)

<sup>32</sup> F.S. § 1011.62(c)

Florida education provision system, yet poverty is not a cost factor that is recognized when determining per-pupil funding.

The Florida Comprehensive Assessment Test (FCAT), taken by students in grades three through ten, is the primary tool for determining standardized academic achievement of students in the state of Florida. The FCAT is the foundation of the state-wide accountability and assessment program designed to meet the requirements delineated by the federal No Child Left Behind (NCLB) act.<sup>33</sup> Student scores range from Level 1 to Level 5 in multiple subject areas, with scores at Level 3 or above indicating that the student is meeting standards in that particular area. Students who score below a Level 3 are required to have a Progress Monitoring Plan and receive intensive remediation in the subject.<sup>34</sup> The FCAT is utilized in this study as the measurement instrument for student achievement.

### **Statement of Purpose**

This study determined if there were associations between FRPL percentages and student achievement indicators, displaying a relationship between poverty and achievement in Florida schools. In addition, this study reviewed compensatory practices of the fifty state legislatures and employed a theoretical poverty weight for the state of Florida. Furthermore, the poverty weights utilized in a contemporary adequacy study were initiated into the FEFP. This study correlated poverty and student achievement in Florida schools, and presented the funding implications of initiating theoretical

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<sup>33</sup> 20 U.S.C. § 6301

<sup>34</sup> F.S. § 1003.4156, F.S. § 1003.428, and F.S. § 1008.25 (5)

compensatory practices into the FEFP. The study addresses the following research questions:

1. What are relationships between FRPL percentages and FCAT achievement data in Florida schools?
2. What are relationships between FRPL percentages and FCAT achievement data in Florida elementary schools?
3. What are the fiscal implications of initiating a theoretical poverty weight into the FEFP?
4. What are the fiscal implications of employing the compensatory practices of a contemporary adequacy study into the FEFP?

### **Significance of the Study**

While it may be widely accepted that poverty and student achievement are associated, there were no comprehensive published correlations of poverty and student achievement by the state of Florida. This study displayed the statistical relationships between these variables. State legislatures utilized various compensatory measures in funding formulas in order to provide additional funding for students in poverty. The state of Florida did not include poverty-based compensatory measures in the FEFP. In this study, compensatory elements from other states and components of a contemporary adequacy study were applied to the FEFP in order to demonstrate the financial effects of theoretical poverty weights in Florida education finance.

### **Limitations and Delimitations**

In this study, FRPL percentages for all Florida public schools, excluding charter schools and lab schools, were utilized in poverty-achievement correlations. In addition, FRPL percentages from public elementary schools, excluding all other schools, were utilized for additional analysis. The data associated with FRPL program enrollments have limitations, but it is the most widely utilized proxy for poverty in education

research.<sup>35</sup> Percentages of students scoring at Level 3 or above in Reading, and students scoring at Level 3 or above in Math on the FCAT were the achievement data utilized for correlation purposes. Utilizing FCAT as an indicator of student achievement may also have limitations, but it is the primary assessment dictated by the state of Florida to measure student achievement in accordance to NCLB.<sup>36</sup> Contrasting compensatory practices of the fifty state legislatures, as well as elements revealed in modern adequacy studies, were the foundations for determining theoretical poverty weights. Legislatures alter funding formulas for numerous reasons, and a current clearinghouse of funding formula changes and details did not exist. Education adequacy studies have inherent limitations.

### **Summary**

Understanding poverty and its effects can be very complex. A review of poverty definitions and statistics, and the implications of poverty on children and achievement were critical to this study. Historical context and the policies of federal and state governments in addressing poverty were discussed in order to provide perspective. Examinations of education finance, state funding formulas, and adequacy study methodologies were essential to creating a foundation. Issues of poverty and student achievement and the interconnectedness to education finance are the heart of this study.

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<sup>35</sup> Alexander and Wall, "Adequate Funding of Education Programs for At-Risk Children: An Econometric Application of Research-Based Cost Differentials"

<sup>36</sup> F.S. § 1008.22

## CHAPTER 2 REVIEW OF LITERATURE

Poverty, the associations between money and student achievement, and compensatory practices are fundamental issues in education finance discussions. Equity and adequacy issues and the formulae utilized in state funding systems are essential considerations. Student inequalities in relationship to the variances of state education systems and expenditures create a platform for inquiry. An analysis of Florida educational funding methodologies juxtaposed with the compensatory policies of other states provides a basis for research in the matter of education finance and children in poverty. The effects of poverty on children are of central importance to education and society. Historically, poverty has crippled students in classrooms and created traditions of deficiency, inferiority, and substandard living.<sup>37</sup> Wide ranging definitions and perspectives of poverty exist, yet its negative impact on education and performance is indisputable. The issue at the core of numerous education debates is the correlation of money and student achievement and the associated fiscal and political realities. Compensatory education practices are prevalent in the United States, varying considerably from state to state, employing different processes and approaches to address the weighty issues of poverty and education.

### **Poverty Review**

A universal understanding and review of poverty provides perspective and definition for further analysis within education and state contexts. Poverty can be subjective to some degree, therefore multiple definitions and poverty concepts exist.

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<sup>37</sup> David Berliner, "Our Impoverished View of Educational Reform," *Teachers College Record* 108, no. 6 (2005): 949-995.

These concepts create a basis for understanding and comparison. For many Americans, the term poverty suggests destitution and lack of ability to meet basic needs. The majority of participant responses to a poverty survey focused poverty definitions on hunger or lack of food, homelessness, and not being able to meet basic needs.<sup>38</sup> The American poor can also be described as those who, for reasons beyond their control, cannot help themselves.<sup>39</sup> There is a notable association between levels of education and poverty.

Poverty can be further characterized and measured in terms of “absolute poverty” and “relative poverty.”<sup>40</sup> Absolute poverty is a set standard which is consistent for all persons in all countries, cultures and levels of civilization. A measure of absolute poverty quantifies the number of people below a given threshold that is independent of time and place. This type of measure is not affected by income distribution because it is a consistent established level. The rationale behind the concept of absolute poverty is that it sets a standard for all persons across the world in order to make meaningful comparisons. It is not altered by time period or location. A disadvantage of absolute poverty measurement is that the amount of specific resources required for survival is not consistent in different places and times.<sup>41</sup> Different amounts of heat and types of shelter are required for human survival in Greenland versus Tahiti. An example of an absolute measurement would be the percentage of the population eating less food than

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<sup>38</sup> Catholic Campaign for Human Development, Poverty Pulse Low Income Survey Wave IV, January 2004, <http://www.usccb.org/cchd/PP4FINAL.PDF>

<sup>39</sup> Michael Harrington, *The Other America: Poverty in the United States*. New York: Scribner (1997).

<sup>40</sup> Pete Alcock, *Understanding Poverty* (UK: Palgrave MacMillan, 2006).

<sup>41</sup> Ibid.

is required to sustain the human body. Absolute poverty is a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not only on income but also on access to services.<sup>42</sup> Absolute poverty is further defined as the absence of any two of eight basic needs. Basic needs are, Food: Body Mass Index must be above 16; Safe drinking water: Water must not come from solely rivers and ponds, and must be available nearby (less than 15 minutes' walk each way); Sanitation facilities: Toilets or latrines must be accessible in or near the home; Health: Treatment must be received for serious illnesses and pregnancy; Shelter: Homes must have fewer than four people living in each room. Floors must not be made of dirt, mud, or clay; Education: Everyone must attend school or otherwise learn to read; Information: Everyone must have access to newspapers, radios, televisions, computers, or telephones at home; Access to services: a complete panoply of education, health, legal, social, and financial services.<sup>43</sup> A person who does not have a body mass index above 16 is considered to be severely deprived of food, a person who does not have access to treatment for serious illness is considered to be severely deprived of health care, and a person who has not attended school and cannot read is considered severely deprived of education. A person who is severely deprived in any two of the described categories is considered to be in absolute

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<sup>42</sup> Shailen Nandy, Christina Pantazis, Simon Pemberton, and Peter Townsend, *Child Poverty in the Developing World (Studies in Poverty, Inequality, and Social Exclusion)* (UK: Policy Press, 2003).

<sup>43</sup> Ibid.

poverty. Absolute poverty is a state of wretched, extreme poverty in which basic necessities of life may not be met; a lack of subsistence.<sup>44</sup>

Relative poverty is based on the comparison between the standard of living for those who are poor and the standard of living for the other members in the society who are not poor. This comparison is focused on a specific group or population and is reliant on a given threshold.<sup>45</sup> Generally, people in relative poverty are considered to earn resources sufficient to meet basic needs, yet earn significantly less than the majority of the population being considered. A particular group of persons in the United States described as being in a state of relative poverty may have an extremely higher standard of living compared to a group of persons in relative poverty in Zimbabwe, yet both populations may be considered “poor” relative to others in their respective society. Relative poverty measurements can take into account various locations, cultures and times in order to establish a meaningful comparison. Relative poverty comparisons can elicit questionable results, particularly in small sample sizes.<sup>46</sup> For example, if the median annual income of an affluent neighborhood were \$1 million, then a household that earns \$100,000 could be considered poor on the relative poverty scale. Similar situations may occur on the other end of the scale, indicating that a group of people with an extremely low income who lack basic food, shelter, water, and healthcare and are not considered poor on the relative scale because they have more resources than the other members of the population who are in even greater destitution. Income distribution

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<sup>44</sup> Jeffrey Sachs, *The End of Poverty: Economic Possibilities in Our Time* (New York: Penguin, 2005).

<sup>45</sup> Alcock, *Understanding Poverty*

<sup>46</sup> Bradley Schiller, *The Economics of Poverty and Discrimination* (New Jersey: Prentice-Hall, 1998).

affects relative poverty measurements. If there were more equal distribution of wealth, then relative poverty would be reduced. Relative poverty elucidates inequalities and disparities of various members of given populations.<sup>47</sup> The World Bank, a group of five international organizations that are responsible for assisting countries in economic development and elimination of poverty, indicates that there were 1.4 billion persons living on less than \$1.25 per day (the international poverty line) in the developing world.<sup>48</sup> In 1979, Peter Townsend, a British sociologist, developed an accepted definition of poverty that combines several measures: "Individuals, families and groups in the population can be said to be in poverty when they lack the resources to obtain the type of diet, participation in the activities and have the living conditions and the amenities which are customary, or at least widely encouraged or approved in the societies to which they belong. Their resources are so seriously below those commanded by the average family that they are in effect excluded from the ordinary living patterns, customs, and activities."<sup>49</sup> The various definitions and related poverty concepts are essential to consider for the purposes of measuring poverty in any context.

Measuring poverty is a practice involving several definitions and standards for the basis of compiling data and making comparisons and evaluations. The Federal Poverty Level (FPL), also referred to as the "poverty threshold" or "poverty line," is the set amount of income that a family needs for food, clothing, transportation, shelter, and other necessities in order to establish an adequate standard of living in the United States. The FPL, established annually by the Census Bureau, is determined by the total

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<sup>47</sup> Bradley Schiller, *The Economics of Poverty and Discrimination* (New Jersey: Prentice-Hall, 1998).

<sup>48</sup> Global Purchasing Power Parities and Real Expenditures: 2005 International Comparison Program, <http://siteresources.worldbank.org/ICPINT/Resources/icp-final.pdf>

<sup>49</sup> Peter Townsend, *Poverty in the United Kingdom* (London: Allen Lane, 1979).

cost of all fundamental resources that an average adult consumes in one year, and varies according to age, family size, and other factors. In 1963-1964, Molly Orshansky of the Social Security Administration developed poverty thresholds based on the amount of money for food that was required for various sized families to survive. She set the poverty line at three times the cost of the Department of Agriculture's lowest cost estimate for required food, adjusted for rural and urban environments. This became known as the Orshansky Index, and it is still utilized today as the foundation for poverty measure.<sup>50</sup> The FPL is utilized to calculate all official poverty population statistics, including the number of Americans in poverty each year. The thresholds are determined by using a forty-eight cell matrix and are rounded to the nearest dollar. They are also adjusted each year according to inflation and are reported annually by the U.S. Census Bureau in the form of "Poverty Guidelines."<sup>51</sup> These guidelines (see Table 2-1) are utilized to ascertain families' levels of financial eligibility for particular federal programs, such as Head Start, National School Lunch, and Food Stamp programs. The guidelines are determined each year by the Department of Health and Human Services. Guidelines vary by family size and there are different figures for the contiguous forty-eight states, Hawaii, and Alaska.

Utilization of the poverty threshold, without regard to other factors, can be problematic when analyzing poverty and making policy decisions. One problem with the utilization of a poverty threshold is that a "poverty gap" exists between those persons who fall at the bottom of the spectrum of poverty and those who are very close to the

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<sup>50</sup> Michael Katz, *The Undeserving Poor: From the War on Poverty to the War on Welfare*, (New York: Pantheon, 1990).

<sup>51</sup> Table 2-1.

poverty line. Also, a poverty threshold is purely quantitative, and it is difficult to ascertain numbers-based measures for social factors such as education and health. In addition, charitable contributions and antipoverty programs (Earned Income Tax Credit, Food Stamps, etc.) are not counted as income, and income is the only source recognized in determining the United States poverty line.<sup>52</sup> Many factors are important in poverty policy decisions.

Poverty thresholds, poverty guidelines, and other poverty measures provide a vehicle for statistical analysis and evaluation of poverty conditions in various settings. These statistics and analyses provide further perspective into poverty as an issue affecting society and education. The U.S. Census Bureau displayed poverty statistics for the United States. The official poverty rate for the United States was 14.3 percent in 2009, up from 13.2 percent in 2008. In 2009, 43.6 million people in the United States were in poverty, including Whites (9.4 percent), Blacks (25.8 percent), Hispanics (25.3 percent), and Asians (12.5 percent). The first year these types of poverty comparisons were available was 1959. The poverty rate in 2009 was 8.1 percent lower than in 1959, yet the highest since 1994. In 2009, there were 15.5 million (20.7 percent) children under the age of 18 in poverty, and there were 24.7 million (12.9 percent) of people aged 18-64 in poverty.<sup>53</sup> The United Nations has a global development network named the United Nations Development Programme (UNDP) that publishes an annual Human Development Report. The group uses a Human Poverty Index to assess the development of industrialized nations. This index is based on the probability at birth of

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<sup>52</sup> John Hills, *Inequality and the State* (Oxford: Oxford University Press, 2004).

<sup>53</sup> U.S. Census Bureau. Income, Poverty, and Health Insurance Coverage in the United States: 2009, <http://www.census.gov/prod/2010pubs/p60-238.pdf>

not surviving to age sixty, people lacking functional literacy skills, long-term unemployment, and population below 50 percent of median income. According to this index, the United States ranked 12<sup>th</sup> out of ranked countries.<sup>54</sup> Poverty is a significant concern in the United States.<sup>55</sup>

Some poverty trends and statistics help to illustrate the historical undulating path of poverty in the United States. In the 1950s, the overall poverty rate for people in the United States was 22 percent. In the 1960s, the poverty rate declined significantly to 12.1 percent, and increased somewhat to 12.5 percent by 1971. It began to decrease and fell to a rate of 11.1 percent in 1973, yet increased to 12.3 percent in 1975. It steadily increased to reach 15.2 percent in 1983, remained around 13 percent in the 1980s, but increased back up to 15.1 percent by 1993. As the rate dropped, 11.3 percent of Americans were poor in 2000, but by 2006 the poverty rate increased again to 12.3 percent.<sup>56</sup> In 2009, 43.6 million people were poor, up from 39.8 million in 2008 and 37.3 million in 2007. The nation's official poverty rate in 2009 was 14.3 percent, up from 13.2 percent in 2008 — the second statistically significant annual increase in the poverty rate since 2004.<sup>57</sup> This continuous course of increasing and decreasing poverty rates is data that adds to the picture of American poverty.

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<sup>54</sup> Human Development Report (2003). Millennium Development Goals: A Compact Among Nations to End Human Poverty, [http://hdr.undp.org/en/media/hdr03\\_complete.pdf](http://hdr.undp.org/en/media/hdr03_complete.pdf)

<sup>55</sup> Ibid.

<sup>56</sup> Census Bureau data contained in Current Population Reports, Series P-60, Nos. 124, 140, 145, 149, 154, 157, 161, 166, 168, 174, 180, 185, 207, 210, 214, 219, 222, 226, 229, 231, and 233.

<sup>57</sup> U.S. Census Bureau, 2010 Annual Social and Economic Supplement (ASEC) <http://www.census.gov/hhes/www/poverty/about/overview/index.html>

## Children, Poverty, and Achievement

There are substantial numbers of children living in poverty in the United States resulting in a significant burden on the system of public education. The National Center for Children in Poverty (NCCP) at Columbia University indicated that 11.9 million (17 percent) children in the United States lived in poverty in 2004, and 26.8 million (38 percent) lived in low-income families. See Table 2-2. Low income families were considered to be those with incomes less than 200 percent of poverty-level family income. In 2007, 13.2 million (19 percent) children lived in poverty, and 28.8 million (40 percent) families were considered to be low-income.<sup>58</sup> The number of children living in poverty increased by 33 percent between the years 2000 and 2009. There were 3.8 million more children living in poverty in 2009 than in 2000.<sup>59</sup> In 2009, 21 percent (15.3 million) children lived in families that are poor, and 9 percent (6.8 million) lived in families that experience extreme poverty.<sup>60</sup> Through calculation of a Gini coefficient, The Luxembourg Income Study indicated that the United States ranked twenty ninth out of thirty developed countries in the percentage of children who fall below the designated poverty line. When utilizing a median income of 60 percent, Mexico is the only developed nation with higher child poverty rates, and the United States falls well behind several European nations.<sup>61</sup> One of the problems facing public schools in the United States is the daunting task of educating such great numbers of children in poverty.

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<sup>58</sup> National Center for Children in Poverty, November 2008 Report. Low-Income Children in the United States: National and State Trend Data, 1997-2007, [http://www.nccp.org/publications/pdf/text\\_851.pdf](http://www.nccp.org/publications/pdf/text_851.pdf)

<sup>59</sup> Vanessa Wight, Michelle Chau, and Yumiko Aratani, Who are America's Poor Children?, National Center for Children in Poverty, 2011. [http://www.nccp.org/publications/pdf/text\\_1001.pdf](http://www.nccp.org/publications/pdf/text_1001.pdf)

<sup>60</sup> Ibid.

<sup>61</sup> Luxembourg Income Study Key Figures, <http://www.lisproject.org/key-figures/key-figures.htm>

Children living in poverty have less achievement promoting advantages in their lives than their more affluent peers. Poor children more often come from families with low levels of educational attainment and have less assistance with their schooling.<sup>62</sup> In 2007, 83 percent of children whose parents had less than a high school diploma lived in low-income families, and over half of children whose parents earned only a high school degree are low-income as well.<sup>63</sup> Poor children live in homes with less reading material and less access to computers and internet.<sup>64</sup> Low-income children are more likely to come from homes with extended or multiple families and have parents who are more often unemployed, underemployed, or work multiple jobs in order to earn a minimum income.<sup>65</sup> Poor students are more likely to have less access to health care, experience unattended health issues, and have school attendance concerns. Because children from poverty have less access to health care, they are more likely to be sicker longer.<sup>66</sup> Children from low-income families exhibit more anti-social behavior, violence, cruelty, dishonesty, and non-cooperative and disobedient behavior than their middle and upper class peers.<sup>67</sup>

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<sup>62</sup> National Center for Children in Poverty, November 2008 Report. Low-Income Children in the United States: National and State Trend Data, 1997-2007, [http://www.nccp.org/publications/pdf/text\\_851.pdf](http://www.nccp.org/publications/pdf/text_851.pdf)

<sup>63</sup> Ibid.

<sup>64</sup> Ibid.

<sup>65</sup> U.S. Census Bureau. 2003b. "Figure 4. Poverty Rates in Families by Family Type and Presence of Workers, 2002." Current Population Survey, 2002 and 2003 Annual Social and Economic Supplements. Washington D.C.: U.S. Department of Commerce.

<sup>66</sup> U.S. Census Bureau. 2003d. "Low Income Uninsured Children by State: 2000, 2001, and 2002." Current Population Survey, 2000, 2001 and 2002 Annual Social and Economic Supplements. Washington D.C.: U.S. Department of Commerce.

<sup>67</sup> Pedro Carneiro and James Heckman, Human Capital Policy. Presented at the 2002 Alvin Hansen Seminar, Harvard University, Cambridge, MA.

The absence of human capital that includes the cultural capital of access to a history of success, parents with degrees, homes with books and computers, friends who want to move up in society, and opportunities to travel increases the enormous dependence of poor children on public education. The greater the concentration of poor students at a school, the more severe poverty is and the greater the correlation between family income and student achievement is. Unlike children who have access to learning capital in the home and the community, economically disadvantaged children depend completely on public education.<sup>68</sup>

The culture and structure of families in poverty is substantially different than the culture of other families, and a pre-existing education deficiency coupled with lack of advantages continues the cycle of poverty in America.

Poverty levels remain the most reliable data source for predicting the academic failure of children.<sup>69</sup> Student achievement, high school drop-out rates, and other indicators are associated with poverty levels. Students from low-income families are six times more likely to drop out of school than students from more advantaged backgrounds.<sup>70</sup> The National Assessment of Educational Progress (NAEP) is administered periodically in a number of academic subjects with two major goals: to assess student performance reflecting current educational practices and to measure change in student performance reliably over time. The NAEP is governed by the National Assessment Governing Board. According to the NAEP, the achievement gap in average math scores between 9-year-olds in high and low poverty schools was 22 points in 1996, down from a 28 point gap in 1992 and a 24 point gap in 1994. A ten-

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<sup>68</sup> Augustina Reyes, "Texas State Compensatory Education," *Journal of Education Finance* 31, no. 3 (2006): 221-237.

<sup>69</sup> Deborah Land and Nettie Letgers, "The Extent and Consequences of Risk in U.S. Education," in *Educating At-Risk Children: One Hundred-First Yearbook of the National Society for the Study of Education, Part II*, ed. S. Stringfield and D. Land (Chicago: University of Chicago Press, 2002): 1-28.

<sup>70</sup> National Center for Education Statistics, *The Nation's Report Card* (Washington, DC: U.S. Department of Education), <http://nces.ed.gov/nationsreportcard/>

point difference on NAEP is approximately equal to one grade level. The average math achievement for 9-year olds in high poverty schools fell more than 2 grade levels behind the performance levels in low-poverty schools. The achievement gap in reading between 9-year olds in high and low poverty schools was 38 points in 1996. Although this was down from a 40-point gap in 1992, it represents a 3 to 4 grade level gap in student performance.<sup>71</sup> The NAEP defines three achievement levels: Basic, Proficient, and Advanced. Students score above, at, or below each level. In 2003, 55 percent of 4<sup>th</sup> graders and 43 percent of 8<sup>th</sup> graders who were eligible for Free or Reduced Price Lunch (FRPL) scored below the Basic level in reading achievement on the NAEP, compared to 24 percent of 4<sup>th</sup> graders and 19 percent of 8<sup>th</sup> graders who were not eligible for FRPL. 38 percent of 4<sup>th</sup> graders and 52 percent of 8<sup>th</sup> graders who were eligible for FRPL scored below the Basic level in mathematics achievement on the NAEP, compared to 12 percent of 4<sup>th</sup> graders and 21 percent of 8<sup>th</sup> graders who were ineligible.<sup>72</sup> In 2005, the NAEP revealed corroborating disparity data in the area of mathematics. 4<sup>th</sup> grade students who were eligible for FRPL scored 230 out of 500. Peers in the same or similar schools who were ineligible scored 245 on the same exam. 4<sup>th</sup> grade students eligible for FRPL who were attending schools with more than 75 percent of students in poverty scored 219. Students not eligible for FRPL who were attending schools with less than 10 percent of students in poverty scored 256.<sup>73</sup> This represents a disparity gap of 37 points. Results from the 2005 and 2007 NAEP displays

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<sup>71</sup> School Poverty and Academic Performance: NAEP Achievement in High-Poverty Schools - A Special Evaluation Report for the National Assessment of Title I, [www.ed.gov/pubs/schoolpoverty](http://www.ed.gov/pubs/schoolpoverty)

<sup>72</sup> National Center for Education Statistics, The Nation's Report Card (Washington, DC: U.S. Department of Education), <http://nces.ed.gov/nationsreportcard/>

<sup>73</sup> Ibid.

the continuing achievement gap associated to poverty. See Table 2-3. The range for NAEP Reading and Math tests is 0-500 and the range for Writing and Science tests was 0-300. All numbers indicated average scale scores. The Trends in International Mathematics and Science Study (TIMMS) provided data on the mathematics and science achievement of United States 4<sup>th</sup> grade and 8<sup>th</sup> grade students compared to that of students in other countries. TIMMS is conducted by the International Association for the Evaluation of Educational Achievement (IEA), an international organization of national research institutions and governmental research agencies.<sup>74</sup> Table 2-4 displays the average test scores for students in schools with different levels of poverty. A clear pattern emerged: As poverty in the schools increased, the test scores from students in those schools decreased. These data represented a reliable and compelling achievement gap between children in low-income families and their more affluent peers. It is clear that, on average, students who are eligible for FRPL do not achieve as high as their peers who do not experience the burdens of poverty. It is also clear that, on average, students who attend schools with higher percentages of students in poverty do not achieve as high as students who attend schools with lower percentages of students in poverty.

Poverty continues to be the most consistent indicator of academic failure, and concentration of poverty at the district level, individual school level and classroom level exacerbates the issue. Concentration of poverty intensifies the negative effects on academic achievement. All children, both poor and non-poor, achieve at an average

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<sup>74</sup> International Association for the Evaluation of Educational Achievement, <http://www.iea.nl/timss2011.html>

lower level in schools with a high concentration of poverty.<sup>75</sup> Schools that serve large populations of poor students are highly likely to have lower average achievement levels than other schools.<sup>76</sup> A high concentration of students in poverty has negative effects on students, teachers, and the school, extending beyond the effect of the poverty of the individual student.<sup>77</sup> The degree of poverty that children experience, coupled with the concentration of low-income children in a school or classroom have a proliferating negative effect on student achievement. “The concentration of children in poverty has a linear relationship with cost per pupil, where the cost per pupil rises with the percentage of low-income children.”<sup>78</sup> The amount of resources required to adequately instruct students depends on both the concentration of low-income children and the degree of poverty experienced by these children.

