

# **Long Overdue: An Adequacy Cost Study in West Virginia**



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This white paper is the product of my academic research. The views expressed here are my own and do not represent the views of West Virginia University.

## Introduction

“The people have been leaving West Virginia in droves [because] elsewhere they could educate their children, and here they could not.”<sup>1</sup> So said a state delegate. In 1862.

More than 150 years later, West Virginia is still losing population, faster than any other state.<sup>2</sup> The quality of public education remains a driving factor, accelerating the economic, political, and social reasons for the exodus:

1. West Virginia workers are among the least educated in the nation. The state has had the lowest percentage college degree holders for more than a decade.<sup>3</sup>

Percent of Adults 25 to 64 with a Bachelor's Degree or Higher			
Year	WV %	US Avg. %	WV Rank
2005	18.65	29.17	50
2006	18.20	28.94	50
2007	18.97	29.38	50
2008	18.75	29.52	50
2009	19.34	29.76	50
2010	19.3	29.9	50
2011	20.4	30.1	50
2012	20.4	30.63	50
2013	20.48	31.10	49
2014	21.0	31.51	50
2015	20.95	31.97	50

Figure 2 US Census Bureau, *American Community Survey 2005-15*

It is well-documented that a low-educated workforce discourages investment and impedes economic growth.<sup>4</sup>

2. West Virginia ranked 49<sup>th</sup> among states in voter turnout over the past three presidential elections.<sup>5</sup>

STATE	TURNOUT	RANK '16 ('12)	STATE	TURNOUT	RANK '12 ('08)
Kentucky	59.7%	35 (39)	Rhode Island	58.6%	35 (31)
Alabama	59.3%	36 (32)	Kansas	58.1%	36 (28)
California	58.4%	37 (42)	Nevada	57.2%	37 (43)
Indiana	57.9%	38 (41)	South Carolina	57.1%	38 (42)
Utah	57.7%	39 (40)	Utah	56.0%	39 (48)
Nevada	57.3%	40 (38)	Indiana	56.0%	40 (38)
New York	57.3%	41 (44)	California	55.9%	41 (33)
South Carolina	57.3%	42 (37)	Kentucky	55.9%	42 (40)
Mississippi	56.5%	43 (29)	New Mexico	54.9%	43 (39)
Arizona	56.2%	44 (45)	New York	53.6%	44 (41)
New Mexico	55.2%	45 (43)	Arizona	53.3%	45 (46)
Oklahoma	53.2%	46 (49)	Tennessee	52.6%	46 (44)
Arkansas	53.1%	47 (47)	Arkansas	51.0%	47 (49)
Tennessee	52.0%	48 (46)	Texas	50.1%	48 (47)
Texas	51.6%	49 (48)	Oklahoma	49.6%	49 (45)
West Virginia	50.8%	50 (50)	West Virginia	46.8%	50 (50)
Hawaii	43.0%	51 (51)	Hawaii	44.5%	51 (51)

Figure 1 *Nonprofit Vote*, U.S. Elections Project

“The relationship between education and voter turnout ranks among the most extensively documented correlations in American survey research.”<sup>6</sup>

3. West Virginians, and especially West Virginia women, are also among the least civically engaged in the nation.<sup>7</sup>

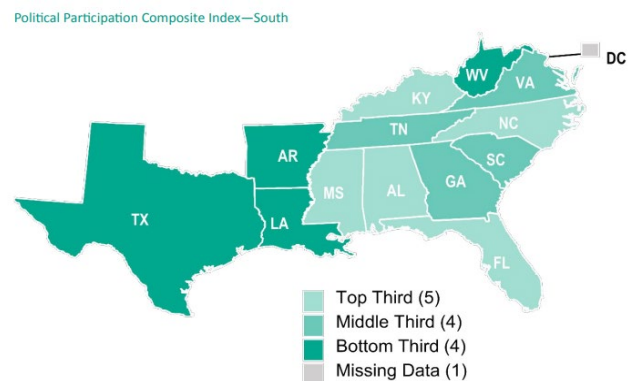
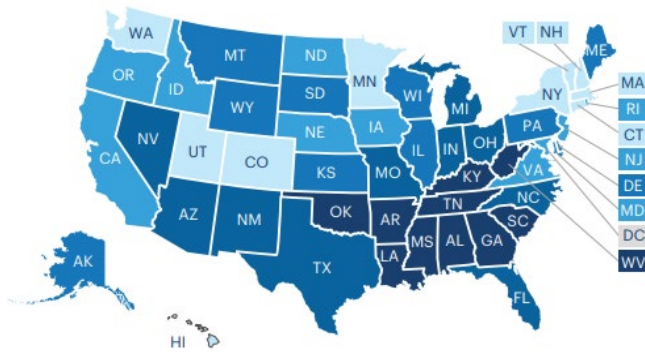


Figure 3 *Women's Status on the Political Participation Composite Index and Its Components*, Institute for Women's Policy Research (2016)

Empirical analysis confirms that “educational attainment, both at the post-secondary and secondary levels, has large and independent effects on most measures of civic engagement and attitudes.”<sup>8</sup>

4. West Virginia has the nation's highest adult obesity rate, the highest rate of overdose deaths, highest incidence of cardiovascular disease and diabetes, and the highest share of adults who report being in frequent mental and physical distress.<sup>9</sup>