Concentrated student poverty is attributable to dynamic factors, in response to longstanding conditions and public policies. These factors include patterns of urban and rural economic decline, residential suburbanization, municipal school district boundaries, and the vestiges of de jure racial segregation, and more recently, resegregation in the public schools. While concentrated poverty is a predominant feature across the landscape of public education in the 50 states, the patterns and characteristics in each state vary.<sup>79</sup>

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<sup>75</sup> William Taylor and Diane Piche. 1990. *A Report on Shortchanging Children: The Impact of Fiscal Inequity on the Education of Students at Risk*. Washington, DC: Congress of the U.S., House Committee on Education and Labor.

<sup>76</sup> Robert Slavin, Nancy Karwiet, and Nancy Madden, *Effective Programs for Children at Risk* (Boston: Allyn and Bacon, 1989).

<sup>77</sup> Laura Lippman, Shelley Burns, Edith McArthur, (1996). *Urban Schools: The Challenge of Location and Poverty*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement

<sup>78</sup> Kern Alexander and Richard Salmon, *Public School Finance* (Boston: Allyn & Bacon, 1995).

<sup>79</sup> Bruce Baker, David Sciarra, and Danielle Farrie, “Is School Funding Fair A National Report Card,” September 2010, [http://www.schoolfundingfairness.org/National\\_Report\\_Card.pdf](http://www.schoolfundingfairness.org/National_Report_Card.pdf)

In a recent study of Texas elementary schools, the rate of poverty among students was by far the most important variable explaining differences in achievement. A high percentage of economically disadvantaged students in the school corresponded to low academic levels.<sup>80</sup> “The cost of education programs is higher for poor children than for children from families with average total income. The closer the family income is to the median or average for the United States, the closer the cost should be to the average expenditure to educate the child from a regular, average, or median income family.”<sup>81</sup> Poverty is a monumental obstacle to education attainment and more resources are required to adequately educate children who come from a background of poverty.

### **America and Poverty**

America has been deemed a land of opportunity largely because of the perception that appropriate motivations and actions may be sufficient to provide a life outside of poverty. In 1931, James Truslow Adams coined the phrase, “American Dream” in his Book *The Epic of America*.<sup>82</sup> The American Dream is a belief in the idea that America provides a freedom that enables citizens to reach their goals of a good life through hard work. It is based on ideas of meritocracy rather than a system of class structure and its meaning has evolved through the course of national history. For some Americans, its meaning is held in greater opportunities for material prosperity to be gained relative to the opportunities in other countries. For others, its meaning lies in the freedom of

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<sup>80</sup> Reyes, “Texas State Compensatory Education”

<sup>81</sup> Kern Alexander and Andrew Wall, “Adequate Funding of Education Programs for At-Risk Children: An Econometric Application of Research-Based Cost Differentials,” *Journal of Education Finance* 31, no. 3 (2006): 297-319.

<sup>82</sup> James T. Adams, *The Epic of America* (Boston: Little, Brown & Company, 1931).

choices to be made without prejudice and persecution based on religion, class, race or gender. For many, the American Dream is a guarantee of an education that is provided for all children, allowing for career opportunities and hope for a good life, free from poverty. Education markedly increases the odds of upward mobility.<sup>83</sup> Education has long been viewed as the vehicle to transport persons from a life of poverty to acceptable conditions, supporting a foundation for compulsory education in the United States. It is widely believed that using public money to provide education will benefit society at large by generating increased wealth, improved employment opportunities, and reductions in social problems.<sup>84</sup> While numerous economists and social scientists focus on wealth disparity and debate whether America deserves this positive reputation, the American Dream is part of our national culture, and education is an integral part of this optimism.

The positivity surrounding America as a nation designed for upward mobility is greatly contested.

Compared with those of other developing countries, U.S. poverty rates are extraordinarily high, as are the odds of remaining in poverty intergenerationally. No longer do immigrants from Europe want to come to America; the social and economic policies of their country are superior, their public schools are better funded, and their overall standard of living is higher. The weight of poverty in America places a heavy burden on public schools as the most important agents of poverty remediation. The results of this burden are manifested in a prevailing view that the public schools are failed institutions.<sup>85</sup>

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<sup>83</sup> Lisa A. Keister, *Wealth in America: Trends in Wealth and Inequality* (Cambridge: Cambridge University Press, 2000): 64.

<sup>84</sup> Martin Carnoy (1994). Education and Productivity. *The International Encyclopedia of Education* (Vol. 3, pp. 1690-1695). New York: Elsevier Science.

<sup>85</sup> Kern Alexander and Andrew Wall, "Warranting Failure: The "System" That Breeds Poverty and Starves Public Schools," *Journal of Education Finance* 33 no. 2 (2007): 203-220.

In 1962, the wealth of the richest one percent of U.S. households was approximately 125 times greater than that of the typical household. By 2004, it was 190 times.<sup>86</sup> In 2007, the richest 1 percent of U.S. households owned 34.3 percent of the nation's private wealth, more than the combined wealth of the bottom 90 percent.<sup>87</sup> It is argued that the positive effects of redistributed wealth from government policies have little effect in opposition to the negative effects of government policies that exacerbate wealth disparity.<sup>88</sup> Persons in a state of poverty in the United States have less upward mobility than in most other developed nations.<sup>89</sup> Those at the bottom are relegated to an economic exile that is exacerbated either by direct government action that elevates the prospects of the wealthy or by government inaction that fails to overcome market forces.<sup>90</sup> Children unfortunate enough to be born into the lowest quartile of wealth have a 40 percent chance of remaining in that quartile the rest of their lives. "There is little reason to believe that children in poverty today can expect a better tomorrow."<sup>91</sup> The United States has become an increasingly more polarized and static society; one in which children have become comparatively more disadvantaged.<sup>92</sup>

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<sup>86</sup> Mishel Lawrence, Jared Bernstein, and Sylvia Allegretto, *The State of Working America 2006/2007* (Ithaca, N.Y.: ILR Press, 2007).

<sup>87</sup> Ibid.

<sup>88</sup> Stephen Holmes and Cass Sunstein, *The Cost of Rights: Why Liberty Depends on Taxes* (New York: W.W. Norton, 2000): 29.

<sup>89</sup> Alan Krueger, "Inequality, Too Much of a Good Thing," in *Inequality in America*, ed. J.J. Heckman and A.B. Krueger (Cambridge, MA: MIT Press, 2003): 11.

<sup>90</sup> Michael Walzer, *Spheres of Justice: A Defense of Pluralism and Equality* (New York: Boise, 1983).

<sup>91</sup> Elizabeth H. Peters, "Patterns of Intergenerational Mobility in Income and Earnings," *Review of Economics and Statistics* 24 (1992): 456-466.

<sup>92</sup> Alan Krueger, "Inequality, Too Much of a Good Thing," in *Inequality in America*, ed. J.J. Heckman and A.B. Krueger (Cambridge, MA: MIT Press, 2003): 11.

Poverty has a significant history in the United States as a focal policy issue for politicians and Presidents. In the 1930s, President Franklin Delano Roosevelt established a group of social programs entitled, “The New Deal” which had goals of giving relief to impoverished people and creating new financial systems to rebound from the Great Depression. In the 1960s President Lyndon B. Johnson initiated a set of social programs known as “The Great Society.” These programs were aimed at eliminating racial prejudice and poverty. On January 8, 1964 President Johnson declared an “unconditional war on poverty in America” in his State of the Union address and attention was focused on the effects of poverty on educational productivity.<sup>93</sup> This war on poverty focused more federal resources into various compensatory programs. The intended purpose of compensatory education arose as an additional investment in human capital for low-income students to compensate for higher levels in human capital afforded to more advantaged populations.<sup>94</sup> In response to Johnson’s declaration, the United States Congress passed the Economic Opportunity Act, and established the Office of Economic Opportunity (OEO) which served to facilitate these new programs.<sup>95</sup> Criticism of these welfare proponent programs increased in the 1980s and 1990s and the OEO was dismantled, yet some programs such as Head Start and Job Corps still exist.<sup>96</sup> Research since the 1960s supports an assertion from advocates of The Great Society: Children living in poverty require additional assistance to succeed in school.

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<sup>93</sup> Mark Carnes and Jason Garraty, *The American Nation*, 13 ed. (New York: Longman, 2007).

<sup>94</sup> Henry M. Levin, “Some Methodological Problems in Economic Policy Research: Determining How Much Should Be Spent on Compensatory Education,” *Education and Urban Society* 7, no. 3 (1975): 303-333.

<sup>95</sup> Carnes and Garraty, *The American Nation*

<sup>96</sup> *Ibid.*

Schools serving large numbers of poor children necessitate additional resources to meet their needs and bring them to parity with their more affluent peers.<sup>97</sup> Poverty remains an important political issue for Americans today, and political parties and politicians operate under various ideals to address the American poor.

It has long been recognized that deficiencies in society and families impact children and their education. Government action in response to these deficiencies has taken various forms over the decades. Children from poverty may benefit from government programs that help mitigate the hindering effects of living in a less advantaged home. Although the responsibility of education is relegated to individual state legislatures by the 10<sup>th</sup> Amendment of the U.S. Constitution,<sup>98</sup> federal interest and intervention continues to be significant. While the majority of education related programs are managed by state systems, several federal programs exist in order to help address the negative effects of poverty on children.

The Head Start program was established in 1965<sup>99</sup> and remains as the longest running social program created to intervene in the cycle of poverty in the United States. The Office of Head Start (OHS),<sup>100</sup> Administration for Children and Families (ACF)<sup>101</sup>

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<sup>97</sup> Carolyn Brown, "Are America's Poorest Children Receiving Their Share of Federal Education Funds? School-Level Title I Funding in New York, Los Angeles, and Chicago," *Journal of Education Finance* 33, no. 2 (2007): 130-146.

<sup>98</sup> U.S. CONST. amend. X

<sup>99</sup> Steven Barnett and Jason Hustedt, "Head start's lasting benefits," *Infants and Young Children* 18, no. 1 (2005): 16-24.

<sup>100</sup> U.S. Department of Health and Human Services, Administration for Children and Families, Office of Head Start. <http://www.acf.hhs.gov/programs/ohs/index.html>

<sup>101</sup> U.S. Department of Health and Human Services, Administration for Children and Families, <http://www.acf.hhs.gov/index.html>

and United States Department of Health and Human Services (HHS)<sup>102</sup> administer the national Head Start program and publish this mission statement: “Head Start is a national program that promotes school readiness by enhancing the social and cognitive development of children through the provision of educational, health, nutritional, social and other services to enrolled children and families.”<sup>103</sup> The Head Start program has enrolled over 25 million children since it began in 1965.<sup>104</sup> In 2007, there were 908,412 children enrolled in the Head Start program and the government appropriation for 2007 was \$6,877,975,000. The average cost per child enrolled was \$7,326.<sup>105</sup> The program engages parents in their children's learning and helps them to make progress toward literacy and education goals. Children from birth to age five from families with low income (in accordance with the Federal Poverty Guidelines)<sup>106</sup> are eligible for Head Start services. Children in poverty have a disadvantage entering school because they are often unprepared relative to their more affluent peers. Children enrolled in Head Start exhibited positive effects in cognitive, social-emotional and health domains that were measured.<sup>107</sup> Head Start provides necessary resources allowing for parent and child preparation for education. Child preparation efforts result in higher success rates in schooling for children and can help to break the cycle of poverty.

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<sup>102</sup> U.S. Department of Health and Human Services, <http://www.hhs.gov/>

<sup>103</sup> U.S. Department of Health and Human Services, Administration for Children and Families, Office of Head Start <http://www.acf.hhs.gov/programs/ohs/about/index.html>

<sup>104</sup> U.S. Department of Health and Human Services, Administration for Children and Families, Office of Head Start <http://www.acf.hhs.gov/programs/ohs/about/index.html>

<sup>105</sup> Ibid.

<sup>106</sup> Table 2-1.

<sup>107</sup> U.S. Department of Health and Human Services, Administration for Children and Families, Office of Head Start <http://www.acf.hhs.gov/programs/ohs/about/index.html>

Another program aimed at mitigating the effects of poverty on the public education system is the Federal Title I program. According to the United States Department of Education, “Title I is designed to support State and local school reform efforts tied to challenging State academic standards in order to reinforce and amplify efforts to improve teaching and learning for students farthest from meeting State standards.”<sup>108</sup> As the largest single federal investment in schooling, Title I of the No Child Left Behind (NCLB) Act provided over \$13.9 billion in compensatory assistance in 2008. Title I funds reach 12.5 million students in preschool through high school, enrolled in public and private schools.<sup>109</sup> Approximately two-thirds of public schools receive some amount of Title I funds. The United States Department of Education appropriates Title I funds by multiplying the state average per-pupil expenditure by 40 percent of the children in each district over five years old living below the federal poverty guidelines.<sup>110</sup> Federal legislation allows school districts to determine minimum levels of eligible pupils necessary to receive Title I funds, but directs funds to be distributed to schools with less than 35 percent eligible pupils.<sup>111</sup> The legislation also requires that districts fund schools with more than 75 percent eligible pupils, in rank order from highest to lowest.<sup>112</sup> Not all school districts utilize Title I funds in the same manner, but Title I legislation requires that the majority of the funds must be distributed at the school level. State Education

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<sup>108</sup> U.S. Department of Education, Office of Elementary and Secondary Education, <http://www2.ed.gov/programs/titleiparta/index.html>

<sup>109</sup> U.S. Department of Education, Office of Elementary and Secondary Education, <http://www2.ed.gov/programs/titleiparta/index.html>

<sup>110</sup> Ibid.

<sup>111</sup> 20 U.S.C. § 1113(b)(A)

<sup>112</sup> 20 U.S.C. § 1113(a)(3)(c)(A)

departments can take only 1 percent of the total Title I allocation for administrative purposes; 99 percent must pass to school districts.<sup>113</sup> Public schools with poverty rates above 40 percent can utilize Title I funds, in conjunction with state and local funds, to operate a school-wide program to improve instruction for the whole school.<sup>114</sup> Schools with poverty rates below 40 percent, or those choosing not to operate a school-wide program, can offer a "targeted assistance program" that identifies students who are at risk of not meeting state standards, and designs an instructional program to meet the needs of those students.<sup>115</sup> Both school-wide and targeted assistance programs are based on effective means of improving student achievement and include strategies to support parental involvement.<sup>116</sup> The Title I program is successful in providing some additional resources and services to less advantaged students across the country, yet the effects of poverty on education are still prevalent.<sup>117</sup>

The National School Lunch Program (NSLP) is a federal meal program operating in public and non-profit private schools and residential child care institutions. The NSLP was established in 1946 as a result of the National School Lunch Act.<sup>118</sup> In 1947, the NSLP cost was \$70 million; in 2007 the cost was \$8.7 billion. The program provided free or reduced price lunches to more than 30.5 million (nearly 42 percent) children each

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<sup>113</sup> 20 U.S.C. § 1004(a)(1)

<sup>114</sup> 20 U.S.C. § 1114(a)(1)

<sup>115</sup> 20 U.S.C. § 1115(a)

<sup>116</sup> Brown, "Are America's Poorest Children Receiving Their Share of Federal Education Funds? School-Level Title I Funding in New York, Los Angeles, and Chicago"

<sup>117</sup> Ibid.

<sup>118</sup> U.S. Department of Agriculture, Food and Nutrition Service, National School Lunch Program, <http://www.fns.usda.gov/cnd/lunch/aboutlunch/NSLPFactSheet.pdf>

school day in 2007.<sup>119</sup> In 1998, Congress expanded the National School Lunch Program to include reimbursement for snacks served to children in educational afterschool programs.<sup>120</sup> At the state level, the NSLP is typically administered by state education agencies, which operate the program through agreements with school food authorities.<sup>121</sup> School districts and independent schools that choose to take part in the lunch program receive cash subsidies and donated commodities from the United States Department of Agriculture (USDA) for each meal they serve.<sup>122</sup> In return, schools must offer free or reduced price lunches to eligible children, and they must serve lunches that meet Federal requirements.<sup>123</sup> From July 1, 2010 through June 30, 2011, children from families with incomes at or below 130 percent of the federal poverty level were eligible to receive free meals. Families with incomes between 130 percent and 185 percent of the federal poverty level were eligible to receive reduced-price meals.<sup>124</sup> Students can be charged no more than 40 cents for a reduced-price meal.<sup>125</sup> For the period July 1, 2008, through June 30, 2009, 130 percent of the poverty level was \$27,560 for a family of four; 185 percent was \$39,220 for a family of four.<sup>126</sup> NSLP enrollment data serves as one of the best sources of data on low-income students in the entire nation. As such,

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<sup>119</sup> Ibid.

<sup>120</sup> 7 U.S.C. § 210.7

<sup>121</sup> 7 U.S.C. § 210.3

<sup>122</sup> 7 U.S.C. § 210.4

<sup>123</sup> 7 U.S.C. § 210.10

<sup>124</sup> U.S. Department of Agriculture, Food and Nutrition Service, National School Lunch Program, <http://www.fns.usda.gov/cnd/lunch/aboutlunch/NSLPFactSheet.pdf>

<sup>125</sup> Ibid.

<sup>126</sup> USDA Food and Nutrition Service, Direct Certification in the National School Lunch Program: State Implementation Progress Report to Congress, Special Nutrition Programs Report No. CN-08-DC, December 2008, <http://www.fns.usda.gov/ora/menu/published/CNP/FILES/DirectCert08.pdf>

data are also used to determine funding for a variety of federal and state programs that target children and families in poverty. NCLB legislation requires each state to hold public schools accountable for the achievement of their students, with additional layers of accountability for low-income students.<sup>127</sup> The NCLB law recognizes the percentage of students enrolled in the NSLP as a primary indicator of school poverty.

The local educational agency shall use the same measure of poverty, which measure shall be the number of children ages 5 through 17 in poverty counted in the most recent census data approved by the Secretary, the number of children eligible for free and reduced priced lunches under the Richard B. Russell National School Lunch Act, the number of children in families receiving assistance under the State program funded under part A of title IV of the Social Security Act, or the number of children eligible to receive medical assistance under the Medicaid program, or a composite of such indicators, with respect to all school attendance areas in the local educational agency —

- (A) to identify eligible school attendance areas;
- (B) to determine the ranking of each area; and
- (C) to determine allocations under subsection (c).<sup>128</sup>

The most commonly accepted method of determining the incidence of children with greater educational needs as a result of low income is participation in the NSLP and free or reduced price lunch eligibility.<sup>129</sup> Some have suggested that a significant challenge to FRPL data is the fact that some states or school districts do not report these data correctly. In addition, there are few procedures within the construct of the program to prevent fraud or misreporting, and federal documentation of household income is not required. FRPL is often underreported at the middle school and high

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<sup>127</sup> 20 U.S.C. § 1001

<sup>128</sup> 20 U.S.C. § 113(a)(5)

<sup>129</sup> Alexander and Wall, “Adequate Funding of Education Programs for At-Risk Children: An Econometric Application of Research-Based Cost Differentials”

school levels due to student perception that it is a stigma to be considered poor by their peers.<sup>130</sup> Large discrepancies and reporting swings in some U.S. school districts is another area of concern.<sup>131</sup> These inconsistencies have caused funding difficulties and queries of fraudulent activity.<sup>132</sup> Despite limitations and concerns, FRPL data remains the most widely utilized poverty data in education research. While some legislatures and researchers utilize U.S. Census Bureau data, and poverty rates vary considerably, the most prevalent source utilized as a poverty proxy in education research is FRPL data.

State K – 12 public education systems face the challenge of educating extraordinarily high numbers of students in poverty. Using the U.S. Census standard, the national average for child poverty in the nation's public schools is 16%. Nine states have child poverty rates of over 20%, with Mississippi at 26% and Louisiana and Washington, D.C. at 25%. While the Census poverty rate differentiates above and below poverty at 100% of the federal poverty level (approximately \$20,000 for a family of four), it is more common in education to assess poverty levels using eligibility for the federal free and reduced price lunch (FRL) program. The threshold for this program is 185% of the federal poverty level, or approximately \$37,000 for a family of four. When poverty rates are expressed in this commonly used metric for student poverty, the national rate is 41%. Eleven states have average FRL rates over 50%, with Mississippi (68%) and New Mexico (61%) topping the list. In California, the nation's largest public school system, the student poverty rate is 50%, with more than 3 million children qualifying for federal free and reduced-price lunch.<sup>133</sup>

The NSLP is another Federal program working to provide compensatory assistance to disadvantaged children, and is utilized as a quantifier for school poverty.

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<sup>130</sup> Donka Mirtcheva and Lisa Powell, "Participation in the National School Lunch Program: Importance of School-level and Neighborhood Contextual Factors," *Journal of School Health* 79, no. 10 (2009): 485-94; Kevin Welner, "Non-Evidence about Tracking: Critiquing the New Report from the Fordham Institute," *Teachers College Record*, December (2009); Carol Pogash, "Free Lunch Isn't Cool So Some Students Go Hungry," *New York Times*, March 1, 2008.

<sup>131</sup> David Bass, "Fraud in the Lunchroom," *Education Next* 10, no. 1 (2010): 67-71

<sup>132</sup> Ibid.

<sup>133</sup> Bruce Baker, David Sciarra, and Danielle Farrie, "Is School Funding Fair A National Report Card," September 2010, [http://www.schoolfundingfairness.org/National\\_Report\\_Card.pdf](http://www.schoolfundingfairness.org/National_Report_Card.pdf)

The role of the Federal government in providing assistance in education is noteworthy, and it is useful to contextualize poverty issues, yet this involvement is not successful in eliminating the achievement gap between poor students and their peers. The United States Department of Education lists sixty-two federal education programs, descriptions, and details that are managed by the Office of Elementary and Secondary Education (OESE).<sup>134</sup> Current Federal assistance programs do not have the ability to rapidly change the economic status and family situation of its students, and poverty remains a substantial barrier in educational attainment and success. State education finance systems are the fundamental instrument for provision of equitable and adequate educational resources for all students. Analyzing these systems is critical to considerations of compensatory practices and addressing poverty as an education impediment.

### **Education Finance Research**

Research in education finance has led to studies of historical significance. The Coleman Report<sup>135</sup> was the result of a commission established by Congress in 1966 to study resources and the educational opportunities available to minority children. The authors of the study concluded that the largest determinants of student achievement are the educational backgrounds and aspirations of other students in the school. They stated, “[S]chools bring little influence to bear on a child’s achievement that is

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<sup>134</sup> U.S. Department of Education, Office of Elementary and Secondary Education <http://www.ed.gov/about/offices/list/oese/programs.html>

<sup>135</sup> James Coleman, Ernst Campbell, Carol Hobson, James McPartland, Alexander Mood, Frederic Weinfeld, and Robert York. *Equality of Educational Opportunity* (Washington, DC: U.S. Government Printing Office, 1966).

independent of his background and general social context.”<sup>136</sup> From these assertions a popular perception arose that money is not a significant determinant in the schooling of students from low socio-economic or minority backgrounds. Reports conveyed that money does not matter in education.<sup>137</sup> Subsequent studies countered the Coleman Report’s conclusions, yet the impact of the study released by Congress is influential concerning the issue of money and its association to student achievement.<sup>138</sup> There is a perception with some policymakers that there is little correlation between education spending and schooling results.<sup>139</sup> This belief is consistently challenged, continuing the research between money and student performance.

After many years of research, the relationship between school resources and student achievement remains a controversial subject. Researchers have spent decades examining the associations between money and student achievement. “Most studies investigating the relationship between educational expenditures and student achievement use a basic conceptual model that defines achievement as a function of school resources, student ability, student socioeconomic background, and other school characteristics, such as school size.”<sup>140</sup> In 1975, chapters by Levin and Rothenberg in the *Handbook for Evaluation Research* were the first to advocate in prominent

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<sup>136</sup> Ibid.

<sup>137</sup> Ibid.

<sup>138</sup> Michael A. Rebell and Joseph J. Wardeniski, “Of Course Money Matters: Why Arguments to the Contrary Never Added Up,” *The Campaign for Fiscal Equity*, January 2004.

<sup>139</sup> Eric Hanushek, “The Impact of Differential Expenditures on School Performance,” *Educational Researcher* 18, no. 4 (1989): 45-51.

<sup>140</sup> Elizabeth Harter, “How Educational Expenditures Relate to Student Achievement: Insights from Texas Elementary Schools,” *Journal of Educational Finance* 24, no. 3 (1999): 281-302.

educational literature, the use of economic evaluation in educational decision making.<sup>141</sup> Education cost studies utilized by researchers vary in design. In recent years as these cost analyses and adequacy studies have become the centerpiece of education finance litigation, having significant influence on state education budgetary decisions, the reliability and validity of these analyses have been examined and scrutinized. In some situations these studies are held as the gold-standard and other times they are viewed as pure alchemy.<sup>142</sup> Reviewing various approaches and differences reveals some difficulties in the relationships between education finance and student performance. Average Expenditure studies and Resource Cost Models were used extensively in the 1980s to measure educational services. The first goal of these studies was to identify necessary resources used to provide a particular set of services.<sup>143</sup> Prices of resources vary from district to district according to level and intensity of services. As the issue of adequacy came to the forefront, these studies became more tailored in the 1990s, and several approaches emerged. The Professional Judgment approach, the Evidence-Based approach, the Successful Schools approach, and the Statistical Analysis approach have been utilized to determine education adequacy.<sup>144</sup>

The Professional Judgment approach utilizes a focus group of educators, policymakers, stakeholders to prescribe a basket of services and resources necessary to provide an adequate education. A calculation of the cost of these services is

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<sup>141</sup> Milbrey W. McLaughlin, *Evaluation and Education: At a Quarter Century* (Chicago: University of Chicago Press, 1991).

<sup>142</sup> Bruce Baker, "Evaluating the Reliability, Validity, and Usefulness of Education Cost Studies," *Journal of Education Finance* 32, no. 2 (2006): 170-201.

<sup>143</sup> Robert Berne and Leanna Stiefel, *The Measurement of Equity in School Finance: Conceptual, Methodological, and Empirical Dimensions* (Baltimore MD: The John Hopkins University Press, 1984).

<sup>144</sup> Baker, "Evaluating the Reliability, Validity, and Usefulness of Education Cost Studies"

established. This approach recognizes recommendations from a panel of experts in order to decide the vital components of an adequate education.<sup>145</sup> The panel advises on what inputs (teachers, resources, programs, etc.) are necessary to meet the stated educational standard. This approach can result in the creation of a hypothetical prototype school that is ideally equipped. A primary concern of the professional judgment approach is the fact that there are significant discrepancies between various expert panels.<sup>146</sup> Another problem is that it relies on judgment rather than specific research indicating linkage between programs and student achievement. Also, some models do not distinguish between recommended strategies for typical schools and schools with low-socio-economic or special populations.<sup>147</sup> This approach is limited in design, application, and generalizability, yet the majority of studies rely on this methodology. Eric Hanushek referred to the Professional Judgment Approach as an “educators’ wish list” and denounced the Evidence-Based approach as a “consultant’s choice.”<sup>148</sup> Many of these Professional Judgment studies are presented as scientifically based analyses, but objective research examination of this methodology reveals that they are guided by opinions.<sup>149</sup>

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<sup>145</sup> John Chambers and J. T. Parrish. 1994. State level Education Finance, in *Cost analysis for education decisions Advances in educational productivity v 4*, W.S. Barnett ed. Greenwich, CT: JAI Press.

<sup>146</sup> William Duncombe, John Ruggiero, and John Yinger. 1996. Alternative Approaches to Holding Schools Accountable, in *Holding Schools Accountable*, H.F. Ladd ed. Washington, D.C.: The Brookings Institute.

<sup>147</sup> David Conley and Lawrence O. Picus, “Oregon’s quality education model: Linking adequacy and outcomes,” *Educational Policy* 17 (2003): 586-612.

<sup>148</sup> Eric Hanushek. The Alchemy of “Costing Out” an Adequate Education. (Palo Alto, CA: Hoover Institution, Stanford University, October 2005).

<sup>149</sup> R. Craig Wood and Anthony R. Rolle, “Improving “Adequacy” Concepts in Education Finance: A Heuristic Examination of the Professional Judgment Research Protocol,” *Educational Considerations* 35, no. 4 (2007): 51-55.

In the Evidence-Based approach there is a requirement of a specific empirical research basis for recommended resource configurations and provisions. This approach is built around the concept of determining costs of multiple educational strategies that are considered to be the most successful in supporting student achievement.<sup>150</sup> This approach incorporates a variety of researched educational concepts rather than one intervention. The majority of these strategies are virtually impossible to cost out, and generalizability is questionable. Evidence-Based studies may assert research basis, but standards for acceptable research involved in this approach are indefinite.<sup>151</sup>

The Successful Schools approach is initiated with an examination of the standardized student achievement results of schools in a given district or state. Additional data and financial information from “successful” schools meeting the desired standard are utilized to determine adequate expenditure levels.<sup>152</sup> In a modified version of the Successful Schools approach, the Successful Districts approach identifies districts that have been successful in educating students to the state level of proficiency, and uses the weighted averages of expenditures to establish a base level of funding adequacy. Outlier districts, those that spend significantly above or below the average, may be removed from the analysis.<sup>153</sup> The approach is based on the concept that school districts spending less than this specified amount would reach this newly determined adequate level of funding. Another modified version of the Successful

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<sup>150</sup> Ibid.

<sup>151</sup> Ibid.

<sup>152</sup> Baker, “Evaluating the Reliability, Validity, and Usefulness of Education Cost Studies”

<sup>153</sup> Ibid.

Schools approach, The Improvement Model, identifies districts that have experienced the most significant achievement gains over a period of time. The average expenditures of these districts, removing outliers, are analyzed to determine an adequate spending level.<sup>154</sup> One flaw in these approaches is that the estimate is based on a highly select sample. The programs and implementation costs may differ considerably in an altered setting.<sup>155</sup> Socio-economics plays a significant role in implementation costs. Hanushek criticized these methods because schools meeting the standards are mostly comprised of more advantaged student populations. He indicated that they spend more than necessary to meet the standards because of local support and emphasis on education.<sup>156</sup>

Statistical Analysis models have been research tools utilized to establish relationships between money and student achievement. Production Function models and Cost Function models are statistical analyses that create regression equations utilizing multiple variables to establish a curve of best fit. The education Production Function model has been utilized to determine which quantities and qualities of educational resources are positively correlated with a specific set of student outcomes. These studies can also determine which quantities and qualities of educational resources are more or less effective in school districts with different types of students or across various types of districts. This model identifies the possible outcomes that can

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<sup>154</sup> James Peyser and Robert Costrell, "Exploring the Costs of Accountability," *Education Next*, Spring 2004, pp. 23-29, [http://media.hoover.org/documents/ednext20042\\_22.pdf](http://media.hoover.org/documents/ednext20042_22.pdf)

<sup>155</sup> Thomas Downes. What is adequate? Operationalizing the concept of adequacy for New York. February 2004. Prepared for the EFRC Symposium on School Finance and Organizational Structure in New York State, <http://www.bos.frb.org/economic/nescg/papers/Downes.pdf>

<sup>156</sup> Eric Hanushek. The Alchemy of "Costing Out" an Adequate Education. (Palo Alto, CA: Hoover Institution, Stanford University, October 2005).

be achieved with a provided combination of inputs. Given a quantity of available inputs, it is possible to calculate the maximum output that can be achieved. In a simple model, available resources for education are the inputs, student achievement is the outcome, and schooling is the process that translates inputs to outcomes. Poverty is a variable that can be included in Production Function models. The complexity of the schooling process and the number of inputs that can impact outcomes makes application of Production Function research questionable in education contexts.<sup>157</sup> It is challenging to determine the most efficient method of this process, and equally difficult for policymakers to agree upon desired levels of educational outcomes.

Eric Hanushek has published production function research. In one meta-analysis study, Hanushek analyzed 187 various regression equations from other studies with consideration of seven different inputs: 1) Teacher/pupil ratio; 2) Teacher education; 3) Teacher experience; 4) Teacher salary; 5) Per pupil expenditure; 6) Administrative inputs; and 7) Facilities.<sup>158</sup> It is generally accepted that smaller classes leads to higher student achievement, yet out of 152 studies considered by Hanushek, only 14 presented that lower pupil/teacher ratios were positively correlated to student achievement. Only 8 out of 113 studies indicated that the level of teacher education is significant to an increase in student performance. More positive correlations were discovered with teacher experience and teacher salary variables. Hanushek attributed this to other factors rather than the individual variable itself. Hanushek stated similar findings concerning per-pupil expenditures and administrative inputs. Hanushek also

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<sup>157</sup> Lawrence O. Picus, "Does Money Matter in Education? A Policymaker's Guide," National Center for Education Statistics, Selected papers in School Finance, 1995.

<sup>158</sup> Eric A. Hanushek, "The Impact of Differential Expenditures on School Performance," *Educational Researcher* 18 (1989): 45-65.

determined that there is little correlation between facilities and student performance. Hanushek concluded that, "There is no strong or systematic relationship between school expenditures and student performance."<sup>159</sup>

Other researchers have disputed Hanushek's evaluation for a host of different reasons. Hedges, Laine, and Greenwald reviewed the same studies that Hanushek utilized in the aforementioned analysis, but used different statistical procedures other than the vote counting procedure that was previously conducted. "These analyses are persuasive in showing that, with the possible exception of facilities, there is evidence of statistically reliable relations between educational resource inputs and school outcomes, and there is much more evidence of positive relations than of negative relations between resource inputs and outcomes."<sup>160</sup> Other arguments cite reasons for Hanushek's contradictory results including, lack of information of sample size, misinterpretation of results of hypothesis testing, inclusion of confounded data elements, and choice of performance measure.<sup>161</sup> According to Hedges, Laine, and Greenwald's research, "The analysis found that a broad range of resources were positively related to student outcomes, with effect sizes large enough to suggest that moderate increases in spending may be associated with significant increases in achievement."<sup>162</sup> Due to the preponderance of mixed results, some researchers have deduced that models other than the production-function model may be more appropriate

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<sup>159</sup> Hanushek, "The Impact of Differential Expenditures on School Performance"

<sup>160</sup> Larry Hedges, Richard Laine, and Robert Greenwald, "Does Money Matter? A Meta-Analysis of Studies of the Effects of Differential School Inputs on Student Outcomes," *Educational Researcher* 23 (1994): 5-14.

<sup>161</sup> Ibid.

<sup>162</sup> Robert Greenwald, Larry V. Hedges, and Richard D. Laine, "The Effect of School Resources on Student Achievement," *Review of Educational Research* 66 (1996): 361-409.

when dealing with this issue in education.<sup>163</sup> Other models exercise a different approach to provide analyses of this issue.

Another type of statistical analysis, the Cost Function model, employs a regression analysis with expenditure per pupil as the dependent variable, and district and student characteristics, as well as desired performance levels, as the independent variables. The result produces an adequate expenditure per pupil for the average district, and then, for all other districts. This model is used to determine a cost estimate for students to achieve a desired set of educational outcomes, and to estimate how those costs differ in districts with varying characteristics that serve students with varying needs.<sup>164</sup> The cost of students achieving a state standard could be more in an urban district than in a suburban or more affluent district. It is possible to apply this model across all districts to come up with the minimum cost to educate students to an established, adequate standard. The Cost Function is an extension of the Production Function in which the goal is to directly estimate, in a single model, the costs of achieving desirable outcomes, and to estimate the cost of associated inputs. Most outcome measures in Cost Function studies have been narrowly specified, including primary measures of student achievement in core subject areas.<sup>165</sup> Education Cost Functions can provide evidence on the spending implications of student needs, including poverty. Some results of this model suggest funding levels for inner-city districts of two to three times

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<sup>163</sup> Jim C. Fortune and John S. O'Neil, "Production Function Analyses and the Study of Educational Funding Equity: A Methodological Critique," *Journal of Education Finance* 20, no. 1 (1994): 21-46; David H. Monk, "Educational Productivity Research: An Update and Assessment of Its Role in Education Finance Reform," *Educational Evaluation and Policy Analysis* 14 (1992): 307-332; Steven Hodas, "Is Water an Input to a Fish? Problems with the Production-Function Model in Education," *Education Policy Analysis* 1, no. 12 (1993).

<sup>164</sup> Baker, "Evaluating the Reliability, Validity, and Usefulness of Education Cost Studies"

<sup>165</sup> Ibid.

average expenditure levels, making it politically problematic.<sup>166</sup> Not every child identified as living in poverty or qualifying for subsidized lunch needs specific, supplemental educational programs, or services. Cost Function models often include a measure of the numbers of students in poverty in a given district as a broad socioeconomic proxy rather than a measure of individual programming needs or services. These broad-scoped financial additions (sometimes incorporated in the form of reduced class sizes and teacher quality) often correlate with differences in student outcomes for impoverished students.<sup>167</sup> Cost Functions can also be utilized to develop more traditional adjustments in funding for student needs – weighted pupil counts.<sup>168</sup> Cost Functions can be useful to generate a cost index for each school district in a given state, and indices denote the relative cost of producing desired outcomes in each district. A plethora of factors affect school finance research in confounding ways. Given numerous approaches to determining education adequacy, the convoluted relationship between money and student achievement is still being examined.

It has been reasonably established that simply providing additional funding, or “throwing money at schools,” will not always improve student achievement. Yet, it is also accepted that money and resources can be a significant force for student learning. In various studies, targeting increased spending on specific reforms and interventions

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<sup>166</sup> William Duncombe, John Ruggiero, and John Yinger. 2003. “Financing an Adequate Education: A Case Study of New York.” In W.J. Fowler Jr. ed, *Developing in School Finance:2001-2002*. Washington, DC: NCES, U.S. Department of Education, p. 141.

<sup>167</sup> Baker, “Evaluating the Reliability, Validity, and Usefulness of Education Cost Studies”

<sup>168</sup> Bruce Baker and William Duncombe, “Balancing District Needs and Student Needs: The Role of Scale Adjustment and Pupil Need Weights in School Finance Formulas,” *Journal of Education Finance* 29, no. 3 (2004): 195-221.

has been effective in increasing student achievement.<sup>169</sup> Educational leaders and policymakers continue the endeavor to intensify the effects of focused funding on increasing student achievement. There are a multitude of reform ideas and initiatives in states across the nation. Hanushek asserts that incentive based programs, including merit-based pay and school choice options, are also possible solutions to increased performance.<sup>170</sup> The specific manner in which money is spent at districts and schools, and quality program implementation are concentrations for research that can provide more answers to the money-achievement relationship puzzle. Various approaches and statistical analyses that clearly explicate the relationship between money and student achievement are still debated and are beyond universal acceptance. Studies for further understanding continue.

### **State Education Funding**

Education is a monumental responsibility that each state must prudently manage. State Legislatures approach this responsibility with varying systems, laws, policies and strategies. Provision of resources for educational purposes is one area in which state legislatures differ substantially. Some education resources are provided by the federal

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<sup>169</sup> Barbara A. Wasik and Robert E. Slavin, "Preventing Early Reading Failure With One-To-One Tutoring: A Review of Five Programs," *Reading Research Quarterly*, 28, no. 2, (1993): 178-200; Joseph R. Jenkins, and Kathleen Pool, "Effects of Tutoring in Phonological and Early Reading Skills on Students at Risk for Reading Disabilities," *Journal of Learning Disabilities*, 33, no. 4, (2000): 579-590; Frederick Mosteller, Richard J. Light, and Jason A. Sachs, "Sustained Inquiry in Education: Lessons from Skill Grouping and Class Size," *Harvard Education Review* 66, no. 4 (1996): 797-842; U.S. Department of Health and Human Services, "Teaching Children To Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction," *Report of the National Reading Panel*, 2000, <http://www.nichd.nih.gov/publications/nrp/smallbook.cfm>; Frances A. Campbell et. al., "Early Childhood Education: Young Adult Outcomes From the Abecedarian Project," *Applied Developmental Science* 6, no. 1 (2002): 42-57; Craig T. Ramey, Frances A. Campbell, and Clancy Blair, "Enhancing the Life Course for High-Risk Children: Results from the Abecedarian Project," in *Social Programs That Work*, edited by Jonathan Crane (Russell Sage Foundation, 1998), pp. 163-183.

<sup>170</sup> Eric A. Hanushek, "The Failure of Input-Based Schooling Policies," *Economic Journal* 113, (2003): F64-F98.

government and significant funds are generated by local means, but in most states the majority of resources provided to public schools come from state revenues. The share of state funds is generated by state sales taxes and income taxes, while property taxes generate the local share of funding for schools. Levels of funding and specific policies concerning taxation for education have continually been controversial. The conflicts and politics vary in each state, resulting in significant differences in levels of funding for education. In addition, the percentage of families and children living in poverty varies from state to state, thus the financial burden of educating poor students varies as state legislatures and schools try to compensate for societal issues. Table 2-6 displays education revenue and expenditure data in conjunction with the poverty rate and FRPL eligibility percentage for each state. The average amount of money spent on each public school student in 2006 ranges from \$5,464 in Utah to \$14,954 in New Jersey.<sup>171</sup> These numbers do not provide all perspectives and comparisons. Analogous to comparing the United States to other OECD countries, consideration of state revenues, wealth in each state and the different types of needs that exist for the children in each state can present a much different picture about the overall effort of the state in terms of education funding. Distribution of these funds is a serious conundrum in fiscal and political discussions. There are several different variations of formulas that state legislatures utilize in order to proffer funding to districts and schools. There are differences in formulas which present contrasting state philosophies about addressing poverty and other student need factors related to education.<sup>172</sup> Considerations of wealth

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<sup>171</sup> Table 2-7.

<sup>172</sup> David C. Thompson, R. Craig Wood, and Faith E. Crampton, *Money and Schools* (New York: Eye on Education, 2008).

disparities and disproportionalities in fiscal provisions have been fundamental concerns. Issues of equity and adequacy are key elements in funding systems. These systems are the point of contention in courts, and they are the vehicle for providing equitable and adequate educational resources to students across the nation.<sup>173</sup>

### **State Funding Formulas**

A review of state funding formulas, origins, history, and distinctions provides context for study. In the early 1900s, as legislatures began considering resource allocation practices, researchers understood that wealthy districts with high property values generated more taxes for schools than neighboring, less-advantaged counterparts. Elwood Cubberley asserted that all children of the state were equal and entitled to equal advantages, spawning a basis for state aid programs for school districts.<sup>174</sup> The work of Harlan Updegraff added ideas for variable equalization and reward for tax effort, and George Strayer and Robert Haig initiated the concept of a minimal educational program offering. Paul Mort continued in 1924 by defining weighted pupil expenditures, arguing that educational program costs necessary for equality will differ according to influential variables.<sup>175</sup> Even at the inception of funding formulas, wealth disparity and disproportionalities were strongly evident in education finance.

Based on the work of education finance theorists, state aid formulas were designed around multiple concerns for funding fairness. According to the general philosophy during those times, state formulas were supposed to attend to the unique needs of each district, addressing variables that cause inequalities, and should have

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<sup>173</sup> Thompson, Wood, and Crampton, *Money and Schools*

<sup>174</sup> Thompson, Wood, and Crampton, *Money and Schools*

<sup>175</sup> Ibid.

applied universally to all districts in the state. State legislatures implemented formulas of different types based on varying philosophies specific to each state.<sup>176</sup>

A Flat Grant is a set amount of money based on numbers of pupils, provided to districts without any acknowledgement of local district funding capabilities and contributions. Localities had the option to supplement the grant with local revenue. Although district wealth disparity remained unchanged under this model, several legislatures utilized this method until the 1970s when education finance litigation began to emerge. Equalization Grants work to match resources inversely according to local district capabilities. Under this model, the primary concern is often whether legislatures set taxation amounts or whether this decision is left to the local district. Foundation Plans, a type of Equalization Grant, have been the most utilized equalization formulas. Foundation Plans require that districts provide a minimum educational program, provide means for additional local spending, and are inversely proportional to district funding ability. Foundation Plans provide for an established minimal education for all students, despite variations in wealth. Resource Accessibility Plans, another type of Equalization Grant, also equalize revenues, but allow for even more local contribution and variability as long as revenue is not the reason for the variability. These plans include components of district power equalization, guaranteed tax base, and guaranteed tax yield. These vehicles of equalization operate under the philosophy that the ability to raise money from local taxes should be equalized, but the decision as to how much money should be raised is left to the local district. It is based on the wealth neutrality principle - the quality of a child's education should not be a function of the wealth of the district, but the wealth

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<sup>176</sup> Ibid.

of the state as a whole.<sup>177</sup> Many legislatures utilize multitier grants that have components of several different types of plans. A common combination includes Flat Grants or Foundations with some form of percentage equalization. Under a Full State Funding Grant, legislatures provide all resources for student education with no local contribution. All local differences in taxes and spending are eliminated, and there is no local fiscal control. Hawaii is the only state utilizing this plan with a single school district.<sup>178</sup> There are multiple formulas that can be utilized by states as the primary funding mechanism for education. Different legislatures choose different methods based on multiple factors and political realities that are unique to the given state, but all previous descriptions of formulae are only part of the funding programs.

Recognizing the tremendous variations of the sociopolitical structures of states supports the reality that each state educational system functions uniquely. Student need factors are addressed in a host of different ways. Some approaches place varying degrees of control on the amount of local funding that may be utilized. Some approaches ensure minimum funding for specific goals. Each approach has further distinctive qualities, yet debates exist concerning the actual funding impact of the different approaches compared to the political climate of the state.<sup>179</sup> Funding formulas, in addition to legislative and judicial decisions ultimately determine true allocations. Funding formulas, although varied, are designed to moderate issues of wealth inequality at a macro level, redistributing funds across districts within a state, with a goal of

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<sup>177</sup> Thompson, Wood, and Crampton, *Money and Schools*

<sup>178</sup> Ibid.

<sup>179</sup> Thomas A. Downes and Thomas P. Pogue, "Adjusting School Aid Formulas for Higher Cost of Educating Disadvantaged Students," *National Tax Journal* 47, no. 1 (1994): 89-110.

horizontal equity. The need equalizations and vertical equity systems within state funding plans are evidence of even more contrast and variance among states. Foundations of basic state formulas focus on horizontal equity, ensuring that funding formulas make equal provisions for all children. There are other layers and elements of funding plans that are crucial adjustments to these basic formulas. The concept of need equalization focuses on the fact there are significant differences in children that require more action beyond horizontal equity. Compensatory education programs aimed at poverty, bilingual education programs, and special education programs are central to many vertical equity considerations as they address the different educational needs of different children.<sup>180</sup> Compensatory education programs attempt to redress socioeconomic issues that burden students in the classroom, causing many students to necessitate additional resources to be educated. Bilingual education programs, the necessity for this type of need equalization and the associated additional funding vary considerably among states. Special education programs, also varying from state to state, have been a focal point and area of intense litigation when it comes to need equalization programs. Some special education dollars are designated in federal legislation such as the Individuals with Disabilities Education Act (IDEA), enacted by Congress in 1990, and disputes will continue as special education students require additional monies. The majority of need equalization that occurs is in the form of per pupil weights and additional flat grants.<sup>181</sup> State legislatures enact some form of need

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<sup>180</sup> Thompson, Wood, and Crampton, *Money and Schools*

<sup>181</sup> Ibid.

equalization funding with a basic formula in order to address these fundamental differences in children and their education.

Every State Department of Education in the United States operates a unique funding system in order to distribute resources to each LEA (Local Education Authority).<sup>182</sup> Multifaceted systems are amalgamated in order to meet the political, legislative and educational requirements of the state. These systems are altered periodically in each state based on fiscal climates, legislative actions, and societal and political realities.<sup>183</sup> There is not a public clearinghouse that retains up-to-date state education finance system changes and current descriptions. In a 2009 publication, Verstegen asserted,

It has been over 10 years since information has been available for all 50 states related to state-financing policies and programs for public elementary and secondary education. The most recent 50-state finance survey was conducted by the National Center for Education Statistics in 1997-98. Prior to that release, the Education Commission of the States disseminated a state-finance survey in 1990.<sup>184</sup>

Integrated into these state finance systems, compensatory education policies and apportionments change. The state poverty weights reported in education research are incongruent over time due to the perpetual changes within state finance systems. Individual State Departments of Education may or may not publish current descriptions of finance formulas, compensatory practices and poverty weights.

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<sup>182</sup> Ibid.

<sup>183</sup> Downes and Pogue, "Adjusting School Aid Formulas for Higher Cost of Educating Disadvantaged Students"

<sup>184</sup> Deborah A. Verstegen and Teresa S. Jordan. "A Fifty-State Survey of School Finance Policies And Programs: An Overview," *Journal of Education Finance* 34, no. 3 (2009): 213-225.

The methods by which state legislatures make vertical equity adjustments may be as diverse as the children that benefit. Although there are similar components, the funding system of every state differs from its counterpart. State poverty-based education funding programs have varied significantly in terms of size, focus, and method of funding. Some legislatures have adjusted the basic state aid formula to address poverty concerns, while others supply separate categorical grants, providing supplemental distributions that augment the basic state aid. Some legislatures utilize both approaches. In 2002, thirty-eight state legislatures distributed some education funds on the basis of poverty. Twenty state legislatures based the distribution of poverty-based funding on FRPL, and ten state legislatures determined this funding based on free lunch eligibility only. Six state legislatures used the U.S. Census Bureau data to determine poverty aid for education, three states used the number of children receiving Temporary Assistance For Needy Families (TANF) (formerly known as “welfare”) benefits, and one state used Food Stamp program data to determine compensatory program funding.<sup>185</sup> Acknowledging concentration of poverty to be a factor, twenty state legislatures relegated some or all low-income funding to school districts with poverty rates above a specified threshold, and fifteen states varied the amount of supplementary funding per poor student, providing larger amounts of funds for school districts with higher poverty rates.<sup>186</sup> Legislatures provided different parameters as to how funds had to be utilized. Stipulations, restrictions and areas of focus varied. There are multiple factors combined with poverty that attribute to decline in

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<sup>185</sup> Kevin Carey, “State Poverty-Based Education Funding: A Survey of Current Programs and Options for Improvement,” Center on Budget and Policy Priorities, Washington DC (2002).

<sup>186</sup> Ibid.

student achievement. In 2002, thirteen states combined poverty measure with other student risk factors such as ethnicity, limited English proficiency, single-parent households, and mobility rates.<sup>187</sup> The poverty-based funding efforts of states varied as well. The per-pupil poverty-based funding effort ranged from \$111 in Arkansas to \$5,199 in Massachusetts, noting that some states provided no poverty-based monies at all.<sup>188</sup> Among the states that did provide poverty-based funding, the amount of additional funding ranged from 1.9 percent to 58.7 percent of the average per-student allocation. Thirty-eight states provided some level of poverty-based funding and eleven states provided poverty-based funding that exceeded 25 percent of the average per-pupil funding level.<sup>189</sup> Based on 2007 data, another study reported differences in compensatory practices based on poverty and other at risk factors.