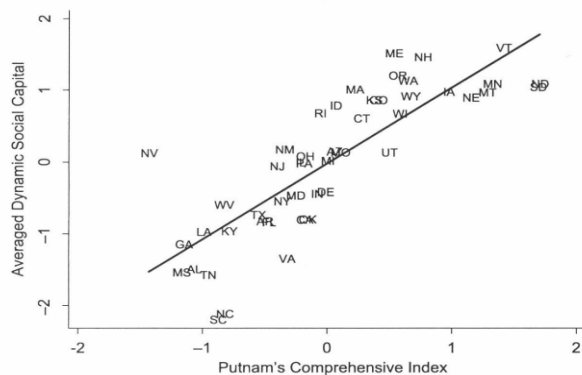


**RANK:** 1 to 10 11 to 20 21 to 30 31 to 40 41 to 50 Not Ranked

**Figure 4** *America's Health Rankings 2017*, United Health Foundation

Research has consistently established associations between educational attainment and health outcomes.<sup>10</sup>

5. West Virginia places in the bottom quartile of states in terms of social capital—the common networks and interpersonal relationships necessary for a society to flourish.



**Figure 5** Daniel Hawes, *Social Capital in the 50 States: Measuring State-Level Social Capital 1986-2004* (2013)

Social capital is strongly correlated with educational attainment.<sup>11</sup>

The state delegate who forewarned the endemic problems of educational failures was Rev. Gordon Battelle, chair of the education committee during West Virginia's first constitutional convention in 1862. That year, Rev. Battelle led the other framers in adopting a constitution guaranteeing "a thorough and efficient" education for all West Virginia children—perceiving "the greatest need of the proposed new state was an intelligent body politic."<sup>12</sup>

The need for an intelligent citizenry is no less urgent today. The question now is not *whether* to invest in education, but *how much*? In truth, no one really knows the answer to that question because there has never been a comprehensive, nonpartisan, research-based study of the cost of providing a constitutionally adequate education to all West Virginia children.

That no such study has ever been undertaken in West Virginia is more than just unfortunate, it amounts to constitutional malpractice.

## The Fundamental Constitutional Right to an Adequate and Equitable Education

**The Fundamental Constitutional Right.** Article 12, section 1 of the West Virginia Constitution states: "The Legislature shall provide, by general law, for a thorough and efficient system of free schools." This clause, as interpreted by the West Virginia Supreme Court, makes "education a fundamental constitutional right in this State."<sup>13</sup> Fundamental rights warrant the highest degree of constitutional protection.<sup>14</sup> And the fundamental right to education ranks at the very top: "public education is a Prime function of our State government," declared



the court, “ahead of *every other State function*.”<sup>15</sup>

**An Adequate Education.** Four decades ago, when the West Virginia Supreme Court recognized education as a fundamental right in *Pauley v. Kelly*, it became the first state high court in the nation to define, in substantive terms, a “thorough and efficient” education:

“It develops, as best the state of education expertise allows, the minds, bodies and social morality of its charges to prepare them for useful and happy occupations, recreation and citizenship, and does so economically.”

A ‘thorough and efficient’ education, the court further explained, must cultivate **eight capacities** in children:

1. literacy;
2. ability to add, subtract, multiply and divide numbers;
3. knowledge of government to the extent that the child will be equipped as a citizen to make informed choices among persons and issues that affect his own governance;
4. self-knowledge and knowledge of his or her total environment to allow the child to intelligently choose life work to know his or her options;

5. work-training and advanced academic training as the child may intelligently choose;
6. recreational pursuits;
7. interests in all creative arts, such as music, theatre, literature, and the visual arts;
8. social ethics, both behavioral and abstract, to facilitate compatibility with others in this society.<sup>16</sup>

These eight capacities align with public opinion regarding the goals of public schools:

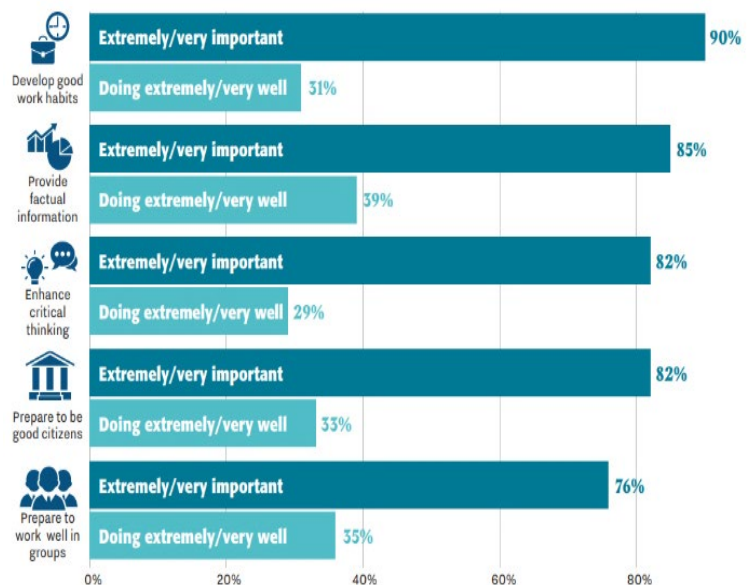


Figure 6 The 48th Annual PDK Poll of the Public’s Attitudes Toward the Public Schools (2016)

To cultivate these capacities, a thorough and efficient (or **adequate**) education necessarily requires “good” facilities, teachers, and curriculum as well as accountability mechanisms and “high quality educational standards.”<sup>17</sup> These educational *inputs*, the court reasoned, are vital to guaranteeing that all children have a fair and meaningful opportunity to achieve the educational *outcomes*—the eight capacities that enable children to function in “useful and happy

occupations, recreation and citizenship”—mandated by the West Virginia Constitution.