Currently, 34 states fund students that are low income, a proxy for being at risk of dropping out of school, or funding is based on students in need of remediation. In Kentucky, the eligibility criterion is based on students eligible for the federal-free lunch program in Michigan, it is free breakfast, lunch or milk per pupils. In Nebraska, a progressive percentage are multiplied by students qualified for free lunches/milk, or children under 19 years of age living in a household with adjusted-gross income less than \$15,000, whichever is greater. In Iowa, eligibility is based partially on both free- and reduced-lunch (F&R) count in addition to budget enrollment of the school district. Texas supports students eligible for F&R lunch and pupils who are pregnant. New York provides state support for students who are at risk for not meeting learning standards. Likewise, South Carolina provides funding for students who fail to meet statewide standards in reading, writing, and math, or who do not meet first grade readiness-test standards. Weights vary but range between 1.0 (an additional 100%) in Minnesota for free lunch recipients, to 5% in Mississippi. Most states provide an additional 25% in funding for low income students and target eligibility on either federal free or reduced-price lunch status or both. Connecticut provides an

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<sup>187</sup> Ibid.

<sup>188</sup> Ibid.

<sup>189</sup> Kevin Carey, "State Poverty-Based Education Funding: A Survey of Current Programs and Options for Improvement," Center on Budget and Policy Priorities, Washington DC (2002).

additional 25%, Georgia, 31%; Hawaii, 10%; Louisiana, 19%; Maine, 20%; Michigan, 11.5%; Minnesota, 100% for free-lunch recipients and 50% for reduced lunch recipients; Missouri, 25%; Oregon, 25%; South Carolina, 26%; and Texas and Vermont, 25%.<sup>190</sup>

The different methods state legislatures employ to increase vertical equity yield varying results. A 2010 report presented a National Report Card on Fair School Funding that measured the fairness of school finance systems of all fifty states. “In this report, “fair” school funding is defined as a state finance system that ensures equal educational opportunity by providing a sufficient level of funding distributed to districts within the state to account for additional needs generated by student poverty.”<sup>191</sup> The Report Card consisted of four separate but interrelated fairness measures: Funding Level, Funding Distribution, Effort and Coverage. Statistical analyses and other evaluations were conducted in each measure as state funding systems were ranked. Fourteen states had progressive funding systems, providing greater funding to high-poverty districts than to low-poverty districts. The most progressive funding systems were in Utah, New Jersey and Minnesota.<sup>192</sup> Twenty states had regressive funding systems, providing high-poverty districts with less state and local revenue than low-poverty districts, though the pattern was nonsystematic in fourteen of those states. Alabama, Illinois, New Hampshire, New York, Pennsylvania, and Texas displayed noticeably regressive funding patterns.<sup>193</sup> Six states were positioned relatively well on all four measures,

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<sup>190</sup> Deborah A. Verstegen and Teresa S. Jordan. “A Fifty-State Survey of School Finance Policies And Programs: An Overview,” *Journal of Education Finance* 34, no. 3 (2009): 213-225. Overview,” *Journal of Education Finance* 34, no. 3 (2009): 213-225.

<sup>191</sup> Bruce Baker, David Sciarra, and Danielle Farrie, “Is School Funding Fair A National Report Card,” September 2010, [http://www.schoolfundingfairness.org/National\\_Report\\_Card.pdf](http://www.schoolfundingfairness.org/National_Report_Card.pdf)

<sup>192</sup> Ibid.

<sup>193</sup> Ibid.

receiving Cs or higher on Effort and Funding Distribution, and ranked in the top half in Funding Level and Coverage. These states were Connecticut, Iowa, Massachusetts, New Jersey, Vermont, and Wyoming.<sup>194</sup> Four states earned below-average ratings on each of the four measures: Illinois, Louisiana, Missouri, and North Carolina. These were low-effort, regressive states receiving Ds or Fs on both indicators, and ranked below average in terms of Funding Level and Coverage.<sup>195</sup> This report on state education funding is another example of researchers analyzing compensatory practices of state legislatures.

### **Adequacy, Standards, and Poverty**

Education policies that shifted focus from horizontal equity (equal distribution of resources for all students) to vertical equity (equitable distribution of resources with recognition of student need factors) have been developments in the Twentieth Century.<sup>196</sup> In the 1990s, policy focus in education finance experienced another paradigm change. During the 1990s, two primary factors shifted the focus of school finance to adequacy. The first was whether differences in dollars per pupil produced substantive differences in educational opportunities or student learning – the ‘Does money matter?’ issue. The second was that the answer, in a standards-based environment, had to link dollars to results – student achievement.<sup>197</sup> Standards-based education has continually increased in recent years. A test for school finance policy is whether it provides sufficient, adequate, funding for districts and schools to implement

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<sup>194</sup> Ibid.

<sup>195</sup> Ibid.

<sup>196</sup> Thompson, Wood, and Crampton, *Money and Schools*

<sup>197</sup> Odden, Allan, and L. O. Picus, 2000. *School finance: A Policy Perspective*. New York: McGraw-Hill.

educational programs to educate students to a specified, measurable level or standard. Adequacy can be explained as a level of resources sufficient to achieve defined educational results.<sup>198</sup> Some courts utilize adequacy definitions that consider the likelihood that an education will prepare a student to be a contributing member of society.<sup>199</sup> Adequacy is unlike equity because it emphasizes outputs over inputs and shifts the concentration away from equal provisions for all students.<sup>200</sup> Determining adequacy requires attaching fiscal amounts to programs and implementation schemes. Legislatures' provision of funding for an "adequate" education may be based more on available funds and politics than what is necessary to achieve targeted student outcomes.<sup>201</sup> Clearer, more measurable objectives have emerged in the era of standards, and in some cases revenues, allocations, and expenditures are related to these objectives. Adequacy discussions consider the quantity of resources necessary for students to reach a defined standard. It is certain that additional resources are required for students from poverty to reach a given educational standard.<sup>202</sup>

In its current condition, education is controlled, measured and dominated by standards. Mandates from No Child Left Behind<sup>203</sup> (NCLB) legislation have momentous

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<sup>198</sup> David T. Conley, and Lawrence O. Picus, "Oregon's Quality Education Model: Linking Adequacy and Outcomes," *Educational Policy* 17, no. 5 (2003): 586-612.

<sup>199</sup> Deborah Verstegen and Terry Whitney, "From Courthouses to Schoolhouses: Emerging Judicial Theories of Adequacy and Equity," *Educational Policy* 11, no. 3 (1997): 330-352.

<sup>200</sup> William Clune, "The Shift From Equity to Adequacy in School Finance," *Educational Policy* 8, no. 4 (1994): 376-394.

<sup>201</sup> Lawrence Picus, "Defining Adequacy: Implications for School Business Officials," *School Business Affairs* 65, no. 1 (1999): 27-31.

<sup>202</sup> Deborah Verstegen, "Financing the New Adequacy: Towards [sic] New Models of State Education Finance Systems That Support Standards Based Reform," *Journal of Education Finance* 27, no. 3 (2002): 749-81.

<sup>203</sup> 20 U.S.C. § 6319

impacts on education systems and practices. Student retentions, employee bonuses, school choice and school reorganizations are some outcomes of mandates from the standards era.<sup>204</sup> Legislatures have established standards for education and student achievement and the accountability movement is now deep-rooted in education systems across the nation. Funding for the legislative mandates associated with standards and accountability is not superfluous or universal, and school districts analyze the manner in which they utilize funds in order to determine if mandates can be met given the level of provided resources. Resource allocation is being reviewed in education institutions in an attempt to do more with less and meet legislative requirements. State legislative standards are the core of school curricula and are the driving force of assessment and evaluation. While changes have been required by law throughout areas of education in order to meet the standards-based policies, changes in funding models have not experienced the same degree of transformation.<sup>205</sup> Formulas were created on the premise of providing the minimum education needed to function and contribute in the industrial era. Since then, society, teaching, learning and nearly every educational system has changed. Claims commissioned by teachers unions and school board associations report that an additional \$85 to \$150 billion is necessary for schools to meet NCLB performance goals.<sup>206</sup> Funding systems should provide adequate resources for schools to meet legislative mandates. Additional resources are necessary for students in poverty to reach legislatively mandated standards. Academic standards,

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<sup>204</sup> 20 U.S.C. § 6143, 20 U.S.C. § 6154

<sup>205</sup> Verstegen, "Financing the New Adequacy: Towards [sic] New Models of State Education Finance Systems That Support Standards Based Reform"

<sup>206</sup> James Peyser and Robert Costrell, "Exploring the Costs of Accountability," *Education Next* (Spring 2004): 23-29, [http://media.hoover.org/documents/ednext20042\\_22.pdf](http://media.hoover.org/documents/ednext20042_22.pdf)

educational adequacy, and accountability have become the mantra of public education. Inadequate performance on standardized tests can mean retention for elementary school students. In 2008, twenty-three states required passage of an exit exam for high school graduation.<sup>207</sup> Despite standards, state legislatures have been slow to activate funding mechanisms specifically designed to serve students in meeting those standards. Many formulas are still based on a design of wealth equity rather than a design of adequacy for legislated standards.<sup>208</sup>

Despite indisputable evidence that socioeconomic elements, including poverty, play a critical role in the achievement of students, not all state legislatures utilize poverty as a student need factor into funding formulas. Adjustments are often made on political decisions rather than evidence.<sup>209</sup> “Historically, the amount of funding provided to public schools has been based on a politically determined amount of money available for state education aid - without an analysis of educational needs - and on local ability to raise money through property taxes. As a result, school revenues are the result of political struggles over how to distribute money among a state's school districts.”<sup>210</sup> Pupil need weights are common in state formulas, yet they can be based more on political and budgetary considerations rather than careful analysis of the cost impacts of student needs. State legislatures may significantly underestimate the influence of poverty on

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<sup>207</sup> Edweek Report, Diploma Counts 2008. EPE Research Center, Washington DC, [http://www.edweek.org/media/ew/dc/2008/DC08\\_Press\\_FULL\\_FINAL.pdf](http://www.edweek.org/media/ew/dc/2008/DC08_Press_FULL_FINAL.pdf)

<sup>208</sup> Deborah Verstegen, “Has Adequacy Been Achieved? A Study of Finances and Costs a Decade After Court Ordered Reform,” *Journal of Education Finance* 32, no. 3 (2007): 304-327.

<sup>209</sup> Deborah Verstegen, “Has Adequacy Been Achieved? A Study of Finances and Costs a Decade After Court Ordered Reform,” *Journal of Education Finance* 32, no. 3 (2007): 304-327.

<sup>210</sup> National Access Network, Teachers College, Columbia University, <http://www.schoolfunding.info/policy/CostingOut/costingout.php3>

cost.<sup>211</sup> Results of some funding studies may be biased toward plaintiffs or defendants in order to serve client needs due to political and economic factors.<sup>212</sup> A New York Cost Function study determined that students in poverty cost districts twice as much as a regular student to reach a given performance level.<sup>213</sup> An econometric analysis concluded that state school funding formulas generally underfund programs designed to educate poor children. This study also indicates a general per-pupil cost of 2.59 for at-risk students.<sup>214</sup> A state formula adequacy study in Massachusetts recommended that students from poverty required a weighting of 3.0 where the percentage of low-income students in a school was 50 percent or higher.<sup>215</sup> In a study conducted for the state of Wisconsin utilizing a resource cost approach, the conclusion indicated that the funding of at-risk students would require a cost differential of 3.4.<sup>216</sup> Another study suggests that a cost relationship to degrees of poverty is applicable to education funding. In this situation, per-pupil weighting for students with median family income and above are weighted at 1.0, students eligible for FRPL are weighted at 2.0, students eligible for free lunch are weighted at 3.0, and students at the Orshansky Poverty Level and below are

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<sup>211</sup> Baker and Duncombe, "Balancing District Needs and Student Needs: The Role of Scale Adjustment and Pupil Need Weights in School Finance Formulas"

<sup>212</sup> Verstegen, "Has Adequacy Been Achieved? A Study of Finances and Costs a Decade After Court Ordered Reform"

<sup>213</sup> William Duncombe, John Ruggiero, and John Yinger. 2003. "Financing an Adequate Education: A Case Study of New York." In W.J. Fowler Jr. (ed.), *Developing in School Finance:2001-2002*. Washington, DC: NCES, U.S. Department of Education, p. 141.

<sup>214</sup> Andrew Rechovsky and Jennifer Imazeki. 1997. "The Development of School Finance Formulas to Guarantee the Provision of Adequate Education to Low-Income Students." *Developments in School Finance*. Washington, DC: National Center for Education Statistics.

<sup>215</sup> Deborah Verstegen. 2003. "Calculation of the Cost of an Adequate Education in Massachusetts Under the Curriculum Frameworks." Charlottesville, VA: Deborah A. Verstegen Associates.

<sup>216</sup> Richard Rothstein and Whitney Allgood. 2001, April 11. "What Does an Adequate Education Cost?" Presentation at the American Education Research Association Annual Conference, Session 5.53, Seattle WA.

weighted 4.0.<sup>217</sup> There is no evidence that the gradations of poverty are so precisely symmetric with costs. There is evidence that costs rise with concentrations and density in the spatial distribution of poverty. School finance literature has repeatedly utilized a 20 percent weight estimate for additional poverty program costs based on the historical pattern of Title I funding.<sup>218</sup> This prevailing cost estimate is based on how much the federal government was willing to spend on Title I allocations in 1987,<sup>219</sup> not on actual, existing program costs.<sup>220</sup> Legislatures have utilized this unfounded 20 percent weight in the absence of definitive research or due to political considerations.<sup>221</sup> “Poverty weights nationally average around 17 percent additional money.”<sup>222</sup> “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.”<sup>223</sup> When recommending a cost differential for low-income students in

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<sup>217</sup> Amartya Sen, *Inequality Reexamined*. (Oxford: Clarendon, 1995).

<sup>218</sup> David Figlio. 2004. “Funding and Accountability: Some Conceptual and Technical Issues in State Aid Reform.” In J. Yinger (ed.), *Helping Children Left Behind: State Aid and the Pursuit of Educational Equity*. Cambridge, MA: MIT Press, p. 106.

<sup>219</sup> Henry Levin, “Financing the Education of At-Risk Students,” *Education Evaluation and Policy Analysis* 11, no. 1 (1989): 47-60.

<sup>220</sup> David Figlio. 2004. “Funding and Accountability: Some Conceptual and Technical Issues in State Aid Reform.” In J. Yinger (ed.), *Helping Children Left Behind: State Aid and the Pursuit of Educational Equity*. Cambridge, MA: MIT Press, p. 106.

<sup>221</sup> Ibid.

<sup>222</sup> 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.

<sup>223</sup> 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).

Wyoming, Guthrie indicated that the actual cost of these programs was not well documented.<sup>224</sup> He then advised borrowing the Kentucky add-on rate (15 percent) for children qualifying for free lunch if the population exceeded 50 percent of the overall enrollment.<sup>225</sup> In absence of definitive research, Augenblick recommended in an adequacy study that Kansas utilize relative costs observed in other states.<sup>226</sup> In a commission responsible for recommendations for school reform in Maryland, Augenblick and Meyers used a Professional Judgment approach to determine costs. The weight recommended for low-income children was 1.39 times the base allocation.<sup>227</sup> In their analysis of poverty-based weights, Duncombe and Lukemeyer indicated that cost differentials commonly utilized by states, approximately 25 percent, are likely significantly underestimating the supplemental resources required to support at-risk students in meeting state mandated standards.<sup>228</sup> The poverty-based weights currently utilized in state funding formulas are not consistent, and may not be established on the basis of actual costs of educating students in poverty. Achievement results indicate that students from poverty are not meeting standards. Studies assert various increases in poverty weights and compensatory measures are recommended for low-income students to meet legislatively mandated standards.

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<sup>224</sup> James Guthrie, Gerald Hayward, and James R. Smith. 1997. *A Proposal Cost Based Block Grant Model for Wyoming School Finance*. San Francisco: Management Analysis and Planning Associates.

<sup>225</sup> Ibid.

<sup>226</sup> John Augenblick, John Myers, Justin Silverstein, and Anne Barkis. 2002. "Calculation of Costs of a Suitable Education in Kansas in 2000-2001 Using Two Different Analytic Approaches." Denver: Augenblick & Myers, Inc.

<sup>227</sup> Commission on Education Finance, Equity and Excellence. 2002. Final Report. Annapolis, MD.

<sup>228</sup> William Duncombe and Anna Lukemeyer. 2002. Estimating the Cost of Educational Adequacy: A Comparison of Approaches. Presented at the American Education Finance Association Annual Conference in Albuquerque, NM.

## Florida Education Finance and Accountability

The doctrine of sovereign limits is in effect when determining where the responsibility of education lies. The United States Constitution does not explicate the role of federal government in education, leaving schooling as a state responsibility. There are twelve Articles in the Florida State Constitution; Article IX is dedicated to education. Section 1 of this Article reads,

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 of free public schools that allows students to obtain a high quality education and for the establishment, maintenance, and operation of institutions of higher learning and other public education programs that the needs of the people may require.<sup>229</sup>

Education in Florida is a fundamental value and a paramount duty of the state. This duty is carried out in numerous education systems, managed at various levels.

After significant incidents during the Civil Rights Movement, including *Brown v. Board of Education*<sup>230</sup> in the 1950s, there was a national movement of education finance reform. Reinforced by then Florida Governor Reuben Askew's political commitment to funding equalization, reform efforts were enacted as a legislative mandate in 1973.<sup>231</sup> A new system for funding public elementary and secondary schools emerged and the Florida Education Finance Program (FEFP)<sup>232</sup> replaced the Minimum Foundations Program established in the 1940s. This reform shifted significant monies

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<sup>229</sup> Florida Const. art. 9, § 1

<sup>230</sup> *Brown v. Board of Education*, 347 US 483 (1954).

<sup>231</sup> Chapter 73-345, L.O.F. (1973)

<sup>232</sup> *Ibid.*

from the local school district level to the state level and put into action a new form of funding equalization for Florida's public schools. The FEFP remains as the primary vehicle for funding for education in Florida.

The FEFP is designed to guarantee each student in the Florida public education system the availability of programs and services appropriate to his or her educational needs that are substantially equal to those available to any similar student, notwithstanding geographic differences and varying local economic factors.<sup>233</sup> In order to provide equalization of educational opportunity, the FEFP acknowledges variations in local property tax bases, variations in costs of living, and variations in education program costs based on multiple factors.<sup>234</sup> FEFP funds are established by multiplying the number of full-time equivalent (FTE) students in each of the funded education programs by cost factors to obtain weighted FTE (WFTE) students.<sup>235</sup> WFTE students are then multiplied by a Base Student Allocation and by a District Cost Differential in the major calculation to determine the Base Funding from state and local FEFP funds.<sup>236</sup> Other cost adjustments, including ESE Guaranteed Allocation, Supplemental Academic Instruction, Safe Schools Program, and eight other factors, are added to the Base Funding to comprise the Gross State and Local FEFP dollars. From this, the Required Local Effort is subtracted, Adjustments are added, District Discretionary Lottery Funds

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<sup>233</sup> Ibid.

<sup>234</sup> Florida Department of Education, 2010-11 Funding for Florida School Districts, <http://www.fl DOE.org/fefp/pdf/fefpdist.pdf>.

<sup>235</sup> F.S. § 1011.61(1)(a)

<sup>236</sup> F.S. § 1011.62(1)(c)

are added, and Categorical Program Funds are added to finalize monies for the Total State Finance Program.<sup>237</sup>

A key characteristic of the FEFP is that it establishes financial support for education based upon the individual student participating in a particular program rather than upon the number of classrooms or teachers. Program cost factors serve to ensure that each program receives an equitable share of funds in relation to its relative cost per student. There are various cost factors that the legislature includes in the FEFP to determine WFTE.<sup>238</sup> The 2010-2011 program cost factors included in the FEFP to determine WFTE were: students in kindergarten, grades 1, 2, and 3 were weighted 1.089, students in grades 9, 10, 11, and 12 were weighted 1.031, students in “Support Level 4” ESE programs were weighted 3.523, students in “Support Level 5” ESE programs were weighted 4.935, students in English for Speakers of Other Languages programs were weighted 1.147, and students in programs for Career Education were weighted 1.035.<sup>239</sup> Other student need factors are not included by the legislature in the FEFP to determine WFTE.<sup>240</sup> There is no poverty-based weight that establishes a WFTE for low-income or impoverished children contained in Florida’s mechanism for equitable distribution of funds for education.

Education revenues and expenditures vary from state to state and district to district. School districts receive funding from state, federal and local sources. In 2006-

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<sup>237</sup> F.S. §1011.62(5), F.S. §1011.62(6); F.S. §1011.62(7); F.S. §1011.62(8); F.S. §1011.62(9); F.S. §1011.62(10); F.S. §1012.225; F.S. §1006.28-1006.43; F.S. §1011.68.

<sup>238</sup> F.S. § 1011.61(1)(a)

<sup>239</sup> Florida Department of Education, 2010-11 Funding for Florida School Districts, <http://www.fldoe.org/fefp/pdf/fefpdist.pdf>

<sup>240</sup> Ibid.

2007, Florida school districts received 40.63 percent of education funding from state sources, 50.47 percent from local sources (including the Required Local Effort portion of the FEFP), and 8.90 percent from federal sources.<sup>241</sup> In 2008-2009, the state contribution was \$9,007,286,039 and the Required Local Effort was \$8,267,476,367.<sup>242</sup> Local revenue for education funding was derived almost entirely from property taxes. Every school board in each of Florida's sixty-seven school districts must levy the necessary millage for the Required Local Effort from property taxes. State revenue for education is predominantly raised by the state sales tax.<sup>243</sup> Education expenditures differ between every state and every school district. A credit to the FEFP and equity in education spending, Florida ranked 9<sup>th</sup> in the nation in the difference in per pupil spending levels at the 95th and 5th percentiles. In many states, the spending among districts varies substantially. With a Coefficient of Variation of 0.074, Florida had the second least disparity of all states in spending across school districts.<sup>244</sup> Compared to other states, Florida continually ranks low concerning the amount of money it spends on education. In 2008, Florida spent \$7,539 per pupil, ranking thirty ninth in education spending compared to the U.S. average of \$8,973. Florida spent 3 percent of its resources on education, ranking forty second in the nation. Ranking forty sixth in this category, 3.8 percent of Florida's students were educated in school districts that had a

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<sup>241</sup> Financial Profiles of Florida School Districts, 2006-2007 Financial Data Statistical Report, Florida Department of Education, School Business Services, Office of Funding and Financial Reporting, <http://www.fldoe.org/fefp/pdf/07-08profiles.pdf>

<sup>242</sup> Ibid.

<sup>243</sup> Florida Department of Education, 2010-11 Funding for Florida School Districts, <http://www.fldoe.org/fefp/pdf/fefpdist.pdf>

<sup>244</sup> Education Week's *Quality Counts 2008*. State Highlights Report, Florida

per pupil expenditure meeting or exceeding the national average.<sup>245</sup> Since 2000, the Florida Legislature reduced its portion of K-12 public education spending, shifting more costs to local districts. State support for schools grew at an average rate of 3 percent a year since 2000, while local funding for K-12 education grew at an average of more than 9 percent a year. For every \$1,000 of residents' personal income Florida spent \$33.51, compared with the U.S. average of \$43.34, ranking fiftieth out of fifty states.<sup>246</sup>

In regards to Florida education funding relative to other states, conservatives may declare efficiency and liberals may claim inadequacy; sources of education funding and schooling expenditures are political matters of contention. Considerations of efficiency, inefficiency, standards, achievement, legislative mandates, and adequacy are key elements in education finance debates.

The complex dynamics of state funding formulas and legislative power in conjunction with funding advocates and judicial review provide for an intricate political arena for education funding. Litigation efforts related to education have been substantial in states across the nation. Over the decades, claims have been filed in forty-five states, basing suits on different premises. Lawsuits have generally followed three claims: education as a fundamental right, the equal protection of laws, and the education articles of state constitutions.<sup>247</sup> The state of Florida has encountered a lesser degree of educational funding conflict in comparison to some of its counterparts. The FEFP has been challenged in court, yet has not experienced significant alteration by judicial mandate. In 1996 the adequacy of Florida's funding system was challenged at the

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<sup>245</sup> Ibid.

<sup>246</sup> Ibid.

<sup>247</sup> Thompson, Wood, and Crampton, *Money and Schools*

Supreme Court level in *Coalition for Adequacy and Fairness in School Funding v. Chiles*.<sup>248</sup> The Court found that the plaintiffs had “failed to demonstrate...an appropriate standard for determining ‘adequacy’ that would not present a substantial risk of judicial intrusion into the powers and responsibilities of the legislature.”<sup>249</sup> This type of judgment, citing avoidance of judicial intrusion, has not been categorically corroborated in all similar court cases. In *Coalition v. Chiles*, Justice Overton wrote that “[w]hile ‘adequate’ may be difficult to quantify, certainly a minimum threshold exists below which the funding provided by the legislature would be considered ‘inadequate.’”<sup>250</sup> The language used in Florida legislation asserts that it is its paramount duty to provide an adequate and high-quality education for all students. Adequacy has not been easily determined. At the request of state legislators or private advocacy organizations, numerous consultants have been hired to conduct cost studies in order to determine the amount of school funding necessary to provide an adequate educational opportunity to all students.<sup>251</sup> A study of this kind has not been commissioned in Florida.

Standardized testing in Florida is an essential component of the state’s education accountability plan. The Elementary and Secondary Education Act (ESEA), reauthorized as the No Child Left Behind Act of 2001,<sup>252</sup> is the primary federal legislation affecting education from kindergarten through high school. NCLB is built on four principles: accountability for student achievement, increased school choice, greater

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<sup>248</sup> *Coalition for Advocacy v. Chiles*, 680 So. 2d 400 (Fla. 1996).

<sup>249</sup> *Ibid.*

<sup>250</sup> *Coalition for Advocacy v. Chiles*, 680 So. 2d 400 (Fla. 1996).

<sup>251</sup> Lori Benton, Examination and Application of the Education Adequacy Models and Studies to the State of Florida (PhD diss., University of Florida, 2008).

<sup>252</sup> 20 U.S.C. § 6301

local control and flexibility, and emphasis on research-based educational practice.<sup>253</sup> NCLB is a driving force behind the standards-based education movement in the United States. This movement is focused on establishing high standards and setting measurable goals in efforts to improve student performance. NCLB requires all state legislatures to administer and report annual academic assessment results based on standards established by each state.<sup>254</sup> Poverty is an explicit factor in the federal Adequately Yearly Progress (AYP) accountability measure, part of NCLB.<sup>255</sup> The FCAT, part of Florida's A+ Accountability Plan, is the annual assessment administered to students in grades 3 through 11 in Florida.<sup>256</sup> State standards in reading, mathematics, writing, and science are assessed on this exam. Students take the reading and math sections of the FCAT exam every year (grades 3 through 10), complete the writing section in fourth, eighth, and tenth grades, and complete the science section in fifth, eighth, and eleventh grades. The FCAT, and the grades at which various tests are taken, is subject to review and change on an annual basis. Achievement Levels range from 1 (lowest) to 5 (highest) for all subjects tested. Students scoring at Level 3 on a given exam are considered to have performed "on grade level" for that particular subject.<sup>257</sup> Performance results have a range of significant consequences for students, schools, and districts, including pecuniary implications in various forms.<sup>258</sup>

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<sup>253</sup> Florida Department of Education, NCLB overview, <http://www.ed.gov/nclb/overview/intro/edpicks.jhtml>

<sup>254</sup> 20 U.S.C. § 6301

<sup>255</sup> 20 U.S.C. § 6161

<sup>256</sup> F.S. § 1008.22

<sup>257</sup> Florida Department of Education, FCAT overview, <http://www.fldoe.org/faq/default.asp?Dept=202&ID=660#Q660>

<sup>258</sup> F.S. § 1008.33

Achievement results on the FCAT indicate that students from poverty do not perform as well as their more advantaged peers on the standardized exam. Students in districts with a higher concentration of poverty experienced lower scores than students in districts with lower poverty rates.<sup>259</sup> School grades in Florida, ranging from A to F, are derived exclusively from FCAT performance data. In 1999, 96 percent of high-poverty schools earned school grades of C, D or F. Ninety-five percent of F schools were high-poverty schools, 1 percent (8 schools) were A schools, and 3 percent were B schools.<sup>260</sup> Although the FCAT is not considered a “pass” or “fail” test by the Florida Department of Education, scoring at level 3 or above can be considered as a “passing” score, indicating that a student is on or above grade level.<sup>261</sup> In 2006, the mean percentage of students who passed the FCAT in the five school districts with the highest concentration of poverty was 26.8 percent.<sup>262</sup> The mean percentage of students who passed the FCAT in the five school districts with the lowest concentration of poverty was 50.4 percent.<sup>263</sup> The five lowest performing school districts reported a mean rate of poverty of 26.8 percent, while the five highest performing school districts reported a mean rate of poverty of 14.3 percent. Students in all school districts with poverty rates

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<sup>259</sup> Bruce Baker, David Sciarra, and Danielle Farrie, “Is School Funding Fair A National Report Card,” September 2010, [http://www.schoolfundingfairness.org/National\\_Report\\_Card.pdf](http://www.schoolfundingfairness.org/National_Report_Card.pdf)

<sup>260</sup> Florida Legislature Office of Program Policy Analysis and Government Accountability, Florida Actions Should Improve Student Performance in High-Poverty Schools. Report 00-07 (2000), <http://www.oppage.state.fl.us/reports/pdf/0007rpt.pdf>

<sup>261</sup> Florida Department of Education, FCAT overview, <http://www.fldoe.org/faq/default.asp?Dept=202&ID=660#Q660>

<sup>262</sup> Concentration of Child Poverty in Comparison to Florida Comprehensive Assessment Test (FCAT) Performance, <http://sitemaker.umich.edu/670gispolicybrief/files/670gispolicybriefformat.pdf>

<sup>263</sup> Ibid.

below 14 percent met and generally far exceeded the state average.<sup>264</sup> School recognition funds are issued by the state on the basis of student FCAT performance. In 2007, the twenty-two districts with the lowest poverty levels averaged \$63 per student in bonus money compared to \$31 per student in the twenty-two districts with the highest poverty levels.<sup>265</sup> Children from families with a high socioeconomic status perform notably better than their impoverished peers, resulting in an increase in funding for low poverty districts.

The numbers of students in Florida who qualify for the FSLP constitute a substantial portion of the overall enrollment. In 1999, 43.6 percent of Florida's students were eligible for FRPL, rising to 46.0 percent in 2005.<sup>266</sup> There were 1,214,732 (45.8 percent) children who qualified for FRPL in 2008, and in 2009, 49.57 percent of students qualified.<sup>267</sup> As the fourth most-populous state, Florida's free and reduced-price lunch figures are comparable with the three most populous states, Texas (48.76 percent), California (51.67 percent), and New York (44.74 percent).<sup>268</sup> Eligibility for FRPL in Florida's schools has continued on an upward trend. The ten-year numerical increase during the last ten years amounts to 388,235 students (1,092,525 in 2001-02 vs. 1,480,760 in 2010-11), a cumulative increase of 35.54 percent in ten years. Fifty-two districts reported 50 percent or more of their enrollment eligible for FRPL in 2010-11, as

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<sup>264</sup> Ibid.

<sup>265</sup> Charles J. Morris and the Okaloosa Citizens Alliance, <http://www.oca1787.org/documents/flrecognition.pdf>

<sup>266</sup> Florida Department of Education, Education Information and Accountability Services, 2008 Series 2009-03F, [www.fldoe.org/eias/eiaspubs/word/frplunch.rtf](http://www.fldoe.org/eias/eiaspubs/word/frplunch.rtf)

<sup>267</sup> Ibid.

<sup>268</sup> Florida Department of Education, Education Information and Accountability Services, February 2011, Series 2011-19D, <http://www.fldoe.org/eias/eiaspubs/>

compared to only twenty-nine districts ten years prior.<sup>269</sup> In 2011, St. Johns County had the lowest percentage of students eligible for free/reduced-price lunch (22.06 percent), and Gadsden County had the highest percentage (81.70 percent).<sup>270</sup> Large numbers of low-income students create a burden for educators and policymakers in Florida as they work to compensate for poverty issues.

### **Summary**

This study reviewed poverty and quantitative measurements of poverty, focusing on FRPL as the preferred measure of poverty in education contexts in the United States. An investigation concerning the associations between poverty and student achievement, and a review of the federal role in addressing poverty concerns in schools were also conducted. This study analyzed education funding, the relationship between money and achievement, and education finance research. An examination of the disparities in state education funding and compensatory practices was significant. Researching adequacy and accountability in education were also of central importance. This study focused on Florida and its education funding systems. The methodology utilized for this study was discussed in Chapter 3.

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<sup>269</sup> Ibid.

<sup>270</sup> Ibid.

Table 2-1. 2011 Health and Human Services Poverty Guidelines

Persons in Family or Household	48 Contiguous States and D.C.	Alaska	Hawaii
1	\$10,890	\$13,000	\$12,540
2	14,710	18,380	16,930
3	18,530	23,160	21,320
4	22,350	27,940	25,710
5	26,170	32,720	30,100
6	29,990	37,500	34,490
7	33,810	42,280	38,880
8	37,630	47,060	43,270
For each additional person, add	3,820	4,780	4,390

Source: *Federal Register*, Vol. 76, No. 13, January 20, 2011, pp. 3637–3638

Table 2-2. U.S. Children Living in Poor and Low-Income Families, 2009

Age	Poor	Low-Income
Under 3	3.1 million	5.9 million
Under 6	6.1 million	11.7 million
6 to 11	5 million	10.3 million
12 to 17	4.2 million	9.3 million
Under 18	15.3 million	31.3 million

Source: Basic Facts about Low-Income Children 2009, National Center for Children in Poverty, <http://www.nccp.org/topics/childpoverty.html>

Table 2-3. U.S. NAEP Scores

Students FRPL eligibility	2007 Grade 4 Reading	2007 Grade 8 Reading	2007 Grade 4 Math	2007 Grade 8 Math
Less than 10 percent	240	280	256	300
11–25 percent	231	272	248	292
26–50 percent	223	263	242	282
51–75 percent	212	253	234	271
More than 75 percent	200	241	222	259

  

Student FRPL Eligibility	2007 Grade 8 Writing	2007 Grade 12 Writing	2005 Grade 4 Science	2005 Grade 8 Science
Eligible	141	138	135	130
Not Eligible	164	157	162	159

Source: National Center for Education Statistics, The Nation's Report Card (Washington, DC: U.S. Department of Education), <http://nces.ed.gov/nationsreportcard/>

Table 2-4. U.S. TIMSS Scores, 2003

Students in school eligible for FRPL	Grade 4 Math	Grade 4 Science	Grade 8 Math	Grade 8 Science
10 percent or less	567	579	547	571
11–25 percent	543	567	531	554
26–50 percent	533	551	505	529
51–75 percent	500	519	480	504
More than 75 percent	471	480	444	461
U.S. Average	518	536	504	527
International Average	495	489	466	473

Source: Highlights From the Third International Mathematics and Science Study (TIMSS) 2003, <http://nces.ed.gov/pubs2005/2005005.pdf>

Table 2-5. U.S. TIMSS Scores, 2007

Students in school eligible for FRPL	Grade 4 Math	Grade 4 Science	Grade 8 Math	Grade 8 Science
10 percent or less	583	590	557	572
11–25 percent	553	567	543	559
26–50 percent	537	550	514	528
51–75 percent	510	520	482	495
More than 75 percent	479	477	465	466
U.S. Average	529	539	508	520
International Average	500	500	500	500

Source: Highlights from the Trends in International Mathematics and Science Study (TIMSS) 2007. <http://nces.ed.gov/pubs2009/2009001.pdf>

Table 2-6. State Education Finance and Poverty Figures

State	2005-2006 Per Pupil Expenditure Public Elementary and Secondary	2006 Percentage of Revenue Public Elementary and Secondary	2005-2007 Average Poverty Rate Percentage	2005-2006 Students Eligible for Free/Reduce Price Lunch	2008-2009 Students Eligible for Free/Reduce Price Lunch
Alabama	7,683	55.9	15.2	51.7%	52.2%
Alaska	11,476	58.7	8.8	31.4%	34.1%
Arizona	6,515	48.4	14.7	45.0%	47.4%
Arkansas	8,030	56.8	15.1	52.9%	57.1%
California	8,301	59.3	12.7	47.6%	51.7%
Colorado	8,166	42.5	10.3	33.1%	35.4%
Connecticut	13,072	38.5	8.7	26.5%	29.9%
Delaware	11,621	63.2	9.3	36.1%	39.1%
Dist.	13,752	NA	19.2	53.4%	67.1%
Florida	7,812	39.5	11.7	45.8%	49.6%
Georgia	8,595	44.4	13.5	49.8%	53.0%
Hawaii	9,876	89.9	8.4	41.0%	41.7%
Idaho	6,469	56.2	9.8	37.8%	39.7%
Illinois	9,113	29.6	10.7	37.2%	39.3%
Indiana	8,929	49.1	11.7	36.1%	41.8%
Iowa	8,355	45.6	10.2	31.9%	34.0%
Kansas	8,644	54.6	12.3	38.7%	42.9%
Kentucky	7,668	57.3	15.7	49.5%	51.6%

Table 2-6. Continued

Louisiana	8,486	43.4	17.1	61.2%	64.9%
Maine	10,841	42.4	11.2	33.8%	37.0%
Maryland	10,909	39.2	9	31.6%	34.7%
Massachusetts	12,564	47	11.1	28.2%	30.7%
Michigan	9,577	59.3	12	35.0%	41.1%
Minnesota	9,159	71.2	8.5	30.3%	32.4%
Mississippi	7,173	51	21.1	69.5%	68.3%
Missouri	8,273	33.5	11.9	39.1%	38.7%
Montana	8,626	46.2	13.4	34.5%	36.7%
Nebraska	9,324	31.9	9.9	34.7%	38.4%
Nevada	7,177	25.9	10	41.3%	39.0%
New	10,396	39.2	5.6	17.1%	20.5%
New Jersey	14,954	42.3	8.1	26.8%	30.0%
New Mexico	8,354	71.2	16.3	55.7%	61.4%
New York	14,615	42.5	14.4	44.8%	44.7%
North	7,396	62.5	14.1	42.6%	33.2%
North Dakota	8,728	36.2	10.6	29.6%	31.6%
Ohio	9,692	43.7	12.4	32.5%	36.4%
Oklahoma	6,941	53.3	14.7	54.5%	56.1%
Oregon	8,645	50.4	12.2	41.8%	44.5%
Pennsylvania	10,723	35.4	11	31.4%	33.3%
Rhode Island	12,609	41.1	10.7	34.9%	39.3%
South	8,120	45.2	13.4	51.5%	52.5%
South Dakota	7,775	33	10.7	32.0%	34.7%
Tennessee	7,004	42.5	14.8	47.1%	49.9%
Texas	7,480	33.8	16.4	48.2%	48.8%
Utah	5,464	55.1	9.4	32.3%	31.2%
Vermont	12,805	85.6	8.4	26.4%	28.9%
Virginia	9,445	39.6	8.8	31.1%	33.0%
Washington	7,984	60.8	9.4	36.5%	38.2%
West Virginia	9,440	59.8	15.2	49.1%	50.0%
Wisconsin	9,993	52.3	10.4	29.3%	33.5%
Wyoming	11,437	44.1	10.5	31.6%	31.0%

Source: National Center for Education Statistics, U.S. Census Bureau, and Florida Department of Education, Expenditure, Revenue and FRPL data from National Center for Education Statistics, Common Core of Data, <http://nces.ed.gov/ccd/bat/>. Poverty rate data from U.S. Bureau of the Census, Poverty in the United States: 2002, Series P60-222; Income, Poverty, and Health Insurance Coverage in the United States, 2003, Series P60-226; Income, Poverty, and Health Insurance Coverage in the United States, 2004, Series P60-229; Income, Poverty, and Health Insurance Coverage in the United States, 2005, Series P60-231; Income, Poverty, and Health Insurance Coverage in the United States, 2006, Series P60-233; and Income, Poverty, and Health Insurance Coverage in the United States, 2007, Series P60-235. Florida Department of Education, Education Information and Accountability Services, February 2011, Series 2011-19D, <http://www.fldoe.org/eias/eiaspubs/>

Table 2-7. Expenditures Per Pupil for Public Elementary and Secondary Education  
(Constant 2007-2008 dollars)

Year	Florida	U.S.
1998	\$ 8093	\$ 8738
1999	8290	9023
2000	7982	9246
2001	8004	9556
2002	7935	9812
2003	8047	10009
2004	8269	10125
2005	8538	10288
2006	8911	10433
2007	9391	10720

Source: National Center for Education Statistics, Expenditure per pupil in fall enrollment in public elementary and secondary schools, by state or jurisdiction through 2006-07, [http://nces.ed.gov/programs/digest/d09/tables/dt09\\_185.asp](http://nces.ed.gov/programs/digest/d09/tables/dt09_185.asp)

## CHAPTER 3 METHODOLOGY

The purposes of this study were to analyze the relationship between poverty and student achievement in the state of Florida, and to determine the financial implications of theoretical poverty weights activated in the FEFP. In this research, poverty was measured in terms of eligibility percentages and students qualifying for the FRPL program, and student achievement was denoted by FCAT results. Descriptive and correlation statistics were used to quantify the association of these data. Examinations of compensatory elements of state education finance programs were utilized in conjunction with recent adequacy studies in order to construe theoretical poverty weights that could be exercised in Florida. These theoretical fiscal adjustments were applied to the education finance program in Florida in order to deduce the financial consequences. The study addressed the following research questions:

1. What were the relationships between FRPL percentages and FCAT achievement data in Florida schools?
2. What were the relationships between FRPL percentages and FCAT achievement data in Florida elementary schools?
3. What were the fiscal implications of initiating a theoretical poverty weight into the FEFP?
4. What were the fiscal implications of employing compensatory practices of a contemporary adequacy study in the FEFP?

### **Data**

There were sixty-seven counties in the state of Florida, each constituting a separate public school district. Within every school district, a percentage of students were eligible to receive free or reduced-price lunch through the federal NSLP.<sup>271</sup>

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<sup>271</sup> U.S. Department of Agriculture, Food and Nutrition Service, National School Lunch Program. <http://www.fns.usda.gov/cnd/lunch/aboutlunch/NSLPFactSheet.pdf>

Student eligibility for this program was determined by the federal poverty guidelines. For this study, these data were used as the measure of poverty. FRPL data from school districts were annually reported to the Florida Department of Education (FDOE), and were organized by Education Information and Accountability Services (EIAS) in the FDOE.<sup>272</sup> Past reports that were not publicly published were obtained from EIAS in order to assemble longitudinal FRPL data for each school district. The FRPL percentages for each Florida district were compiled from 2004 to 2009, matching the years of available relevant FCAT data.<sup>273</sup> Additional FRPL information was utilized for more detailed analysis in the year 2009. FRPL has often been underreported at the middle school and high school levels due to student perception that it is a stigma to be considered poor by their peers. FRPL data reporting has been the most accurate at the elementary school level, rather than middle and high school levels.<sup>274</sup> In this study, disaggregated FRPL data regarding students in grades three, four, and five, in all Florida school districts were utilized. The FDOE did not calculate and report FRPL eligibility in each district for individual grade levels in terms of percentages, yet individual grade level FRPL eligibility total numbers and individual grade level total student membership numbers were available.<sup>275</sup> FRPL percentages for each grade level (third, fourth, and fifth) for each district were calculated by dividing the number of

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<sup>272</sup> Florida Department of Education, Education Information and Accountability Services, <http://www.fldoe.org/eias/eiaspubs/default.asp>

<sup>273</sup> Table 3.2.

<sup>274</sup> Donka Mirtcheva and Lisa Powell, "Participation in the National School Lunch Program: Importance of School-level and Neighborhood Contextual Factors," *Journal of School Health* 79, no. 10 (2009): 485-94; Kevin Welner, "Non-Evidence about Tracking: Critiquing the New Report from the Fordham Institute," *Teachers College Record*, December (2009); Carol Pogash, "Free Lunch Isn't Cool So Some Students Go Hungry," *New York Times*, March 1, 2008.

<sup>275</sup> Table 3-2.

students eligible for FRPL in each grade level by the total membership of each grade level. These calculations were completed for each Florida school district.<sup>276</sup>

The FCAT was Florida's standardized assessment designed to measure student achievement.<sup>277</sup> FCAT scores were the measure of student achievement utilized in this study. The FDOE upheld minimum requirements for FCAT administration, and requirements were consistent for all Florida school districts. FCAT Reading tests were administered to students in grades 3-10, FCAT Math tests were administered to students in grades 3-10, and FCAT Science tests were administered to fifth, eighth, and tenth grade students.

Very few students were exempt from taking the FCAT. In 2009, 14 percent of all public school student membership in Florida was served under IDEA.<sup>278</sup> Based on the student Individual Education Plans (IEP), only 1 percent of these students with significant cognitive disabilities were exempt from FCAT testing. A relatively small number of English Language Learners (ELL) were also exempt. If an ELL had been receiving services in an English for Speakers of Other Languages (ESOL) program operated in accordance with an approved district Limited English Proficient (LEP) plan for one year or less, then the ELL was exempt from the FCAT Writing and Reading administrations.<sup>279</sup> A majority of the student's LEP committee must have determined that this exemption was appropriate.

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<sup>276</sup> Ibid.

<sup>277</sup> § 1008.22, F.S.

<sup>278</sup> Florida Department of Education , Bureau of Exceptional Education and Student Services, <http://www.fldoe.org/ease/pdf/b-621.pdf>

<sup>279</sup> Florida Department of Education , Bureau of Exceptional Education and Student Services, <http://www.fldoe.org/ease/pdf/b-621.pdf>

Student FCAT scores in 2009 ranged from one to five, with a score of 1 being the lowest and 5 being the highest. A score of 3 or higher was considered to be proficient on Reading, Math, and Science tests. “Students scoring a level 3 are considered proficient in grade level skills. Students scoring levels 4 and 5 are considered to have advanced skills.”<sup>280</sup> In this study, a score of 3 or higher was demonstrative of adequate student achievement.

The FDOE reported standardized test scores in various forms and categories. In this study, the percentages of students scoring at level 3 or higher on FCAT Reading in each Florida school district were utilized. The percentages of students scoring at level 3 or higher on FCAT Math in each district were also utilized. These data were assembled from the FDOE for each year from 2004 to 2009.<sup>281</sup> See Table 3-2. Although FCAT administration was taking place prior to 2004, testing policies and data collection methods differed. For the purpose of consistency, years 2004 to 2009 testing results were analyzed in this study. Additional analysis was conducted utilizing 2009 FCAT scores from elementary students. In this study, 2009 third grade FCAT Reading and third grade FCAT Math scores from all districts were utilized, 2009 fourth grade FCAT Reading and FCAT Math scores from all districts were utilized, and 2009 fifth grade FCAT Reading and FCAT Math scores from all districts were utilized. This study focused on percentages of students scoring at level 3 or higher on FCAT exams in correlation to FRPL percentages in each school district. These 2009 achievement data

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<sup>280</sup> Guide to FCAT and FCAT 2.0, Accommodations for Students with Disabilities  
<http://www.fldoe.org/ese/pdf/fcatteam.pdf>

<sup>281</sup> Table 3-2.

and federal lunch program eligibility data were fundamental in quantifying the relationship between poverty and student achievement in Florida elementary schools.

### **Methodology A**

Descriptive and correlation statistics were employed to analyze FRPL data and FCAT data in order to study the relationship of these variables. The descriptive statistics depicted central tendencies of the variables, and the correlation statistics evidenced relationships between poverty and student achievement. The mean, median, mode, and range of FRPL percentages for Florida school districts were examined for years 2004 to 2009. The mean, median, mode, and range of FCAT Reading scores for Florida school districts, and the mean, median, mode, and range of FCAT Math scores for Florida school districts were examined for years 2004 to 2009. Descriptive statistics focused on FRPL percentages as well as student FCAT scores of level 3 or higher, and were utilized to reveal central tendencies.<sup>282</sup>

Correlation is the measure of relation between two or more variables.<sup>283</sup> The variables in this study included FCAT scores (a student achievement indicator), and FRPL percentages (a poverty indicator). Linear correlations, Pearson  $r$ , were calculated to determine the extent to which the two variables were proportional to each other.<sup>284</sup> The formula that was applied to calculate correlation values was the covariance of the two variables divided by the product of the standard deviations. A standard formula was used to calculate Pearson  $r$ , where  $r$  = correlation coefficient,  $N$  = number of value in

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<sup>282</sup> Statsoft, Electronic Statistics Textbook, <http://www.statsoft.com/textbook/basic-statistics/>

<sup>283</sup> Statsoft, Electronic Statistics Textbook, <http://www.statsoft.com/textbook/basic-statistics/#Correlations>

<sup>284</sup> Statsoft, Electronic Statistics Textbook, <http://www.statsoft.com/textbook/basic-statistics/#Correlations>

each data set,  $\sum xy$  = sum of the products of paired scores,  $\sum x$  = sum of x scores,  $\sum y$  = sum of y scores,  $\sum x^2$  = sum of squared x scores, and  $\sum y^2$  = sum of squared y scores.<sup>285</sup>

In this study, there were sixty-seven school districts reporting FRPL data and FCAT scores, and in this context, a sample size of sixty-seven districts (representing 2,635,276 students) provided acceptable levels of correlation significance. Higher numbers associated with one variable were, in general, paired with lower numbers associated with the second variable, indicating a negative relationship.<sup>286</sup> The FRPL percentages for all districts were correlated with the FCAT Reading scores for all districts. The FRPL percentages were also correlated with the FCAT Math scores for all districts, resulting in two correlation coefficients for each school district for the years 2004 to 2009.

Multiple additional correlation coefficients were calculated for the year 2009. FRPL percentages in grades 3, 4, and 5 were correlated with FCAT Reading and Math scores of level 3 or higher for students in grades 3, 4, and 5. FRPL percentages in grades 3, 4, and 5 were correlated with the FCAT Reading and Math scores of level 3 or higher for third, fourth, and fifth grade FRPL students in the district. FRPL percentages in grades 3, 4, and 5 were correlated with FCAT Reading and Math scores of level 3 or higher for third, fourth, and fifth grade students not eligible for FRPL. These specific correlations quantified relationships between poverty and student achievement in Florida elementary schools.

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<sup>285</sup> Figure 3-1. Source: Statistics Solutions, <http://www.statisticssolutions.com/methods-chapter/statistical-tests/correlation-pearson-kendall-spearman/>

<sup>286</sup> Statsoft, Electronic Statistics Textbook, <http://www.statsoft.com/textbook/basic-statistics/#Correlations>

## Compensatory Education Practices

In this study, the term “compensatory,” as it applied to state education policies, was defined as a provision of supplemental resources based on state utilization of FRPL eligibility or another measurable poverty indicator. In some states, “compensatory” may have included provision of supplemental resources based on other factors, including, but not limited to, students with disabilities, ELL, pregnant students, students from a family household with one parent, level of education of guardians, and students performing below desired proficiency levels on standardized exams.<sup>287</sup> There have been perpetual changes occurring in state finance systems, predominantly as a result of political forces and education litigation. The lack of accessibility of clear, comprehensive, and current state finance formula information, and the changes that occur in state finance systems were considered in this study. In a 2009 report of education finance program descriptions, Verstegen stated,

It has been over 10 years since information has been available for all 50 states related to state-financing policies and programs for public elementary and secondary education. The most recent 50-state finance survey was conducted by the National Center for Education Statistics in 1997-98. Prior to that release, the Education Commission of the States disseminated a state-finance survey in 1990.<sup>288</sup>

This Verstegen study included at-risk factors other than poverty (i.e. low standardized test scores and student drop-out rates) in its analysis of the compensatory elements in state programs. The analysis in this dissertation focused exclusively on poverty and did not include other at-risk factors.