**An Equitable Education.** In construing the state constitution, the West Virginia Supreme Court applied the thorough and efficient clause “harmoniously” with the equal protection clause.<sup>18</sup> The mutual application of these clauses obligates the state to reduce per pupil funding disparities between school districts caused by differences in the yield of county levy taxes.<sup>19</sup> Although the equal protection clause does not require strictly equal per pupil expenditures across all school districts, it does obligate the state to ensure “equality in substantive educational offerings and results, no matter what the expenditure may be.”<sup>20</sup>

In other words, while the state constitution does not mandate absolute *fiscal equity between schools*, it does mandate educational *needs-based equity between students* such that school funding meets the diverse needs of differently-situated children to achieve the thorough and efficient constitutional benchmarks.

Altogether, the West Virginia Constitution imposes an affirmative duty on the state to protect children’s fundamental right to an equitable and adequate education. Despite progress towards fiscal equity, much work remains to improve needs-based equity and adequacy in West Virginia’s public schools. An adequacy cost study is a necessary first step in that direction.

## What is an Adequacy Cost Study?

An adequacy cost study is an empirical study that assesses the *actual* costs of providing a constitutionally adequate education to all elementary and secondary students.

No such systematic, research-based analysis for determining actual education costs has ever been conducted in West Virginia. Rather, the legislature has approved a basic foundation program requiring each of the 55 county school districts to levy property taxes aimed at generating revenue to fund a minimum education in each district based on that district’s resource costs, such as teacher salaries, curricular materials, transportation, and operating costs to meet enrollment.<sup>21</sup>

The amount obtained through levy property tax collections constitutes the district’s local share which is subtracted from the district’s foundation program allowance.<sup>22</sup> State basic aid makes up the difference. Essentially, state basic aid supplements the amount actually raised in districts where the levy property taxes do not yield the foundation allowance for that school district. State basic aid has comprised on average 55% of total K-12 revenue in the past decade.<sup>23</sup> As shown in the table below, however, there is considerable variation in state aid to districts.<sup>24</sup>

**WV Public School Support Program  
Total Allowance, Local Share, & Basic State Aid  
For the 2018-19 Year**

School District	Foundation Allowance	Local Share	State Share
Doddridge	7,433,804	7,433,804	0
Monongalia	67,620,142	27,960,500	38,707,023
Kanawha	153,319,025	51,651,186	101,767,725
Jefferson	52,555,665	15,897,457	36,658,208
Clay	12,169,897	1,267,544	10,902,353

Figure 7 West Virginia Department of Education

Although the state’s contribution can compensate for variations in local fiscal capacity, it may not be fully compensating for variations in costs driven by the percentage of special-needs students, regional costs of living, and other fixed costs.

More to the point, the foundation program allowance itself is primarily based on (i) the amount spent in previous years, with adjustments perhaps made for inflation, and (ii) changes in enrollment that affect the number of personnel allowed to be funded for each district. The foundation allowance has never been based on a comprehensive, rigorous assessment of the actual costs of the resources, services, and support all children need to receive a constitutionally adequate education. The foundation allowance simply has not been calibrated towards the constitutional benchmarks. That is the purpose of an adequacy cost study.

### Summary of Adequacy Cost Studies in Other States

Over the past 25 years, there have been more **100 adequacy cost studies** commissioned in

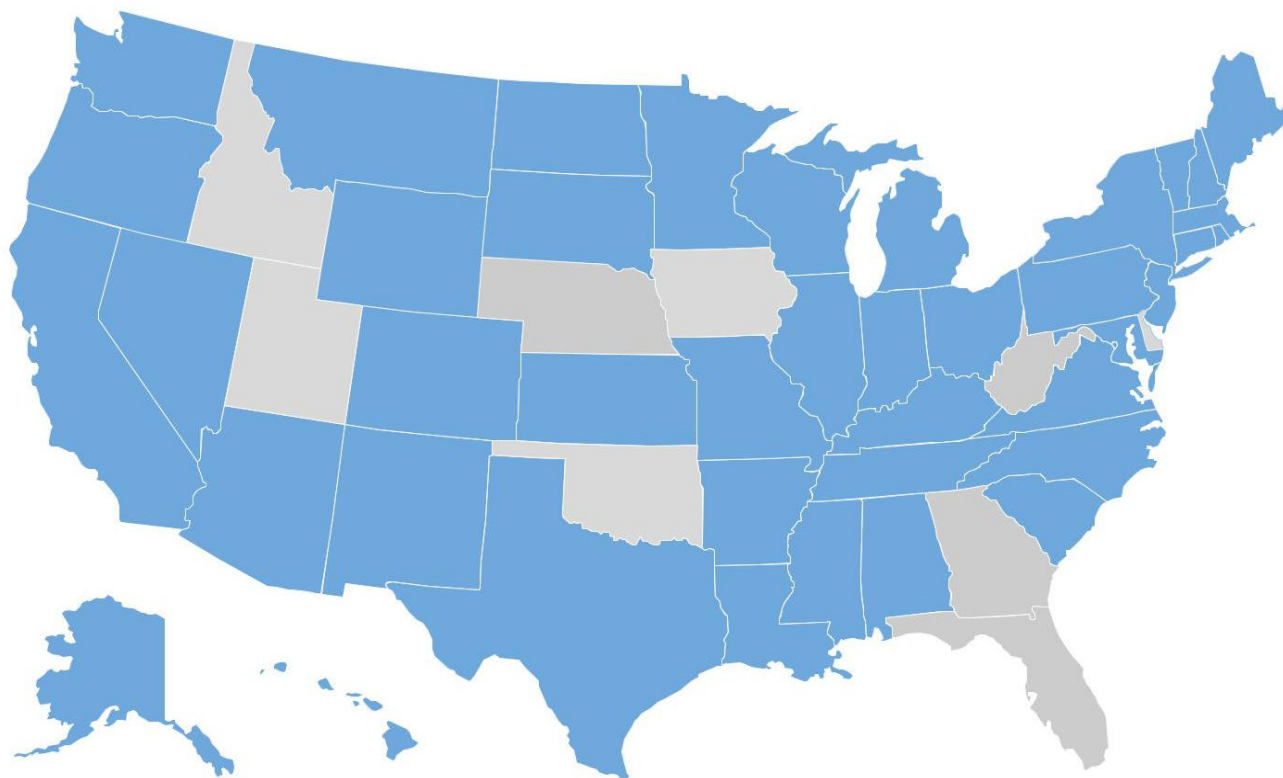
### **41 states and the District of Columbia.**<sup>25</sup>

Many states have conducted multiple studies over time.

All of the states bordering West Virginia—Kentucky, Ohio, Pennsylvania, Maryland, and Virginia—have commissioned adequacy studies; in some instances bordering states have conducted multiple studies.

Most of the adequacy cost studies completed between 2003 and 2018 have been led by two firms—Augenblick, Palaich & Associates (Augenblick) and Picus Odden & Associates (Picus Odden)—generally by the same leadership staff even though the firms’ names have changed over time.

A recent study in Kansas and one underway in North Carolina has employed the services of WestEd, a research agency.



**Figure 8** State Adequacy Cost Studies (1991-2018)

<b>State</b>	<b>Year</b>	<b>Performed By:</b>	<b>Commissioned By:</b>
Alabama	2014	Augenblick	State Dept. of Education
Alaska	2001	State Dept. of Education	Legislature
Arizona	2004	Picus Odden	Stakeholder Group
Arkansas	2003	Picus Odden	Legislature
Arkansas	2006	Picus Odden	Legislature
Arkansas	2008	Bureau of Legislative Research	Legislature
Arkansas	2010	Bureau of Legislative Research	Legislature
Arkansas	2012	Bureau of Legislative Research	Legislature
Arkansas	2014	Bureau of Legislative Research	Legislature
Arkansas	2016	Bureau of Legislative Research	Legislature
California	2006	American Institutes for Research	Government Agency
California	2007	Public Policy Institute of California	Government Agency
California	2018	American Institutes for Research	Stakeholder Group
Colorado	2003	Augenblick	Stakeholder Group
Colorado	2006	Augenblick	Stakeholder Group
Colorado	2011	Augenblick	Plaintiffs
Colorado	2013	Augenblick	Stakeholder Group
Connecticut	2005	Augenblick	Stakeholder Group
D.C.	2013	Augenblick & the Finance Project	Government Agency
Hawaii	2005	State Dept. of Education	State Dept. of Education
Illinois	1996	Coopers & Lybrand	State Board of Education
Illinois	1998	Illinois State Board of Education	State Board of Education
Illinois	2001	Augenblick	Government Agency
Illinois	2010	National Louis University	Stakeholder Group
Illinois	2017	Picus Odden	Legislature
Indiana	2002	Augenblick	Stakeholder Group
Kansas	2001	Augenblick	Legislature
Kansas	2006	Legislative Post Audit Division	Legislature
Kansas	2018	Lori Taylor & WestEd	Legislature
Kentucky	2003	Picus Odden	State Board of Education
Kentucky	2003	Picus Odden	State Board of Education
Kentucky	2004	Deborah Versteegen	Stakeholder Group
Louisiana	2001	Augenblick	State Board of Education
Maine	2004	Management, Analysis & Planning, Inc.	Legislature
Maine	2014	Picus Odden	Legislature
Maryland	2001	Augenblick	Legislature and Stakeholder Group
Maryland	2017	Augenblick, Picus Odden/Univ. of Maryland	Legislature and Stakeholder Group
Massachusetts	1991	Massachusetts Business Alliance for Education	Stakeholder Group
Massachusetts	2003	Deborah Versteegen	Plaintiffs
Massachusetts	2003	John Myers	Plaintiffs
Michigan	2018	Augenblick & Picus Odden	Stakeholder Group
Minnesota	2004	Management, Analysis & Planning, Inc.	Government Agency
Minnesota	2006	Augenblick	Stakeholder Group
Mississippi	1993	Augenblick	State Dept. of Education
Missouri	2003	Augenblick	Stakeholder Group
Montana	2002	Augenblick	Stakeholder Group
Montana	2005	R. Craig Wood & Associates	Legislature
Montana	2007	Augenblick	Stakeholder Group
Nebraska	2003	Augenblick	Stakeholder Group
Nevada	2006	Augenblick	Legislature
Nevada	2014	Augenblick	State Dept. of Education
New Hampshire	1998	Augenblick	State Dept. of Education
New Jersey	1998	Picus Odden	Legislature
New Jersey	2006	Augenblick/State Dept. of Education	Legislature
New Jersey	2007	Picus Odden	Legislature
New Mexico	2008	American Institutes for Research	State Dept. of Education
New York	2000	Duncombe & Lukemeyer	Legislature
New York	2004	American Institutes for Research/Management, Analysis & Planning, Inc.	Stakeholder Group
New York	2004	Standard and Poor's	Stakeholder Group
North Carolina	2018-19	WestEd	State by court order
North Dakota	2008	Picus Odden	Government Agency
North Dakota	2014	Picus Odden	Government Agency
Ohio	1997	Augenblick	Legislature
Ohio	2009	Picus Odden	State Dept. of Education
Oregon	1997	Management, Analysis & Planning, Inc.	Stakeholder Group
Oregon	2000	Oregon Quality Education Commission	Legislature
Pennsylvania	2007	Augenblick	Government Agency
Rhode Island	2007	R. Craig Wood & Associates	State Board of Education
South Carolina	2000	Augenblick	Legislature
South Dakota	2006	Augenblick	Stakeholder Group
Tennessee	2004	Augenblick	Stakeholder Group
Texas	2001	Reschovsky & Imazeki	Stakeholder Group
Texas	2012	Picus Odden	Stakeholder Group
Vermont	2016	Picus Odden	Plaintiffs in a lawsuit
Virginia	2018-19	Augenblick	Legislature
Washington	2003	Rainer Institute	Legislature
Washington	2006	Picus Odden	Rainer Institute
Wisconsin	1997	Reschovsky & Imazek	Government Agency
Wisconsin	2002	Institute for Wisconsin's Future	Stakeholder Group
Wisconsin	2007	Picus Odden	Stakeholder Group
Wyoming	1997	Management, Analysis & Planning, Inc.	Stakeholder Group
Wyoming	2005	Picus Odden	Legislature
Wyoming	2010	Picus Odden	Legislature
Wyoming	2015	Augenblick	Legislature
Wyoming	2018	Augenblick	Legislature