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<sup>287</sup> Indiana Complexity Index, § 20-43-5, I.C.

<sup>288</sup> Deborah A. Verstegen and Teresa S. Jordan. “A Fifty-State Survey of School Finance Policies And Programs: An Overview,” *Journal of Education Finance* 34, no. 3 (2009): 213-225. Overview,” *Journal of Education Finance* 34, no. 3 (2009): 213-225.

In this study, research concerning state education finance policies was utilized to review state compensatory practices and poverty weights.<sup>289</sup> Information obtained from individual State Departments of Education websites concerning education finance systems was also utilized to determine recent compensatory practices and poverty weights. In addition, pertinent results from recent state education adequacy studies were utilized to conduct this study.<sup>290</sup> Review of state formulas indicated that compensatory education practices fell into three basic categories: 1) legislatures that actuated a poverty weight directly into the foundation formula; 2) legislatures that proffered supplemental resources through funding schemes that did not involve an explicit poverty weight in the foundation formula; and 3) legislatures that made no compensatory provisions for poor students.<sup>291</sup> See Table 3-1. There were eleven state legislatures that operationalized an explicit poverty weight into the foundation formula, twenty-four state legislatures allocated additional resources to school districts based on student poverty data through methods other than the foundation formula, and fifteen state legislatures did not provide any compensatory resources for students in poverty.<sup>292</sup>

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<sup>289</sup> Deborah A. Verstegen and Teresa S. Jordan. "A Fifty-State Survey of School Finance Policies And Programs: An Overview," *Journal of Education Finance* 34, no. 3 (2009): 213-225; Kevin Carey, "State Poverty-Based Education Funding: A Survey of Current Programs and Options for Improvement," 2002, Center on Budget and Policy Priorities, Washington DC; James W. Guthrie and Gary Peevely, "King Cotton's Lasting Legacy of Poverty and Southern Region Contemporary Conditions," *Peabody Journal of Education* 85, no. 1 (2010): 4-15; State Education Finance and Governance Profiles from Peabody Journal of Education (2010), were utilized for Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

<sup>290</sup> Mike Dishman and Traci Reddish, "Educational Adequacy Litigation in the American South: 1973-2009," *Peabody Journal of Education* 85, no. 1 (2010): 16-31; Lori Benton, Examination and Application of the Education Adequacy Models and Studies to the State of Florida (PhD diss., University of Florida, 2008).

<sup>291</sup> Table 3-1.

<sup>292</sup> Ibid.

The poverty weights initiated in the foundation formulas of various states ranged from 0.05 to .25, providing supplements to base level funding.<sup>293</sup> The average poverty weight utilized in foundation formulas was 0.193. In states not utilizing poverty weights in foundation formulas, the method for determining additional allowances and compensatory grants were unique to each individual state. Compensatory resources in these states took various forms, including provisions of additional teacher allocations and allowances for programmatic resources based on multifarious formulas. In Arkansas, Colorado, Kansas, Minnesota, and New Hampshire, the additional funding was weighted progressively based on concentration of poverty. When poverty concentration rates reached specific levels, associated weighting increased. In Colorado, Kansas, Kentucky, Mississippi, and Nebraska, supplementary funds were allocated for students qualifying for Free Lunch, but not for Reduced Lunch. In Vermont, Connecticut, and Oregon, measures other than FRPL were utilized to distribute poverty-based supplements. Vermont utilized Food Stamp qualifications, Connecticut utilized Temporary Family Assistance eligibility, and Oregon utilized Census data. The systems and policies legislatures employ have a significant impact on levels of funding.

Statutory poverty weights provide some indication of the relative level of commitment to poverty-based funding. There are, however, numerous factors that can affect the amount of money those weights ultimately generate for low-income children. One factor is the poverty measure being used. For example, a funding program that applies a 25 percent poverty weight to children eligible for the free and reduced-price lunch program, below 185 percent of the poverty line, will generate substantially more funding than a program that applies a 25 percent poverty weight only to

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<sup>293</sup> Ibid.

children eligible for the free lunch program, below 130 percent of the poverty line.<sup>294</sup>

Legislatures have utilized different measures and weights in funding programs. “As noted, the real value of a statutory poverty weight is significantly affected by both the state’s definition of poverty and the relative size of the foundation grant to which the weight is applied.”<sup>295</sup> State foundation funding levels varied in terms of size, relative to overall education spending. This has affected the true impact of poverty weights that are activated in foundation formulas.

### **Methodology B**

Compensatory education program data were operationalized as a theoretical poverty weight activated in the FEFP. In this study, compensatory policies of the fifty United States were reviewed. There were state legislatures that calculated a poverty weight explicitly into the foundation formula.<sup>296</sup> The average poverty weight (0.193) utilized by these legislatures was activated as a theoretical poverty weight in the 2010-2011 FEFP. This theoretical weight applied to the percentage of all Florida public school students in all grades (PK-12) who qualified for the federal FRPL program in 2010.

The FEFP determined funding quantities by multiplying the number of full-time equivalent (FTE) students in each of the funded education programs by cost factors to obtain Weighted FTE (WFTE) students. WFTE students were then multiplied by a Base Student Allocation and by a District Cost Differential in the major calculation to

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<sup>294</sup> Kevin Carey, “State Poverty-Based Education Funding: A Survey of Current Programs and Options for Improvement,” Center on Budget and Policy Priorities, Washington DC (2002).

<sup>295</sup> Ibid.

<sup>296</sup> Table 3-1.

determine the Base Funding from state and local FEFP funds.<sup>297</sup> “Program cost factors served to assure that each program received its equitable share of funds in relation to its relative cost per student.”<sup>298</sup> Cost factors in the FEFP were weights for specific students or programs. In 2010, the added weights for Exceptional Student Education, English for Speakers of Other Languages, and Career Education programs ranged from .031 to 3.935 in the FEFP.<sup>299</sup> There was no poverty-based weight that established a WFTE for low-income students included in the FEFP. The poverty weights calculated in the foundation formulas of other states ranged from 0.05 to .25, providing supplements to base level funding for students in poverty. The average poverty weight utilized in foundation formulas was 0.193. In this study, this average poverty weight was applied to the FEFP in the same manner as the other program cost factors in order to establish a WFTE for low-income students. This poverty-based WFTE was added to the WFTE associated with the other program cost factors. The total WFTE was multiplied by the Base Student Allocation, and was multiplied by the District Cost Differential, in order to determine Base Funding. Other supplements that were added to Base Funding included DJJ Supplement, Declining Enrollment Supplement, Sparsity Supplement, Discretionary Contribution, 0.748 Mills Discretionary Compression, 0.25 Additional Mills Discretionary Compression, Safe Schools, Reading Program, Supplemental Academic Instruction, ESE Guaranteed Allocation, Merit Award Program allocation, Instructional Materials, Teacher Lead, Student Transportation, State Fiscal Stabilization Funds Allocation, and

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<sup>297</sup> Table 3-1.

<sup>298</sup> The Funding for Florida School Districts Statistical Report, 2010-1011, <http://www.fldoe.org/fefp/pdf/fefpdist.pdf>

<sup>299</sup> Ibid.

Minimum Guarantee. These additions were included individually based on district characteristics and necessary qualifications for various supplements. Supplement quantities varied based on district profiles. The supplements added to the Base Funding provided the Gross State and Local FEFP. Required Local Effort Taxes were subtracted to determine the Net State FEFP. Lottery and School Recognition and Class Size reduction Funding were added to determine the Total State Funding. The financial implications of integrating the theoretical poverty weight (0.193) were calculated leaving all other features of the FEFP the same.

### **Methodology C**

The true cost of an adequate education is a problematical number to conclude. There is no single standard that applies across states as an absolute cost of an adequate education, yet numerous methods have been utilized by various state legislatures and advocacy groups in efforts to calculate the cost of an adequate education.<sup>300</sup> “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 has been required as a result of litigation.”<sup>301</sup> There are four approaches that have been utilized to conduct adequacy studies, including the Professional Judgment approach, the Evidence-Based approach, the Successful Schools approach, and the Statistical Analysis approach.<sup>302</sup> Some studies

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<sup>300</sup> Bruce D. Baker, “The Emerging Shape of Educational Adequacy: From Theoretical Assumptions to Empirical Evidence,” *Journal of Educational Finance* 30, no. 3 (2005): 259.

<sup>301</sup> 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,” 1-2.

<sup>302</sup> R. Craig Wood and Anthony R. Rolle, “Improving “Adequacy” Concepts in Education Finance: A Heuristic Examination of the Professional Judgment Research Protocol,” *Educational Considerations* 35, no. 4 (2007): 51-55.

have utilized multiple approaches in the same analysis in efforts to increase the validity of the results. Very few adequacy studies have completed a comprehensive design that includes all four methodologies. Contemporary studies conducted in 2007 for Rhode Island and Montana by R.C. Wood and Associates utilized all four methodologies, and were considered for this study.<sup>303</sup> Compensatory practices of the Rhode Island study were utilized in this dissertation rather than the compensatory recommendations described in the Montana study because Rhode Island was more similar to Florida in regards to population density and relevant school demographics.<sup>304</sup> In 2010, Rhode Island had approximately one thousand eighteen persons per square mile, Montana had approximately seven persons per square mile, and Florida had three hundred fifty one persons per square mile.<sup>305</sup>

The compensatory practices indicated in the Rhode Island study were applied as theoretical compensatory inclusions to the 2010-2011 FEFP. The Rhode Island study indicated that the results from all four approaches could be utilized by legislators in making policy decisions, and all results provided valuable information, but the results from Successful Schools approach could be the most useful.

Thus, for the state of Rhode Island, given the present status and validity of education finance research it is recommended that the successful schools model and/or the cost function approach would be the most fruitful for the state of Rhode Island. Of these two models, the successful schools model and the cost function program, if one model were chosen, the successful

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<sup>303</sup> R.C. Wood and Associates, State of Rhode Island Education Adequacy Study, Final Report (2007).

<sup>304</sup> In 2009, Florida's population density was 296.4 per square mile, Rhode Island's population density was 1,003.2, and Montana's population density was 6.2. Source: U.S. Census Bureau.

<sup>305</sup> Data calculated from NCES Common Core Data and U.S. Census Bureau, <http://quickfacts.census.gov>

schools model, if carefully designed and crafted, would have the greatest probability of yielding the most useful model.<sup>306</sup>

While other approaches accounted for poverty in various ways, the Successful Schools approach in the Rhode Island study used two poverty different weights, similar to explicit poverty weights in other states, in its recommendations. In order to account for differences in student demographics and poverty factors, the researchers utilized “discount rates” as the weighting mechanism.

The first discount rate assumes that those students eligible for the federal free and reduced lunch program and English language learners cost 25 percent more to educate, resulting in a 25 percent discount rate for free and reduced lunch students. This percentage for free and reduced lunch students was based on an analysis of additional funding provided by states across the country. While it must be noted that variation existed among states in the additional percentage of funding provided for free and reduced lunch students, and some states also took into account concentration of poverty, the 25 percent additional funding was the most commonly used, was close to the mean, and is seen as a “standard of practice” in the field of education finance.<sup>307</sup>

The discount rate of 25 percent was applied as an explicit poverty weight to the FEFP in the same manner that the average poverty weight was applied in Methodology B in order to determine the funding implications.

For the second discount rate, we assumed that students eligible for the free and reduced lunch program and English language learners cost 40 percent more to educate. This percentage was based on a variety of research that proposes that the current standard of practice (i.e. 25 percent) underestimates the additional costs for such students.<sup>308</sup>

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<sup>306</sup> R.C. Wood and Associates, State of Rhode Island Education Adequacy Study, Final Report (2007).

<sup>307</sup> Ibid.

<sup>308</sup> Ibid.

The discount rate of 40 percent was applied as an explicit poverty weight to the FEFP in the same manner that the average poverty weight was applied in Methodology B in order to determine the funding implications.

In the Rhode Island study, the discount rate of 25 percent was also utilized in the Statistical Analysis approach. The Professional Judgment approach methodology focused on students in the category of “Insufficient Progress” rather than an explicit poverty measure, and in the Evidence-Based approach, “Drop-out Prevention” was utilized for analysis. The compensatory practices demonstrated in the Successful Schools approach and Statistical Analysis approach explicitly targeted poverty, rather than other at-risk factors, and were utilized for this study.

### **Summary**

This chapter presented the design utilized for this research study. Data concerning the variables of poverty and student achievement were described. Methodologies of correlating these data in multiple contexts were described. Review of State Department education finance policies was discussed, and compensatory practices examined. The methodology for applying a theoretical poverty weight of 0.193, based on the average poverty weight directly active in other foundation formulas, as a compensatory element to Florida’s education finance program was described. The methodologies for applying poverty weights of 0.25 and 0.40 respectively, based on practices in a contemporary adequacy study, as compensatory elements to Florida’s education finance program were described. Results were reported in chapter 4.

Table 3-1. Poverty-based Funding 2011

State	Additional Funding Based on Poverty	Foundation Formula Explicit Weight
Alabama	Yes	
Alaska	No	
Arizona	No	
Arkansas	Yes	
California	Yes	
Colorado	Yes	
Connecticut	Yes	0.25
Delaware	No	
Florida	No	
Georgia	No	
Hawaii	Yes	0.1
Idaho	No	
Illinois	Yes	
Indiana	Yes	
Iowa	Yes	
Kansas	Yes	
Kentucky	Yes	0.15
Louisiana	Yes	0.22
Maine	Yes	0.15
Maryland	Yes	
Massachusetts	Yes	
Michigan	Yes	
Minnesota	Yes	
Mississippi	Yes	0.05
Missouri	Yes	0.25
Montana	No	
Nebraska	Yes	
Nevada	No	
New Hampshire	Yes	
New Jersey	Yes	
New Mexico	No	
New York	Yes	
North Carolina	Yes	
North Dakota	No	
Ohio	Yes	
Oklahoma	Yes	0.25

Table 3-1. Continued

Oregon	Yes	0.25
Pennsylvania	Yes	
Rhode Island	No	
South Carolina	Yes	
South Dakota	No	
Tennessee	Yes	
Texas	Yes	0.2
Utah	No	
Vermont	Yes	0.25
Virginia	Yes	
Washington	Yes	
West Virginia	No	
Wisconsin	Yes	
Wyoming	No	

Source: Deborah A. Verstegen and Teresa S. Jordan. "A Fifty-State Survey of School Finance Policies And Programs: An Overview," *Journal of Education Finance* 34, no. 3 (2009): 213-225; Kevin Carey, "State Poverty-Based Education Funding: A Survey of Current Programs and Options for Improvement," 2002, Center on Budget and Policy Priorities, Washington DC; James W. Guthrie and Gary Peevely, "King Cotton's Lasting Legacy of Poverty and Southern Region Contemporary Conditions," *Peabody Journal of Education* 85, no. 1 (2010): 4-15; State Education Finance and Governance Profiles from Peabody Journal of Education (2010), were utilized for Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

Table 3-2. Florida FRPL and FCAT Data, 2003-2009

2003-4 Florida District	Total Membership	Total Eligible	Percent Eligible	FCAT 3+ % Reading	FCAT 3+% Math
ALACHUA	29,422	13,787	18.5	63	66
BAKER	4,605	1,830	25.4	54	61
BAY	26,693	12,265	26.3	66	68
BRADFORD	3,897	2,375	28.4	56	56
BREVARD	73,856	19,409	29.1	72	78
BROWARD	272,785	107,765	30.5	58	66
CALHOUN	2,224	1,112	31.8	67	74
CHARLOTTE	18,273	5,994	32.1	65	73
CITRUS	15,510	6,615	32.7	63	65
CLAY	31,368	7,954	32.8	65	71
COLLIER	40,144	20,149	34.2	58	65

Table 3-2. Continued

COLUMBIA	9,780	5,296	34.3	58	55
DADE	371,773	233,200	35.2	49	54
DESOTO	4,975	3,076	36.4	50	55
DIXIE	2,169	1,399	37.9	52	50
DUVAL	129,545	63,723	38.6	55	56
ESCAMBIA	43,981	24,910	39.3	56	56
FLAGLER	8,562	2,925	39.5	65	67
FRANKLIN	1,347	841	39.7	49	51
GADSDEN	6,946	5,237	39.8	34	37
GILCHRIST	2,833	1,516	40.2	67	78
GLADES	1,012	676	40.6	50	44
GULF	2,150	1,013	41.7	63	66
HAMILTON	2,057	1,485	42.6	40	41
HARDEE	5,221	3,653	43.9	54	63
HENDRY	7,658	5,200	45	50	56
HERNANDO	19,587	8,606	45.9	58	60
HIGHLANDS	11,660	6,796	46.2	58	61
HILLSBOROUGH	181,776	86,754	46.8	59	66
HOLMES	3,383	1,921	46.9	58	65
INDIAN RIVER	16,622	6,618	46.9	59	63
JACKSON	7,183	3,721	47.1	62	65
JEFFERSON	1,489	1,073	47.7	34	38
LAFAYETTE	1,035	540	49.2	60	68
LAKE	33,988	13,105	50	60	64
LEE	66,429	29,921	50.2	61	64
LEON	32,194	11,344	50.2	68	72
LEVY	6,208	3,451	50.7	59	60
LIBERTY	1,405	659	51.2	63	67
MADISON	3,245	1,975	51.8	42	38
MANATEE	40,243	16,160	52.2	61	63
MARION	40,362	20,483	52.2	58	65
MARTIN	17,773	5,660	52.3	71	77
MONROE	9,123	3,323	53.5	65	69
NASSAU	10,544	3,388	54.1	66	69
OKALOOSA	31,006	8,820	54.2	73	79
OKEECHOBEE	7,275	3,946	54.2	53	60
ORANGE	165,881	67,405	54.5	56	61
OSCEOLA	43,906	22,955	54.8	54	55
PALM BEACH	170,217	71,056	55.6	58	66
PASCO	57,497	26,560	56.6	60	61
PINELLAS	114,466	43,421	56.8	61	62
POLK	84,104	45,838	57.1	54	57
PUTNAM	12,237	7,268	58.3	53	57
ST. JOHNS	23,170	4,278	59.4	72	74
ST. LUCIE	32,791	17,117	60.9	55	57

Table 3.2 Continued

SANTA ROSA	24,427	7,450	60.9	74	77
SARASOTA	39,519	12,942	61.8	68	73
SEMINOLE	64,857	18,888	62.4	69	75
SUMTER	6,857	3,756	62.7	59	66
SUWANNEE	5,857	2,938	64.5	53	55
TAYLOR	3,560	1,925	66.8	57	55
UNION	2,171	1,015	67.9	58	58
VOLUSIA	64,058	25,152	70	65	68
WAKULLA	4,728	1,622	72.1	68	69
WALTON	6,522	3,342	72.2	64	63
WASHINGTON	3,425	1,957	75.4	58	63

2004-5 Florida District	Total Membership	Total Eligible	Percent Eligible	FCAT 3+% Reading	FCAT 3+% Math
ALACHUA	29,104	13,466	24.1	64	68
BAKER	4,773	2,114	27.7	53	60
BAY	27,014	12,534	29.4	67	70
BRADFORD	3,814	2,240	30.7	55	58
BREVARD	74,370	22,952	30.7	73	80
BROWARD	273,334	110,124	30.9	59	68
CALHOUN	2,307	1,216	33.9	69	75
CHARLOTTE	17,421	7,769	34.9	67	76
CITRUS	15,652	6,820	34.9	63	68
CLAY	32,403	7,817	36.9	67	73
COLLIER	41,948	18,798	37.2	59	68
COLUMBIA	9,881	5,343	37.6	59	57
DADE	366,125	232,793	37.6	52	59
DESOTO	4,921	2,955	37.7	51	59
DIXIE	2,143	1,391	40.3	52	55
DUVAL	127,461	64,152	40.7	59	61
ESCAMBIA	43,710	26,726	41.4	55	57
FLAGLER	9,694	2,975	43.4	64	68
FRANKLIN	1,371	838	43.6	51	53
GADSDEN	6,651	4,978	44.2	36	43
GILCHRIST	2,850	1,415	44.3	72	80
GLADES	1,237	827	44.4	48	50
GULF	2,177	1,040	44.6	62	67
HAMILTON	2,003	1,197	44.8	40	44
HARDEE	5,147	3,418	44.9	51	62
HENDRY	7,593	4,925	45.8	49	56
HERNANDO	20,595	9,240	46.3	60	64
HIGHLANDS	12,021	7,199	46.4	58	65
HILLSBOROUGH	188,661	94,093	47.8	59	67

Table 3-2. Continued.

HOLMES	3,389	1,926	48	56	62
INDIAN RIVER	17,073	7,546	48.2	64	69
JACKSON	7,354	4,016	49.1	61	67
JEFFERSON	1,374	992	49.1	37	36
LAFAYETTE	1,058	560	49.7	58	67
LAKE	35,958	14,617	49.9	61	66
LEE	70,852	31,490	50	62	67
LEON	31,881	11,757	50.2	69	74
LEVY	6,244	3,419	50.3	56	60
LIBERTY	1,392	683	52	65	66
MADISON	3,180	2,023	52.7	45	41
MANATEE	41,066	17,805	52.9	61	65
MARION	41,103	22,129	53.1	58	66
MARTIN	17,859	6,057	53.2	73	80
MONROE	8,624	3,212	53.8	67	72
NASSAU	10,705	3,733	54.1	65	73
OKALOOSA	31,065	9,146	54.6	75	81
OKEECHOBEE	7,345	3,901	54.7	54	62
ORANGE	172,504	86,214	54.8	60	66
OSCEOLA	47,321	25,182	55.1	55	57
PALM BEACH	174,102	65,489	55.3	61	69
PASCO	60,614	27,754	56.8	60	62
PINELLAS	112,809	46,644	57.8	62	67
POLK	86,367	43,317	58.7	55	59
PUTNAM	12,431	8,097	59.8	53	59
ST. JOHNS	24,320	13,400	59.9	73	78
ST. LUCIE	34,794	16,754	60.1	57	60
SANTA ROSA	25,020	7,672	61.1	74	79
SARASOTA	41,160	15,457	61.1	67	73
SEMINOLE	66,333	18,357	63.6	70	76
SUMTER	7,144	3,907	63.6	60	69
SUWANNEE	5,776	3,006	64.9	54	56
TAYLOR	3,487	2,015	64.9	58	58
UNION	2,200	1,055	65.1	61	65
VOLUSIA	65,020	24,490	66.4	65	70
WAKULLA	4,848	1,691	66.9	68	76
WALTON	6,547	3,214	72.2	63	64
WASHINGTON	3,490	1,929	74.9	60	66

2005-6 Florida District	Total Membership	Total Eligible	Percent Eligible	FCAT 3+ % Reading	FCAT 3+ % Math
ALACHUA	29,109	13,518	17.8	66	69
BAKER	4,903	2,096	24.7	54	61
BAY	27,614	12,630	26.5	69	72

Table 3-2. Continued

BRADFORD	3,779	2,000	28.2	59	57
BREVARD	75,207	22,584	28.8	74	81
BROWARD	271,564	112,599	30	64	72
CALHOUN	2,274	1,178	30.5	70	76
CHARLOTTE	17,901	7,065	32.3	69	75
CITRUS	15,812	6,707	33.6	66	71
CLAY	34,167	8,427	35	69	75
COLLIER	43,288	17,858	35.4	62	68
COLUMBIA	10,188	5,488	36.6	61	58
DADE	362,050	221,229	39.4	58	62
DESOTO	5,019	2,979	39.4	52	58
DIXIE	2,238	1,535	39.5	56	59
DUVAL	126,648	52,709	40.3	60	62
ESCAMBIA	43,458	26,846	41.3	59	59
FLAGLER	11,049	3,864	41.5	66	68
FRANKLIN	1,350	826	41.6	54	56
GADSDEN	6,515	5,225	41.7	39	43
GILCHRIST	2,892	1,445	41.9	75	83
GLADES	1,272	775	41.9	55	58
GULF	2,179	980	42.4	63	68
HAMILTON	2,006	1,124	42.8	42	42
HARDEE	4,967	3,177	43.5	54	64
HENDRY	7,572	5,277	43.5	52	60
HERNANDO	21,707	9,490	43.7	63	67
HIGHLANDS	12,128	6,950	44.2	59	65
HILLSBOROUGH	193,669	95,726	44.3	62	68
HOLMES	3,439	1,958	45	61	61
INDIAN RIVER	17,233	6,788	45.7	64	69
JACKSON	7,455	3,931	46.3	63	70
JEFFERSON	1,230	855	46.4	44	44
LAFAYETTE	1,080	560	47.5	59	64
LAKE	38,058	15,932	47.6	63	68
LEE	75,610	33,503	49.4	64	68
LEON	32,319	11,838	50	71	75
LEVY	6,256	3,490	51.8	60	66
LIBERTY	1,471	700	51.9	68	64
MADISON	3,032	2,231	52.2	50	43
MANATEE	42,348	18,433	52.5	63	67
MARION	42,017	22,059	52.6	62	69
MARTIN	18,150	4,815	52.7	73	80
MONROE	8,594	3,383	52.9	70	74
NASSAU	10,866	3,652	52.9	68	74
OKALOOSA	30,999	8,743	52.9	76	81
OKEECHOBEE	7,329	3,826	53.9	57	64
ORANGE	175,593	81,245	54.4	63	66