As reflected in the table, adequacy cost studies have been commissioned by legislatures or state boards/departments of education in response to high court or lower court rulings in cases challenging the constitutionality of school funding. In other instances, legislatures or other government agencies have, on their own initiative, commissioned studies to determine the actual costs of meeting state proficiency standards. A number of adequacy cost studies have also been commissioned by private organizations or stakeholder groups, often with the support of a charitable foundation.<sup>26</sup>

## Adequacy Cost Study Methods

Researchers have developed four adequacy cost study methodologies:

1. The **evidence based method** uses published research studies to develop education delivery models from which aggregate and per pupil costs can be calculated. Rather than rely



on a single educational reform strategy, this method integrates a variety of research proven input strategies to assess resource levels and specify programs for their most efficient use. The evidence based method determines both a foundational base cost and adjustments or weights for special needs students.

2. The **professional judgment method** leverages the expertise of panels of experienced educators, administrators, and business leaders to determine the resources, services, and supports necessary to meet the educational



needs of schools with varying student demographic characteristics. The costs of the educational inputs identified by the panel of experts are then calculated by economists. Professional judgment method identifies both a foundational base cost and weights for special needs students.

3. The **successful schools method** determines an adequate per pupil base cost amount by using the actual expenditure levels of schools or districts that outperform other schools or



districts on state performance objectives. The working assumption of this method is that every school or district needs at least the same level of base funding that is available to the most successful schools or districts. Because the successful schools method critically examines only the base spending amount, adjustments for special needs students can be limited, due in part to expenditure data restrictions on special needs students.

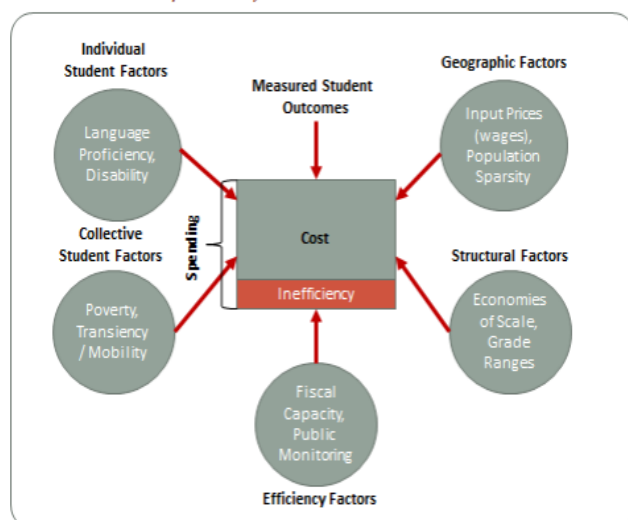
4. The **cost function method** is an econometric method that uses regression techniques to derive actual costs from observable data on the relationship between educational outcomes



and expenditures, while statistically controlling for other factors. The cost function method determines how those costs differ given school district and student characteristics and the relevant teacher labor market. This method thus tends to require detailed demographic, performance, and expenditure data. Where that information is

available, this method can be used to create a cost index for each school district to indicate the relative cost of achieve the desired educational outcomes. Those costs may be higher, for example, in small, rural communities with high percentages of socioeconomically disadvantaged students than in districts with high percentages of more advantaged students.

*Components of the Education Cost Function*



**Figure 9** Bruce Baker & Jesse Levin, *Educational Equity, Adequacy, and Equal Opportunity in the Commonwealth: An Evaluation of Pennsylvania's School Finance System* (2014)

The four methods can be grouped primarily into two:

- (i) The evidence based and professional judgment methods use a **resource cost method**, an input-oriented analysis that works forward, identifying the educational inputs that would yield desired educational outcomes for certain student populations.
- (ii) The successful schools and cost function methods use an **education cost function**, an outcome-oriented analysis that works backward, starting with measured educational outcomes and then exploring aggregate or specific spending on educational inputs.<sup>27</sup>

Researchers frequently combine the resource cost method and education cost function approaches to strengthen the validity and reliability of their findings.<sup>28</sup>

## The Case for an Adequacy Cost Study in West Virginia

There are at least three independent reasons to conduct an adequacy cost study in West Virginia.

1. The West Virginia Constitution demands an adequacy cost study. The West Virginia Supreme Court has said as much explicitly:

“

The formula must be scrutinized facially. Is the basic foundation program, the minimum level of funding guaranteed by the State, constitutionally sufficient to meet the county's education needs?

Second, the formula must be examined as it is applied. Is the total funding actually received by the county, including the local share from its regular levy, constitutionally sufficient to meet the county's education needs?<sup>29</sup>

”

The State of West Virginia has not conducted a rigorous adequacy cost study to answer these essential questions, despite their constitutional significance.

In this respect, the Legislature and State Board of Education lack the most basic information they need to fulfill their constitutional duties. The Legislature has “an absolute and mandatory duty” to maintain a thorough and efficient education system.<sup>30</sup> The State Board of Education, “charged with the general supervision of our state's

education system, has a duty to ensure that the constitutionally mandated educational goals of quality and equality are achieved.”<sup>31</sup> In furtherance of those goals, “the State Board is empowered to take *whatever steps are necessary* to fulfill its obligation.”<sup>32</sup>

The State simply cannot discharge its constitutional duties to provide an adequate education without knowing how much it actually costs.

2. By most objective assessments available, overall student performance is low in both absolute and relative terms, suggesting that West Virginia children are not receiving a constitutionally adequate education.

According to the State’s own assessments, proficiency in math, reading, science, and social studies fell precipitously in the last decade.

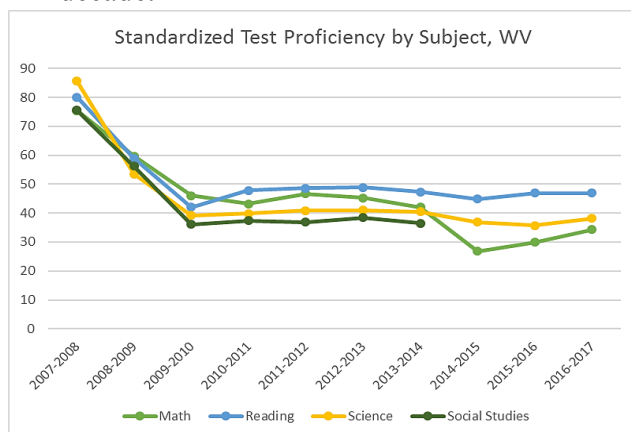


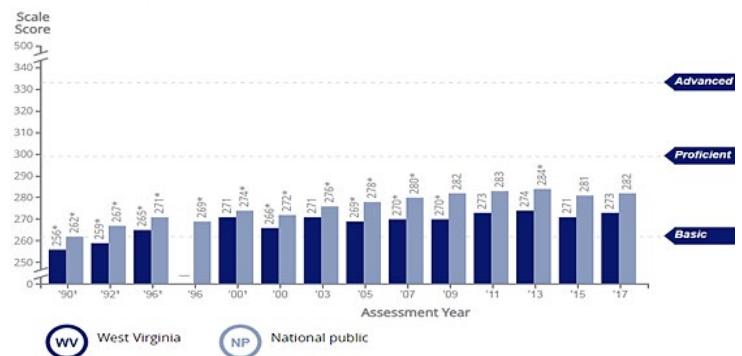
Figure 10 West Virginia Department of Education

Although the misalignment between content standards and standardized testing may have contributed to that marked decline, the reality is that less than half of West Virginia students achieve proficiency in core subjects by the state’s own assessments of its own content standards.

As measured by the National Association of Educational Progress (NAEP), West Virginia students Grades 4, 8, and 12 have scored lower than the national average in math and reading for more than a decade.