Table 3-2. Continued

OSCEOLA	49,772	27,340	54.9	58	59
PALM BEACH	174,861	72,947	55.8	63	69
PASCO	62,766	27,283	56	63	63
PINELLAS	112,150	45,217	56.9	63	68
POLK	89,423	51,575	57.1	57	59
PUTNAM	12,268	8,055	57.3	56	59
ST. JOHNS	25,757	4,592	57.7	76	79
ST. LUCIE	36,189	19,022	59.4	58	60
SANTA ROSA	25,188	8,144	60.9	75	80
SARASOTA	41,884	12,081	61.1	71	75
SEMINOLE	67,508	20,566	61.2	73	78
SUMTER	7,416	3,919	61.8	63	70
SUWANNEE	5,954	3,147	64	56	58
TAYLOR	3,378	1,930	65.7	61	60
UNION	2,290	1,013	68.6	64	65
VOLUSIA	65,599	27,459	69.5	65	69
WAKULLA	4,914	1,741	69.7	69	76
WALTON	6,896	3,276	73.6	67	68
WASHINGTON	3,560	1,937	80.2	63	67

2005-6 Florida District	Total Membership	Total Eligible	Percent Eligible	FCAT 3+ % Reading	FCAT 3+ % Math
ALACHUA	29,109	13,518	17.8	66	69
BAKER	4,903	2,096	24.7	54	61
BAY	27,614	12,630	26.5	69	72
BRADFORD	3,779	2,000	28.2	59	57
BREVARD	75,207	22,584	28.8	74	81
BROWARD	271,564	112,599	30	64	72
CALHOUN	2,274	1,178	30.5	70	76
CHARLOTTE	17,901	7,065	32.3	69	75
CITRUS	15,812	6,707	33.6	66	71
CLAY	34,167	8,427	35	69	75
COLLIER	43,288	17,858	35.4	62	68
COLUMBIA	10,188	5,488	36.6	61	58
DADE	362,050	221,229	39.4	58	62
DESOTO	5,019	2,979	39.4	52	58
DIXIE	2,238	1,535	39.5	56	59
DUVAL	126,648	52,709	40.3	60	62
ESCAMBIA	43,458	26,846	41.3	59	59
FLAGLER	11,049	3,864	41.5	66	68
FRANKLIN	1,350	826	41.6	54	56
GADSDEN	6,515	5,225	41.7	39	43
GILCHRIST	2,892	1,445	41.9	75	83

Table 3-2. Continued

GLADES	1,272	775	41.9	55	58
GULF	2,179	980	42.4	63	68
HAMILTON	2,006	1,124	42.8	42	42
HARDEE	4,967	3,177	43.5	54	64
HENDRY	7,572	5,277	43.5	52	60
HERNANDO	21,707	9,490	43.7	63	67
HIGHLANDS	12,128	6,950	44.2	59	65
HILLSBOROUGH	193,669	95,726	44.3	62	68
HOLMES	3,439	1,958	45	61	61
INDIAN RIVER	17,233	6,788	45.7	64	69
JACKSON	7,455	3,931	46.3	63	70
JEFFERSON	1,230	855	46.4	44	44
LAFAYETTE	1,080	560	47.5	59	64
LAKE	38,058	15,932	47.6	63	68
LEE	75,610	33,503	49.4	64	68
LEON	32,319	11,838	50	71	75
LEVY	6,256	3,490	51.8	60	66
LIBERTY	1,471	700	51.9	68	64
MADISON	3,032	2,231	52.2	50	43
MANATEE	42,348	18,433	52.5	63	67
MARION	42,017	22,059	52.6	62	69
MARTIN	18,150	4,815	52.7	73	80
MONROE	8,594	3,383	52.9	70	74
NASSAU	10,866	3,652	52.9	68	74
OKALOOSA	30,999	8,743	52.9	76	81
OKEECHOBEE	7,329	3,826	53.9	57	64
ORANGE	175,593	81,245	54.4	63	66
OSCEOLA	49,772	27,340	54.9	58	59
PALM BEACH	174,861	72,947	55.8	63	69
PASCO	62,766	27,283	56	63	63
PINELLAS	112,150	45,217	56.9	63	68
POLK	89,423	51,575	57.1	57	59
PUTNAM	12,268	8,055	57.3	56	59
ST. JOHNS	25,757	4,592	57.7	76	79
ST. LUCIE	36,189	19,022	59.4	58	60
SANTA ROSA	25,188	8,144	60.9	75	80
SARASOTA	41,884	12,081	61.1	71	75
SEMINOLE	67,508	20,566	61.2	73	78
SUMTER	7,416	3,919	61.8	63	70
SUWANNEE	5,954	3,147	64	56	58
TAYLOR	3,378	1,930	65.7	61	60
UNION	2,290	1,013	68.6	64	65
VOLUSIA	65,599	27,459	69.5	65	69
WAKULLA	4,914	1,741	69.7	69	76
WALTON	6,896	3,276	73.6	67	68

Table 3-2. Continued

2006-7 Florida District	Total Membership	Total Eligible	Percent Eligible	FCAT 3+ % Reading	FCAT 3+ % Math
WASHINGTON	3,560	1,937	80.2	63	67
ALACHUA	29,005	12,848	44.3	67	70
BAKER	4,975	2,065	41.5	59	65
BAY	27,007	11,924	44.2	70	74
BRADFORD	3,683	1,954	53.1	57	59
BREVARD	74,807	22,218	29.7	76	82
BROWARD	262,811	108,909	41.4	63	72
CALHOUN	2,227	1,141	51.2	68	78
CHARLOTTE	17,894	7,752	43.3	70	77
CITRUS	16,087	6,648	41.3	67	73
CLAY	35,723	8,916	25.0	70	76
COLLIER	43,186	18,703	43.3	63	68
COLUMBIA	10,179	5,482	53.9	63	63
DADE	353,831	208,795	59.0	57	63
DESOTO	5,001	3,040	60.8	52	59
DIXIE	2,241	1,504	67.1	60	66
DUVAL	125,180	51,802	41.4	61	63
ESCAMBIA	42,709	24,105	56.4	59	61
FLAGLER	12,130	4,411	36.4	66	67
FRANKLIN	1,324	829	62.6	57	56
GADSDEN	6,648	5,304	79.8	38	43
GILCHRIST	2,889	1,488	51.5	77	85
GLADES	1,257	781	62.1	54	64
GULF	2,193	988	45.1	61	66
HAMILTON	2,036	1,347	66.2	43	43
HARDEE	5,037	3,083	61.2	56	64
HENDRY	7,463	4,556	61.0	53	61
HERNANDO	22,450	9,707	43.2	64	68
HIGHLANDS	12,457	6,794	54.5	60	67
HILLSBOROUGH	193,546	94,279	48.7	62	69
HOLMES	3,384	1,887	55.8	63	66
INDIAN RIVER	17,613	6,757	38.4	65	69
JACKSON	7,382	3,649	49.4	63	72
JEFFERSON	1,220	928	76.1	46	54
LAFAYETTE	1,074	564	52.5	60	73
LAKE	39,623	16,333	41.2	63	70
LEE	78,984	33,612	42.6	65	69
LEON	32,404	11,596	35.8	70	75
LEVY	6,260	3,614	57.7	60	69
LIBERTY	1,477	722	48.9	66	64
MADISON	2,935	2,141	72.9	51	47

Table 3-2. Continued

MANATEE	42,315	18,117	42.8	63	66
MARION	42,569	22,249	52.3	62	69
MARTIN	18,245	5,262	28.8	75	82
MONROE	8,377	3,014	36.0	70	75
NASSAU	10,940	3,565	32.6	69	77
OKALOOSA	30,277	8,762	28.9	77	83
OKEECHOBEE	7,288	3,883	53.3	58	67
ORANGE	175,238	82,831	47.3	64	68
OSCEOLA	51,888	28,326	54.6	58	60
PALM BEACH	171,683	70,991	41.4	64	72
PASCO	64,680	27,543	42.6	64	65
PINELLAS	110,006	44,530	40.5	65	70
POLK	92,809	53,213	57.3	58	62
PUTNAM	12,103	8,087	66.8	57	62
ST. JOHNS	26,971	4,746	17.6	77	80
ST. LUCIE	38,799	20,370	52.5	57	59
SANTA ROSA	25,393	7,985	31.4	76	80
SARASOTA	42,190	15,020	35.6	73	77
SEMINOLE	66,344	20,339	30.7	74	80
SUMTER	7,434	3,942	53.0	65	72
SUWANNEE	5,981	3,151	52.7	57	60
TAYLOR	3,420	1,992	58.2	64	67
UNION	2,265	967	42.7	66	68
VOLUSIA	65,867	27,660	42.0	66	69
WAKULLA	5,050	1,782	35.3	72	76
WALTON	6,699	3,010	44.9	68	70
WASHINGTON	3,557	1,951	54.8	61	67

2007-8 Florida District	Total Membership	Total Eligible	Percent Eligible	FCAT 3+ % Reading	FCAT 3+ % Math
ALACHUA	28,373	12,612	44.5	69	72
BAKER	4,958	2,140	43.2	62	71
BAY	26,236	11,855	45.2	73	78
BRADFORD	3,576	1,967	55.0	60	65
BREVARD	74,371	22,689	30.5	78	84
BROWARD	258,895	115,063	44.4	66	75
CALHOUN	2,229	1,127	50.6	74	82
CHARLOTTE	17,799	8,333	46.8	72	79
CITRUS	16,174	6,763	41.8	72	79
CLAY	36,125	9,083	25.1	73	79
COLLIER	42,721	18,914	44.3	65	70
COLUMBIA	10,134	5,465	53.9	66	69
DADE	348,113	206,578	59.3	60	67

Table 3.2 Continued

DESOTO	5,012	3,321	66.3	57	66
DIXIE	2,190	1,470	67.1	62	72
DUVAL	124,775	48,632	39.0	63	66
ESCAMBIA	41,855	24,895	59.5	62	66
FLAGLER	12,774	4,555	35.7	69	73
FRANKLIN	1,246	690	55.4	58	61
GADSDEN	6,516	4,636	71.1	40	50
GILCHRIST	2,889	1,374	47.6	80	86
GLADES	1,365	530	38.8	61	69
GULF	2,171	966	44.5	69	71
HAMILTON	2,018	1,433	71.0	46	46
HARDEE	5,014	3,184	63.5	59	71
HENDRY	7,308	4,500	61.6	55	68
HERNANDO	22,836	10,248	44.9	67	72
HIGHLANDS	12,445	7,434	59.7	62	68
HILLSBOROUGH	193,116	92,986	48.2	64	71
HOLMES	3,430	1,998	58.3	65	72
INDIAN RIVER	17,646	7,234	41.0	68	73
JACKSON	7,363	3,892	52.9	66	75
JEFFERSON	1,154	884	76.6	45	55
LAFAYETTE	1,089	549	50.4	62	74
LAKE	40,710	16,734	41.1	66	72
LEE	80,541	37,188	46.2	67	71
LEON	32,471	10,550	32.5	72	77
LEVY	6,228	3,829	61.5	65	71
LIBERTY	1,513	674	44.5	64	69
MADISON	2,783	1,999	71.8	49	49
MANATEE	42,524	18,926	44.5	65	70
MARION	42,565	22,184	52.1	65	72
MARTIN	18,109	4,195	23.2	77	83
MONROE	8,363	2,781	33.3	74	80
NASSAU	11,079	3,717	33.5	73	79
OKALOOSA	29,568	8,715	29.5	79	84
OKEECHOBEE	7,037	3,887	55.2	60	70
ORANGE	174,136	82,454	47.4	66	71
OSCEOLA	52,742	33,235	63.0	61	64
PALM BEACH	170,844	70,314	41.2	66	75
PASCO	66,313	27,712	41.8	68	69
PINELLAS	107,895	44,008	40.8	66	72
POLK	94,164	47,449	50.4	60	65
PUTNAM	11,808	7,978	67.6	59	66
ST. JOHNS	27,867	5,626	20.2	80	83
ST. LUCIE	40,347	21,781	54.0	60	64
SANTA ROSA	25,711	7,853	30.5	78	83
SARASOTA	42,013	14,758	35.1	75	81

Table 3.2 Continued

SEMINOLE	65,355	20,629	31.6	76	82
SUMTER	7,518	3,984	53.0	70	76
SUWANNEE	6,005	3,299	54.9	59	64
TAYLOR	3,389	2,039	60.2	67	71
UNION	2,296	1,181	51.4	63	68
VOLUSIA	64,570	27,446	42.5	68	72
WAKULLA	5,178	1,956	37.8	74	78
WALTON	6,967	3,216	46.2	69	77
WASHINGTON	3,590	1,964	54.7	62	68

2008-9 Florida District	Total Membership	Total Eligible	Percent Eligible	FCAT 3+ % Reading	FCAT 3+ % Math
ALACHUA	27,665	12,791	46.2	69	72
BAKER	5,065	2,322	45.8	64	74
BAY	25,958	12,360	47.6	74	77
BRADFORD	3,403	1,896	55.7	60	66
BREVARD	73,098	25,150	34.4	78	84
BROWARD	256,355	122,597	47.8	67	76
CALHOUN	2,246	1,237	55.1	76	81
CHARLOTTE	17,370	8,765	50.5	72	79
CITRUS	16,032	7,525	46.9	70	77
CLAY	35,997	10,617	29.5	74	79
COLLIER	42,534	21,654	50.9	67	72
COLUMBIA	10,058	5,786	57.5	67	70
DADE	345,525	219,118	63.4	62	69
DESOTO	4,952	3,349	67.6	59	69
DIXIE	2,119	1,474	69.6	67	71
DUVAL	122,610	56,064	45.7	63	68
ESCAMBIA	40,924	24,046	58.8	65	68
FLAGLER	12,890	6,167	47.8	69	72
FRANKLIN	1,281	888	69.3	63	68
GADSDEN	6,417	5,729	89.3	44	54
GILCHRIST	2,750	1,465	53.3	82	84
GLADES	1,388	690	49.7	64	74
GULF	2,050	934	45.6	70	75
HAMILTON	1,953	1,286	65.9	45	46
HARDEE	5,108	3,543	69.4	60	71
HENDRY	7,038	4,937	70.2	58	68
HERNANDO	22,739	11,508	50.6	68	73
HIGHLANDS	12,280	7,784	63.4	63	70
HILLSBOROUGH	191,975	98,943	51.5	65	72
HOLMES	3,399	2,022	59.5	65	70
INDIAN RIVER	17,606	8,048	45.7	70	74

Table 3.2 Continued

JACKSON	7,319	4,102	56.1	68	74
JEFFERSON	1,106	832	75.2	46	48
LAFAYETTE	1,119	596	53.3	65	75
LAKE	41,010	18,367	44.8	67	71
LEE	79,434	41,464	52.2	70	73
LEON	32,521	12,859	39.5	71	76
LEVY	6,024	3,799	63.1	65	72
LIBERTY	1,484	788	53.1	65	67
MADISON	2,715	2,049	75.5	53	48
MANATEE	42,583	19,918	46.8	66	69
MARION	42,618	23,383	54.9	66	72
MARTIN	18,067	6,030	33.4	77	84
MONROE	8,278	2,968	35.9	75	81
NASSAU	10,982	3,953	36.0	73	79
OKALOOSA	29,126	9,349	32.1	80	84
OKEECHOBEE	7,004	4,235	60.5	62	72
ORANGE	172,276	83,640	48.6	67	72
OSCEOLA	51,937	33,815	65.1	62	66
PALM BEACH	170,756	75,360	44.1	68	77
PASCO	66,784	30,720	46.0	69	70
PINELLAS	106,066	46,102	43.5	67	72
POLK	94,725	54,665	57.7	61	66
PUTNAM	11,493	8,033	69.9	61	67
ST. JOHNS	29,024	5,491	18.9	81	85
ST. LUCIE	38,839	22,413	57.7	60	65
SANTA ROSA	25,397	8,896	35.0	79	83
SARASOTA	41,070	16,784	40.9	76	81
SEMINOLE	64,928	22,350	34.4	77	82
SUMTER	7,650	4,159	54.4	73	78
SUWANNEE	5,978	3,607	60.3	61	64
TAYLOR	3,299	2,039	61.8	65	69
UNION	2,315	1,238	53.5	69	72
VOLUSIA	63,166	29,463	46.6	69	72
WAKULLA	5,264	2,169	41.2	75	78
WALTON	7,000	3,468	49.5	72	76
WASHINGTON	3,534	2,061	58.3	68	71

$$r = \frac{N \sum xy - \sum (x)(y)}{\sqrt{N \sum x^2 - \sum (x^2)} [N \sum y^2 - \sum (y^2)]}$$

Figure 3-1. Pearson *r* Correlation Formula

## CHAPTER 4 RESULTS

The purposes of this study were to analyze the relationship between poverty and student achievement in the state of Florida, and to determine the financial implications of theoretical poverty weights and compensatory practices activated in the FEFP. To provide context for this study, a review of education finance literature was conducted. Poverty, its influence in American education, its impact on student achievement, its role in state education funding systems, and its effects on education finance were highlighted in this review. Compensatory practices and variations of poverty weights were analyzed. The methodology utilized to correlate student achievement in Florida and poverty was described in Chapter 3. The methodology utilized to determine fiscal impacts of activating different theoretical poverty weights in the FEFP was also described. The questions specifically addressed for this study were:

1. What were the relationships between FRPL percentages and FCAT achievement data in Florida schools?
2. What were the relationships between FRPL percentages and FCAT achievement data in Florida elementary schools?
3. What were the fiscal implications of initiating a theoretical poverty weight into the FEFP?
4. What were the fiscal implications of employing compensatory practices of a contemporary adequacy study in the FEFP?

### **Descriptive Statistics**

Numerous data regarding poverty and student achievement in Florida were compiled and analyzed in this study. Descriptive and correlation statistics were utilized in the analysis of FRPL data and FCAT data in order to study relationships of these variables. The descriptive statistics displayed central tendencies of the variables, and

the correlation statistics evidenced relationships between poverty and student achievement. There were sixty-seven school districts in Florida utilized for the data sample. During the years of 2004-2009, these sixty-seven districts represented an average of 2,635,276 students. Descriptive statistics, including the mean, median, mode, and range of FRPL percentages for Florida school districts were examined for years 2004 to 2009. See Table 4-1. The mean, median, mode, and range of FCAT Reading scores (Table 4-2) for Florida school districts, and the mean, median, mode, and range of FCAT Math scores (Table 4-3) for Florida school districts were examined for years 2004 to 2009. Further statistics focused on elementary school FRPL and FCAT data in 2009. Descriptive statistics focused on FRPL percentages as well as student FCAT scores of level 3 or higher, and were utilized to reveal central tendencies.<sup>309</sup>

During the years of 2004 to 2009, the lowest mean percentage of all Florida students qualifying for FRPL was 45.4 percent, occurring in 2004 and 2007, and the highest mean percentage of all Florida students qualifying for FRPL was 49.6 percent in 2009.<sup>310</sup> The mean percentage of third grade students qualifying for FRPL in 2009 was 60.1 percent, the mean for fourth grade students was 58.4 percent, and the mean for fifth grade students was 56.5 percent. The FRPL eligibility percentages of elementary students were higher than overall averages that include middle and high school students. The lowest reported FRPL percentage in the sample was 17.6 percent in 2007 in St. John's County. The highest reported FRPL percentage in the sample was 92.4

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<sup>309</sup> Statsoft, Electronic Statistics Textbook, <http://www.statsoft.com/textbook/basic-statistics/>

<sup>310</sup> Table 4-1.

percent of third grade students in 2009 in Gadsden County. The range of wealth disparity according to FRPL data was lowest in 2005 with a range of 50.8 percent. The most substantial range of wealth disparity according to FRPL data was 70.3 percent in 2009.

During the years of 2004 to 2009, the lowest mean percentage of all Florida students scoring at level 3 or higher on FCAT Reading was 58.9 percent, occurring in 2004, and the highest mean percentage of all Florida students scoring at level 3 or higher on FCAT Reading was 67 percent in 2009.<sup>311</sup> The mean percentage of third grade students scoring at level 3 or higher on FCAT Reading in 2009 was 73.7 percent, the fourth grade average was 74.4 percent, and the fifth grade mean was 70.3 percent. In 2009, elementary students scored higher on FCAT Reading tests than middle and high school students combined. During the years studied, the lowest reported average FCAT Reading score was 34 percent in Gadsden and Jefferson Counties in 2004. The highest average FCAT Reading score was 82 percent in Gilchrist County in 2009. In 2009, 66.4 percent of third grade students eligible for FRPL scored 3 or higher on FCAT Reading, and 85.3 percent of third grade students who were not eligible for FRPL scored 3 or higher.<sup>312</sup> In 2009, 66.6 percent of fourth grade students eligible for FRPL scored 3 or higher on FCAT Reading, and 85.6 percent of students who were not eligible for FRPL scored 3 or higher.<sup>313</sup> In 2009, 61.4 percent of fifth grade students

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<sup>311</sup> Table 4-2.

<sup>312</sup> Ibid.

<sup>313</sup> Table 4-2.

eligible for FRPL scored 3 or higher on FCAT Reading, and 82.3 percent of fifth grade students who were not eligible for FRPL scored 3 or higher.<sup>314</sup>

During the years of 2004 to 2009, the lowest mean percentage of all Florida students scoring at level 3 or higher on FCAT Math was 62.3 percent, occurring in 2004, and the highest mean percentage of all Florida students scoring at level 3 or higher on FCAT Math was 72.1 in 2009.<sup>315</sup> The mean percentage of third grade students scoring at level 3 or higher on FCAT Math in 2009 was 79.2 percent, the fourth grade average was 74.6 percent, and the fifth grade mean was 59.6 percent. During the years studied, the lowest reported average FCAT Math score was 36 percent in Jefferson County in 2005. The highest average FCAT Math score was 86 percent in Gilchrist County in 2009. In 2009, 72.8 percent of third grade students eligible for FRPL scored 3 or higher on FCAT Math, and 89.1 percent of third grade students who were not eligible for FRPL scored 3 or higher.<sup>316</sup> In 2009, 67.6 percent of fourth grade students eligible for FRPL scored 3 or higher on FCAT Math, and 84.7 percent of fourth grade students who were not eligible for FRPL scored 3 or higher.<sup>317</sup> In 2009, 49.6 percent of fifth grade students eligible for FRPL scored 3 or higher on FCAT Math, and 72.9 percent of fifth grade students who were not eligible for FRPL scored 3 or higher.<sup>318</sup>

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<sup>314</sup> Ibid.

<sup>315</sup> Table 4-3.

<sup>316</sup> Ibid.

<sup>317</sup> Ibid.

<sup>318</sup> Table 4-3.

## Poverty and Student Achievement Correlations

In this study, poverty in Florida schools and school districts was determined by the percentages of student eligibility in the FRPL program. Student achievement in Florida was determined by the results of standardized test scores on the FCAT. The FRPL percentages for each Florida district were compiled from 2004 to 2009 and matched to the available relevant FCAT data from those years, and analysis was conducted using Pearson  $r$  correlation. The FRPL percentages for all districts were correlated with the FCAT Reading scores for all districts. The FRPL percentages were also correlated with the FCAT Math scores for all districts, resulting in two correlation coefficients for each school district for the years 2004 to 2009. See Table 4-4. Poverty data in Florida elementary schools are more accurate than poverty data in middle and high schools.<sup>319</sup> Elementary school FRPL information was utilized for more detailed analysis in the year 2009, and additional correlation coefficients were calculated for the year 2009 in regards to third, fourth and fifth grade students.

All correlation coefficients between FCAT Reading scores and FRPL percentages indicated a negative relationship, and all correlation coefficients between FCAT Math scores and FRPL percentages also indicated a negative relationship. Higher numbers associated with one variable were, in general, paired with lower numbers associated with the second variable, indicating this negative correlation.<sup>320</sup> When including all students, the relationship with the strongest association was the

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<sup>319</sup> Donka Mirtcheva and Lisa Powell, "Participation in the National School Lunch Program: Importance of School-level and Neighborhood Contextual Factors," *Journal of School Health* 79, no. 10 (2009): 485-94; Kevin Welner, "Non-Evidence about Tracking: Critiquing the New Report from the Fordham Institute," *Teachers College Record*, December (2009); Carol Pogash, "Free Lunch Isn't Cool So Some Students Go Hungry," *New York Times*, March 1, 2008.

<sup>320</sup> Statsoft, *Electronic Statistics Textbook*, <http://www.statsoft.com/textbook/basic-statistics/#Correlations>

correlation between FCAT Reading scores and FRPL percentages in 2007.<sup>321</sup> This correlation coefficient was -0.855. The relationship with the weakest association was the correlation between FCAT Math scores and FRPL percentages in 2008. This correlation coefficient was -0.761. All associations were relevant, yet quantitative relationships were weaker when analyzing the subset of Florida elementary schools. The strongest correlation of these 2009 elementary school analyses was the relationship between fourth grade FCAT Reading scores and associated FRPL percentages. The coefficient was -0.785. The weakest correlation of these 2009 elementary school analyses was the relationship between fourth grade FCAT Math scores and associated FRPL percentages. The coefficient was -0.586. Although FRPL percentages were higher in Florida elementary schools relative to average FRPL percentages in all schools, the scores in elementary schools were notably higher as well. The correlations between poverty and student achievement in Florida elementary schools were on average not as strong as the correlations recognized when including all schools.

Overall, FCAT Reading scores had stronger correlations with FRPL than FCAT Math scores. In general, FRPL eligibility percentages were higher in elementary schools than they were in the whole district populations, and average FCAT scores in both reading and math were notably higher as well. The average correlation coefficient for FCAT Reading and FRPL percentages was -0.826, and the average correlation coefficient for FCAT Math and FRPL percentages was -0.782, both indicating a recognizable and substantial relationship between poverty and student achievement. By analyzing these data it cannot be determined that poverty causes lower student

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<sup>321</sup> Table 4-4.

achievement, as other variables impact this relationship, but the data unquestionably displays a significant association between poverty and student achievement levels in Florida.