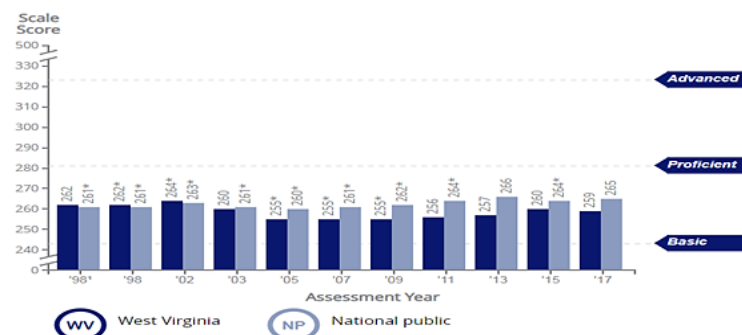
#### GRADE 8 | MATHEMATICS

Average scale scores for grade 8 mathematics, by [TOTAL] and jurisdiction: 1990, 1992, 1996, 2000, 2003, 2005, 2007, 2009, 2011, 2013, 2015, and 2017.



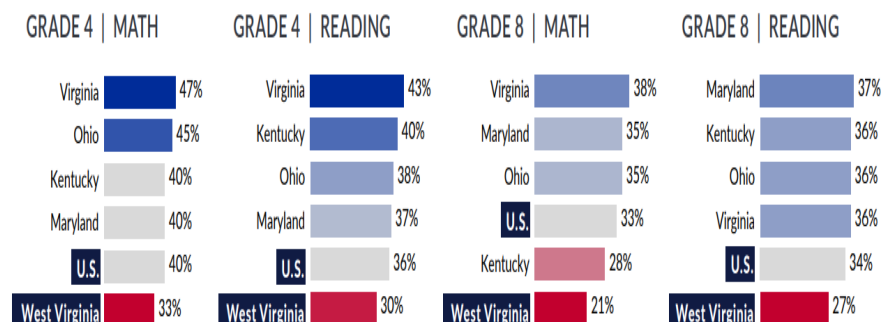
#### GRADE 8 | READING

Average scale scores for grade 8 reading, by [TOTAL] and jurisdiction: 1998, 2002, 2003, 2005, 2007, 2009, 2015, and 2017.



For one point of comparison, on average Grade 8 students in more than 40 states—including neighboring states of Kentucky, Virginia, Maryland, and Ohio—outperformed West Virginia Grade 8 students in math and reading, in some instances by significant margins.

#### National NAEP Proficiency Rates, Selected States | 2015



*Education Week's* annual “Quality Counts” assessment paints a dire picture of the quality of West Virginia public schools on two of its metrics: chance for success and K-12 achievement. The chance-for-success index combines information from 13 indicators regarding the role that education plays in promoting positive outcomes across an individual’s lifetime. The K-12 achievement index examines 18 distinct achievement measures relating to math and reading performance, graduation rates, and AP exams, assigning equal weight to current levels of performance and changes over time and considering poverty-based achievement gaps.

Year	K-12 Achievement Grade	K-12 Achievement Rank	Chance for Success Grade	Chance for Success Rank
2018	D-	41	C-	48
2017	D	48	C-	48
2016	D	48	C-	45
2015	D-	47	C-	47
2014	D-	47	C-	46
2013	F	49	C-	46
2012	F	49	C-	47
2011	F	50	C-	46
2010	F	49	C-	47
2009	F	49	C-	46
2008	F	49	C-	46

Figure 11 Education Week Quality Counts

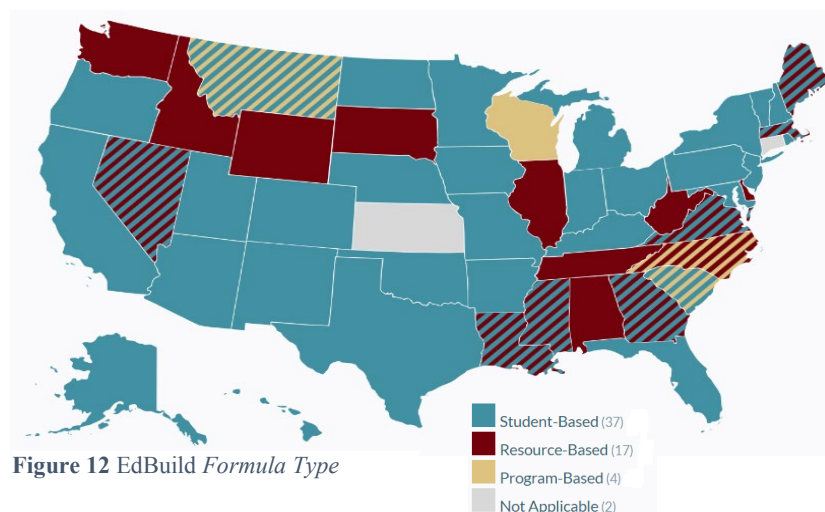
To be sure, there are favorable data points of educational quality in West Virginia, including (i) a high school graduation rate among the highest in the nation, (ii) steady, albeit modest, gains in proficiency on standardized test scores, (iii) a creditable percentage of board certified teachers per capita, and (iv) a high percentage of enrolled four-year-olds in a statewide preschool program ranked sixth in the nation for quality and access.<sup>33</sup>

The preponderance of the evidence on

student performance over a span of many years, nevertheless, raises troubling concerns that West Virginia children are not receiving what they are entitled—a constitutionally adequate education.