### **Poverty Weight Applied to the FEFP**

Theoretical poverty weights, established by reviewing policies of state legislatures and practices utilized in a contemporary adequacy study, were applied to the FEFP in order to determine funding implications. In 2010, the added weights for Exceptional Student Education, English for Speakers of Other Languages, and Career Education programs ranged from .031 to 3.935 in the FEFP.<sup>322</sup> There was no poverty-based weight that established a WFTE for low-income students included in the FEFP. The poverty weights calculated in the foundation formulas of other states ranged from 0.05 to .25, providing supplements to base level funding for students in poverty. The average poverty weight utilized in foundation formulas was 0.193. This poverty weight was applied to the FEFP in the same manner as the other program cost factors in the FEFP in order to establish a WFTE for low-income students.

According to the Second Calculation of the 2010-2011 FEFP, the Unweighted FTE state total was 2,645,079.41.<sup>323</sup> In 2009, there were 53.47 percent of students who were eligible for FRPL.<sup>324</sup> Multiplying the Unweighted FTE by the percentage of students eligible for FRPL resulted in an Unweighted FTE of 1,414,323.96. Multiplying

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<sup>322</sup> The Funding for Florida School Districts Statistical Report, 2010-1011, <http://www.fl DOE.org/fe fp/pdf/fe fpdist.pdf>

<sup>323</sup> The Funding for Florida School Districts Statistical Report, 2010-1011, <http://www.fl DOE.org/fe fp/pdf/fe fpdist.pdf>

<sup>324</sup> Florida Department of Education, Education Information and Accountability Services, 2010, Series 2011-03D, <http://www.fl DOE.org/eias/eiaspubs/pdf/frplunch0910.pdf>

this Unweighted FTE by a theoretical program cost factor or poverty weight of 0.193 resulted in a WFTE of 272,964.52. Prior to calculating a poverty weight, the 2010-2011 Funded Weighted FTE was 2,852,181.12. After adding the additional WFTE from the applied poverty weight, the new Funded Weighted FTE was 3,125,145.64. The Base Student Allocation (BSA) of \$3,623.76 was multiplied by the new Funded Weighted FTE with a result of \$11,324,777,764.41. In the 2010-2011 FEFP, when the District Cost Differential was applied to the BSA times Funded Weighted FTE, the result was a Base Funding of 0.99936 of the BSA times Funded Weighted FTE. This percentage was utilized in the theoretical calculation to yield a new total Base Funding of \$11,317,529,906.64. All other individualized district additions remained the same, and all other factors, including the lottery and school recognition funds, class size reduction funds, state fiscal stabilization funds, and local funding were added. The Total State, Local, and Federal Funding established in the 2010-2011 FEFP was \$18,082,453,785. After the application of a theoretical poverty weight of 0.193, the Total State, Local, and Federal Funding established was \$19,057,765,608. The additional funding generated from the poverty weight was \$975,311,823. See Table 4-5.

### **Adequacy Study Applied to the FEFP**

Compensatory elements indicated in an education adequacy study conducted for the state of Rhode Island in 2007 were applied as theoretical compensatory inclusions to the 2010-2011 FEFP. These inclusions were operationalized in the FEFP as explicit poverty weights in the same manner as the theoretical poverty weight in the previous context. The poverty weight from the last context was 0.193, based on an average of the weights utilized by other state legislatures. Two “discount rates” were utilized as compensatory elements in the Successful Schools approach in the Rhode Island

adequacy study. Based on analyses of additional funding provided by states across the country, the researchers' recommended a rate of 25 percent. In addition, the researchers revealed that a variety of research indicated that the current standard of practice (i.e. 25 percent) underestimated the additional costs for students in poverty, therefore they recommended another rate of 40 percent. The researchers completed calculations and scenarios for both compensatory rates.

The discount rate of 25 percent utilized in the Rhode Island adequacy study was employed as a poverty weight that was applied directly into the foundation formula of the FEFP. According to the Second Calculation of the 2010-2011 FEFP, the Unweighted FTE state total was 2,645,079.41.<sup>325</sup> In 2009, there were 53.47 percent of students eligible for FRPL.<sup>326</sup> Multiplying the Unweighted FTE by the percentage of students eligible for FRPL resulted in an Unweighted FTE of 1,414,323.96. Multiplying this Unweighted FTE by a theoretical program cost factor of 0.25 resulted in a WFTE of 353,580.99. Prior to calculating a poverty weight, the Funded Weighted FTE was 2,852,181.12. After adding the additional WFTE from the applied poverty weight, the new Funded Weighted FTE was 3,205,762.11. The BSA of \$3,623.76 was multiplied by the new Funded Weighted FTE with a result of \$11,616,912,503.73. After adjusting for the District Cost Differential, the new total Base Funding was \$11,609,477,679.73. All other elements and additions of the FEFP remained congruent to the 2010-2011 FEFP calculations. After the application of a poverty weight of 0.25, the Total State, Local, and

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<sup>325</sup> The Funding for Florida School Districts Statistical Report, 2010-1011, <http://www.fldoe.org/fefp/pdf/fefpdist.pdf>

<sup>326</sup> Florida Department of Education, Education Information and Accountability Services, 2010, Series 2011-03D, <http://www.fldoe.org/eias/eiaspubs/pdf/frplunch0910.pdf>

Federal Funding established was \$19,349,713,381. The additional funding generated from the poverty weight was \$1,267,259,596.

The discount rate of 40 percent recommended in the Rhode Island adequacy study was employed as a poverty weight that was applied directly into the foundation formula of the FEFP. The Unweighted FTE associated with students eligible for FRPL was 1,414,323.96. Multiplying this Unweighted FTE by a theoretical program cost factor of 0.40 resulted in a WFTE of 565,729.58. Prior to calculating a poverty weight, the Funded Weighted FTE was \$2,852,181.12. After adding the additional WFTE from the applied poverty weight, the new Funded Weighted FTE was \$3,417,910.70. The BSA of \$3,623.76 was multiplied by the new Funded Weighted FTE with a result of \$12,385,688,092.73. After adjusting for the District Cost Differential, the new total Base Funding was \$12,377,786,147.58. All other elements and additions of the FEFP remained congruent to the 2010-2011 FEFP calculations. After the application of a poverty weight of 0.40, the Total State, Local, and Federal Funding established was \$20,125,923,794. The additional funding generated from the poverty weight was \$2,043,470,009. See Table 4-5.

### **Summary**

This chapter presented the statistical relationships between student achievement and poverty in Florida schools. Utilizing FRPL as a proxy for poverty and FCAT as an indicator of student achievement, relationships between these two variables were revealed. Compensatory elements from policy and research were employed as explicit poverty weights in the FEFP. This chapter exhibited fiscal implications of applying theoretical poverty weights to the FEFP. Conclusions and recommendations were discussed in Chapter 5.

Table 4-1. Florida FRPL Eligibility Percentages

Year	Mean	Median	Mode	Range
2004	45.4	47.1	54	56.9
2005	46.8	49.1	44	50.8
2006	45.9	46.3	52	62.4
2007	45.4	45.1	41	62.2
2008	45.8	45.2	44	51.6
2009	49.6	50.5	46	70.3
Grade 3 (2009)	60.1	58.3	58, 59	68.8
Grade 4 (2009)	58.4	56.1	53	70.1
Grade 5 (2009)	56.5	54.4	50, 52	68.9

Table 4-2. Percentage of Students Scoring at Level 3 or higher on FCAT Reading

Year	Mean	Median	Mode	Range
2004	58.9	58	58	40
2005	59.7	60	59, 60, 61	39
2006	62.3	63	63	37
2007	63.1	63	63	39
2008	65.6	66	66	40
2009	67	67	65, 67	38
Grade 3 (2009)	73.7	72	72	37
Grade 4 (2009)	74.4	74	70	36
Grade 5 (2009)	70.3	69.5	72	35

Table 4-3. Percentage of Students Scoring at Level 3 or higher on FCAT Math

Year	Mean	Median	Mode	Range
2004	62.3	63	66	42
2005	64.7	65	67	45
2006	66.1	67	68	41
2007	67.9	68	69	42
2008	71.5	71	71, 72	40
2009	72.1	72	72	39
Grade 3 (2009)	79.2	79	80	43
Grade 4 (2009)	74.6	75	73	35
Grade 5 (2009)	59.6	59	59	39

Table 4-4. Correlations between FCAT Scores and FRPL Percentages

Year	FCAT Reading Scores and		FCAT Math Scores and	
		FRPL		FRPL
2004		-0.835		-0.792
2005		-0.803		-0.777
2006		-0.827		-0.803
2007		-0.855		-0.789
2008		-0.824		-0.761
2009		-0.813		-0.767
Grade 3 (2009)		-0.729		-0.594
Grade 4 (2009)		-0.785		-0.586
Grade 5 (2009)		-0.757		-0.633

Table 4-5. Poverty Weights Applied to the FEFP

FEFP Formula Component	2010-2011			
	FEFP	Methodology A	Methodology B	Methodology C
Unweighted FTE	2,645,079.41	2,645,079.41	2,645,079.41	2,645,079.41
Poverty Weight		0.193	0.25	0.4
Funded Weighted FTE	2,852,181.12	3,125,145.64	3,205,762.11	3,417,910.70
Base Student Allocation	\$3,623.76	\$3,623.76	\$3,623.76	\$3,623.76
Total Base Funding	\$10,342,218,083	\$11,317,529,906	\$11,609,477,679	\$12,377,786,147
Total Funding	\$18,082,453,785	\$19,057,765,608	\$19,349,713,381	\$20,125,923,794
Increase in Funding		\$975,311,823	\$1,267,259,596	\$2,043,470,009
Percent Increase		5.39	7	11.3

## CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to explicate correlations between poverty and student achievement in Florida, and to apply the compensatory practices evident in education finance research to the education funding system in Florida. This study determined if there were associations between FRPL percentages and student achievement indicators, displaying a relationship between poverty and achievement in Florida schools. In addition, this study reviewed compensatory elements of the fifty state legislatures and employed a theoretical poverty weight for the state of Florida. Furthermore, the poverty weights recommended in a contemporary adequacy study were initiated into the FEFP. In chapter 4, the results of the data analysis and research were presented. This chapter provided a summary of the findings, conclusions, and implications for future research. The study addressed the following research questions:

1. What are relationships between FRPL percentages and FCAT achievement data in Florida schools?
2. What are relationships between FRPL percentages and FCAT achievement data in Florida elementary schools?
3. What are the fiscal implications of initiating a theoretical poverty weight into the FEFP?
4. What are the fiscal implications of employing the compensatory practices of a contemporary adequacy study into the FEFP?

### **Findings**

A primary focus of this study was to ascertain the quantitative association between poverty and student achievement in Florida's school districts. Due to social factors that affect data sampling in poverty in middle and high schools,<sup>327</sup> the study

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<sup>327</sup> Donka Mirtcheva and Lisa Powell, "Participation in the National School Lunch Program: Importance of School-level and Neighborhood Contextual Factors," *Journal of School Health* 79, no. 10 (2009): 485-94;

separated elementary school data and quantified the poverty-achievement relationship in this subset. Introducing a poverty weight based on education finance research into the Florida's funding formula exhibited substantial changes in funding. Applying the compensatory elements of a contemporary adequacy study also displayed significant changes to funding levels. The results of the research questions are summarized below.

### **Research Question 1**

Findings of this study revealed the extent to which poverty and student achievement indicators were associated in Florida. In Florida schools, poverty was most commonly measured by percentages of students eligible to receive free or reduced-price lunch,<sup>328</sup> and results from FCAT Reading and FCAT Math testing were the primary data utilized to determine levels of student achievement.<sup>329</sup> A statistical analysis of poverty and achievement data established empirical relationships for these dynamics. Data from a six year time period, 2004-2009, were analyzed. Correlations between poverty and reading were stronger than correlations between poverty and math. The empirical relationships between poverty and student achievement ranged from -0.761 to -0.855 over the six year period. This evidence illustrated that school districts that had higher percentages of students eligible for FRPL, more often had lower student achievement results in the state of Florida.

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Kevin Welner, "Non-Evidence about Tracking: Critiquing the New Report from the Fordham Institute," *Teachers College Record*, December (2009); Carol Pogash, "Free Lunch Isn't Cool So Some Students Go Hungry," *New York Times*, March 1, 2008.

<sup>328</sup> Kern Alexander and Andrew Wall, "Adequate Funding of Education Programs for At-Risk Children: An Econometric Application of Research-Based Cost Differentials," *Journal of Education Finance* 33, no. 1 (2006): 297-319.

<sup>329</sup> F.S. § 1008.22

## Research Question 2

As students have moved into middle and high schools, negative social stigmas have become attached to accepting free and reduced price lunches in schools and fewer students have been enrolled in the NSLP program.<sup>330</sup> FRPL enrollment has been the primary indicator of poverty, and the numbers of students in poverty that have been underreported are unknown. In 2009, average FRPL percentages were higher in Florida elementary schools (58.36 percent) relative to average FRPL percentages in all Florida public schools (49.62 percent). This study separated the elementary (grades 3, 4, 5) poverty-achievement correlations in order to isolate a subset that was less affected by the underreported variable. In 2009, the FCAT scores were higher in elementary schools relative to the average scores of all schools. The correlations between FRPL and FCAT Reading scores in grades 3, 4, and 5 ranged from -0.728 to -0.784, and the correlations between FRPL and FCAT Math scores in grades 3, 4, and 5 ranged from -0.586 to -0.633. Due to the notably higher FCAT scores demonstrated in elementary grades, the poverty-achievement correlations were overall weaker in the elementary subset than the correlations displayed in all schools combined.

## Research Question 3

In 2010, thirty-five legislatures recognized poverty as a factor that affects student achievement and apportioned funding increases for students in poverty.<sup>331</sup> The Florida

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<sup>330</sup> Donka Mirtcheva and Lisa Powell, "Participation in the National School Lunch Program: Importance of School-level and Neighborhood Contextual Factors," *Journal of School Health* 79, no. 10 (2009): 485-94; Kevin Welner, "Non-Evidence about Tracking: Critiquing the New Report from the Fordham Institute," *Teachers College Record*, December (2009); Carol Pogash, "Free Lunch Isn't Cool So Some Students Go Hungry," *New York Times*, March 1, 2008.

<sup>331</sup> Table 3-1.

legislature did not.<sup>332</sup> The political priorities have been dissimilar among state legislatures; so too have the compensatory practices related to education funding greatly varied. The poverty weights calculated in foundation funding formulas ranged from 0.05 to .25,<sup>333</sup> allocating supplements to base level funding for students in poverty. The average poverty weight utilized in foundation formulas was 0.193. This poverty weight was applied to the 2010-2011 FEFP in the same manner as the other program cost factors in the FEFP in order to establish supplementary funding for low-income students in Florida. The additional funding that would have been generated for poor students from the theoretical poverty weight was \$975,311,823.<sup>334</sup>

#### **Research Question 4**

Numerous adequacy studies have been conducted in the United States in recent decades, making attempts to establish the quantity of fiscal resources necessary to provide an adequate education.<sup>335</sup> There are four approaches that have been regularly utilized to complete adequacy studies, including the Professional Judgment approach, the Evidence-Based approach, the Successful Schools approach, and the Statistical Analysis approach, yet very few studies have employed all four approaches to comprehensively substantiate study conclusions. The adequacy study conducted in 2007 for Rhode Island by R.C. Wood and Associates utilized all four methodologies.<sup>336</sup>

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<sup>332</sup> Ibid.

<sup>333</sup> Ibid.

<sup>334</sup> Table 4-5.

<sup>335</sup> Deborah Verstegen, "Has Adequacy Been Achieved? A Study of Finances and Costs a Decade After Court Ordered Reform," *Journal of Education Finance* 32, no. 3 (2007): 304-327.

<sup>336</sup> R.C. Wood and Associates, State of Rhode Island Education Adequacy Study, Final Report (2007).

The compensatory practices indicated in the Rhode Island study were applied as theoretical poverty weights to the 2010-2011 FEFP. The poverty weights of 25 percent and 40 percent described in the study were theoretically applied and calculated in the same manner as the other program cost factors in the FEFP. The additional funding generated from the 25 percent poverty weight was \$1,267,259,596, and the additional funding generated from the 40 percent poverty weight was \$2,043,470,009.

### **Conclusions**

It is commonly argued that the burdens of poverty have a negative effect on student success in schooling. Historically in the United States, efforts have been made to address the ills of poverty and its impact in classrooms, and supplementary funding has been legislated for poor students.<sup>337</sup> It is debatable whether monetary increases can be directly associated to improvements in student achievement.<sup>338</sup> Determining the degrees to which poverty and achievement are associated can be crucial information for policymakers, and a review of the compensatory practices of state legislatures, juxtaposed with Florida's education formula, provides insight.

Children who grow up in an environment surrounded by affluence have more access to resources and extensive exposure to diverse experiences compared to their impoverished peers. Parents with lower levels of formal education completion are more often unemployed, and provide less assistance to their children in regards to

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<sup>337</sup> Table 3-1.

<sup>338</sup> Christopher Jencks, *Inequality: A Reassessment of the Effect of Family and Schooling in America* (New York: Basic Books, 1972); Eric Hanushek, "The Impact of Different Expenditures on School Performance," *Educational Researcher* 18, no. 4 (1989): 45-51.

schooling.<sup>339</sup> Students from poor families have less contact with reading materials and less access to computers,<sup>340</sup> and they have lower levels of school attendance.<sup>341</sup> The lack of learning capital present in the lives of poor children has a negative impact on academic achievement,<sup>342</sup> and concentrated poverty in schools exacerbates the issue.<sup>343</sup> Schools comprised of large populations of poor students are more likely to have lower average achievement levels than other schools.<sup>344</sup>

Resources intended to compensate for poverty have been allocated from multiple sources. The federal government has recognized challenges associated with poverty and schools and has enacted programs to address the concerns. Head Start, Title I, and NSLP are some federal programs aimed at mitigating the effects of poverty in schools.<sup>345</sup> At the state level, numerous legislatures have activated education funding

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<sup>339</sup> National Center for Children in Poverty, November 2008 Report. Low-Income Children in the United States: National and State Trend Data, 1997-2007, [http://www.nccp.org/publications/pdf/text\\_851.pdf](http://www.nccp.org/publications/pdf/text_851.pdf). U.S. Census Bureau. 2003b. "Figure 4. Poverty Rates in Families by Family Type and Presence of Workers, 2002." Current Population Survey, 2002 and 2003 Annual Social and Economic Supplements. Washington D.C.: U.S. Department of Commerce.

<sup>340</sup> National Center for Children in Poverty, November 2008 Report. Low-Income Children in the United States: National and State Trend Data, 1997-2007, [http://www.nccp.org/publications/pdf/text\\_851.pdf](http://www.nccp.org/publications/pdf/text_851.pdf)

<sup>341</sup> U.S. Census Bureau. 2003d. "Low Income Uninsured Children by State: 2000, 2001, and 2002." Current Population Survey, 2000, 2001 and 2002 Annual Social and Economic Supplements. Washington D.C.: U.S. Department of Commerce.

<sup>342</sup> Deborah Land and Nettie Letgers, "The Extent and Consequences of Risk in U.S. Education," in *Educating At-Risk Children: One Hundred-First Yearbook of the National Society for the Study of Education, Part II*, ed. S. Stringfield and D. Land (Chicago: University of Chicago Press, 2002): 1-28.

<sup>343</sup> Laura Lippman, Shelley Burns, Edith McArthur, (1996). *Urban Schools: The Challenge of Location and Poverty*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement, Kern Alexander and Richard Salmon, *Public School Finance* (Boston: Allyn & Bacon, 1995).

<sup>344</sup> Robert Slavin, Nancy Karwiet, and Nancy Madden, *Effective Programs for Children at Risk* (Boston: Allyn and Bacon, 1989).

<sup>345</sup> U.S. Department of Health and Human Services, Administration for Children and Families, Office of Head Start <http://www.acf.hhs.gov/programs/ohs/about/index.html>; U.S. Department of Education, Office

formulas that provide additional fiscal resources for students in poverty.<sup>346</sup> There has been considerable debate over the impact of money on student achievement, and there is no parallel and consistent correlation between amounts of money spent and levels of educational success.<sup>347</sup> The measure of fiscal resources necessary to ensure that children achieve an adequate educational standard is the basis of numerous adequacy studies.

This study was successful in quantifying correlations between poverty and student achievement in Florida by utilizing FRPL as a proxy for poverty and FCAT as an indicator of student achievement. Correlation results ranging from -0.761 to -0.855 demonstrated strong associations between these variables.<sup>348</sup> Over the span of years observed, as poverty levels increased in Florida schools, 76 percent to 86 percent of the corresponding student achievement scores decreased. These connections provided measured relationships between poverty and student achievement.

Reviewing the compensatory policies evident in education funding mechanisms across the nation provided foundation for analysis. Thirty-five state legislatures employed a type of compensatory provision into the funding formula for education. The average poverty weight that was applied directly to foundation formulas by state legislatures was theoretically applied to the FEFP to determine the fiscal consequence.

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of Elementary and Secondary Education, <http://www2.ed.gov/programs/titleiparta/index.html>; U.S. Department of Agriculture, Food and Nutrition Service, National School Lunch Program, <http://www.fns.usda.gov/cnd/lunch/aboutlunch/NSLPIFactSheet.pdf>

<sup>346</sup> Table 4-5.

<sup>347</sup> 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): 5-14.

<sup>348</sup> Table 4-4.

This study did not analyze the politics involved in establishing the individual program cost factors in the FEFP, and no conclusion or recommendation asserts that the theoretical poverty weight be utilized. The additional cost of including the average poverty weight in the FEFP was calculated at \$975,311,823.<sup>349</sup> The poverty weight applied in this scenario increased the total education funding in 2010-2011 by 5.39 percent.

Adequacy studies have often included compensatory recommendations related to students in poverty. The 2007 Rhode Island adequacy study indicated that compensatory practices across the country validated a poverty weight of 25 percent.<sup>350</sup> The second rate utilized in the study (40 percent) was based on a variety of research that proposed that the current standard of practice (25 percent) underestimated the additional costs for students in poverty.<sup>351</sup> The recommendations and research conducted from the Rhode Island adequacy study were theoretically applied to the FEFP. Every adequacy study is unique to the state that it applies to, and no conclusion or recommendation asserts that the exact poverty weights recommended in the Rhode Island be utilized in Florida. The additional funding generated in the FEFP by employing the poverty weight of 25 percent was \$1,267,259,596, and the increase in funding displayed from the poverty weight of 40 percent was \$2,043,470,009.<sup>352</sup> The 25 percent poverty weight increased overall education funding in Florida by 7 percent, and the 40 percent poverty weight increased funding by 11.3 percent.

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<sup>349</sup> Table 4-5.

<sup>350</sup> R.C. Wood and Associates, State of Rhode Island Education Adequacy Study, Final Report (2007).

<sup>351</sup> Ibid.

<sup>352</sup> Table 4-5.

It is certain that students experiencing poverty exhibit lower levels of achievement and require more resources to be educated to an established educational standard. Some legislatures, including Florida, do not specifically account for poverty in the process of distributing education funding. A review of education finance research and adequacy studies displays compensatory practices across the nation. Applying these practices to Florida's education finance program reveals various funding implications.

As a matter of public policy, vertical equity is a crucial element of education funding in the state of Florida. Ideally, increased funding for poor students could be realized by the initiation of a poverty weight into the FEFP by the Florida legislature. Even if no new monies were introduced into the overall education funding system, it is recommended that a very modest poverty program cost factor be introduced into the FEFP. This may require temporary decreases in funding for other students, but the finance program would be improved, and a catalyst for more equitable and improved funding for poor students would be in place.

### **Recommendations for Future Research**

In accordance with NCLB, all state legislatures conduct standardized testing to measure student achievement.<sup>353</sup> In addition, each legislature operates a specific measure of poverty in its schools. Future research could extend beyond Florida, revealing the achievement-poverty correlations in all other states. Differences in testing and poverty measures could make comparisons between states problematic, but

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<sup>353</sup> F.S. § 1008.22

individual state correlations would provide data concerning the relationships between poverty and student achievement.

This study utilized the compensatory recommendations from the 2007 Rhode Island adequacy study. This adequacy study was examined because it is a comprehensive and contemporary study that utilized all four methodologies of determining education adequacy. Two of the methodologies, the Successful Schools Model and the Advanced Statistical/Cost Function Model, recommended a poverty weight of 25 percent, and the Successful Schools Model also recommended a poverty weight of 40 percent. Other adequacy studies conducted have utilized different compensatory recommendations regarding resource allocation to students in poverty. Various recommendations from all other adequacy studies could be theoretically applied to the FEFP to determine the funding implications.

The current economic climate had a notable impact on this study. As FRPL percentages vary with changing economic conditions, new opportunities for study become evident. What are the effects of the recession on education funding and student achievement in Florida? Are poor students underserved?

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## BIOGRAPHICAL SKETCH

Jeremy Allen Moore was born in Atlanta, Georgia, and grew up in the towns of Punxsutawney, Pennsylvania and Ormond Beach, Florida. He completed high school studies at Seabreeze High in Daytona Beach in 1993. Jeremy continued his education at the University of Florida and has always been an avid Gator fan. He graduated with a Bachelor of Arts in education in 1997, earned a Master of Education degree in 1998, and completed a Specialist degree in educational leadership in 2002. In December of 2011, Jeremy received a Doctor of Philosophy degree in educational leadership from the University of Florida.

Working in schools has been a passion and a successful career for Jeremy. He has been a teacher at the elementary and middle school levels, coached high school soccer, and worked as a school administrator. He served as an assistant principal at Maitland Middle School and at Olympia High School near Orlando, Florida. In 2006, Jeremy began as the Principal of Brookshire Elementary School in Winter Park, Florida, and after four years, moved to Grand Cayman to serve as the Secondary School Principal of the Cayman International School.

Jeremy was fortunate to meet Tiffany Pascuzzi and they married in April of 2011. They enjoy living in Grand Cayman, plan to have children, and are excited about where the future will lead them. Jeremy's long term career goals may include posts as a Director at various international schools around the globe, serving as an executive school leader and superintendent in large urban school districts, writing, consulting, and teaching at the university level.