**3.** It is not just about adequacy. Although adequacy-oriented, a cost study can also be used to improve needs-based equity between students by identifying the compensatory resources and services disadvantaged children need to achieve the constitutional benchmarks. Based on cost studies, “many states have revised their funding systems to promote a more adequate and *more equitable* distribution of resources.”<sup>34</sup>

It would be worth considering, for instance, whether West Virginia’s **resource-based formula** is as equitable as it should be. West Virginia is among a minority of states that determines funding primarily based on the costs of certain educational resources—e.g., teaching salaries, curricular materials, transportation, and operational costs—per student enrollment. A majority of states use instead a **student-based formula** in which per pupil allocation is differentiated by student need, assigning a base weight for the average student in a school district and an additional weight for special needs students.





The infographic below by Allovue illustrates the potential impact between a resource-based, unweighted formula and a student-based, weighted formula.

populated rural districts by inflating student enrollment to generate extra funding.<sup>35</sup>

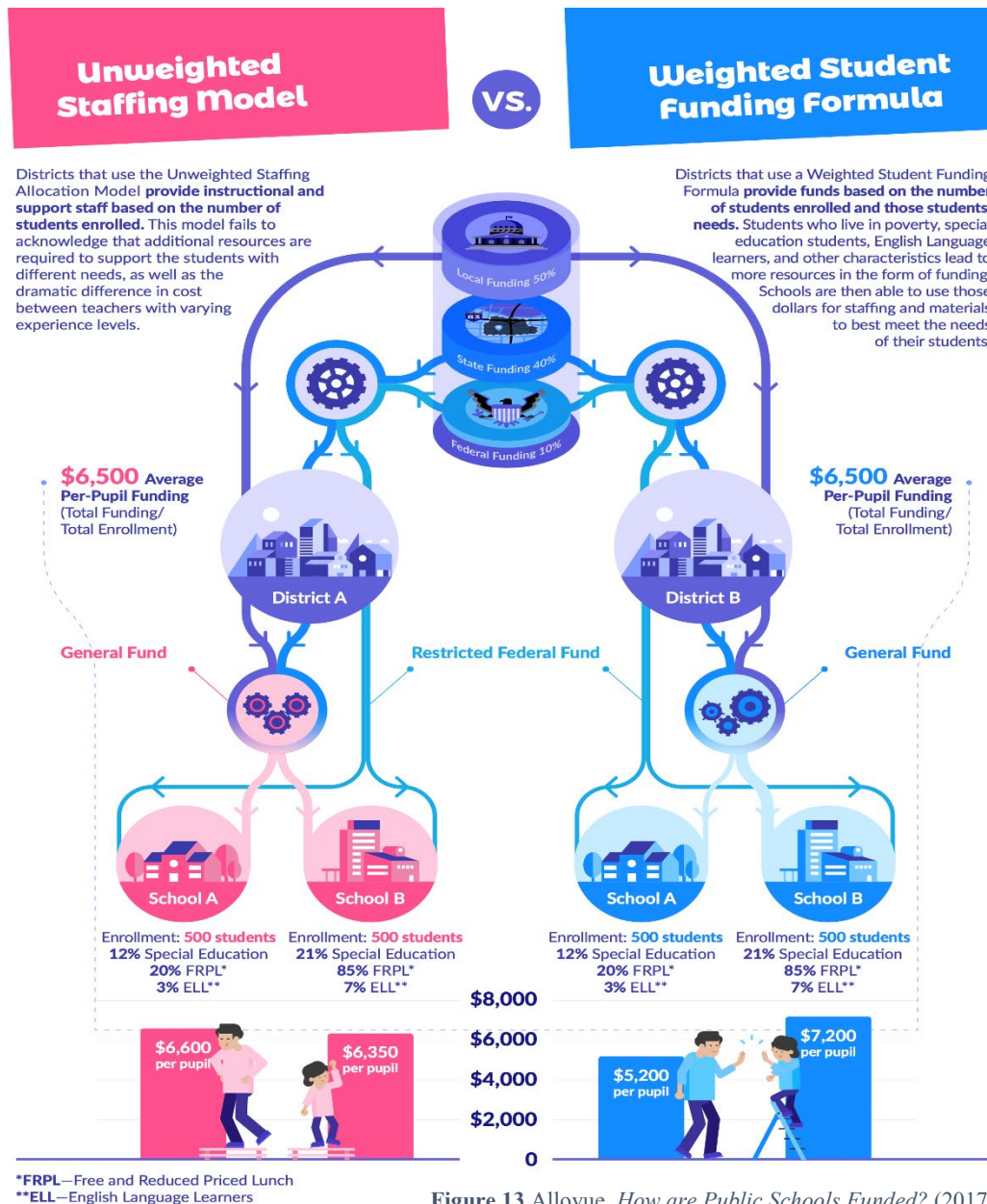


Figure 13 Allovue, *How are Public Schools Funded?* (2017)

West Virginia makes program-specific allocations for English-language learners, highly disabled students, and students enrolled in career and technical education programs. The current formula also provides increased funding for small, sparsely

Significantly, however, West Virginia's formula does not provide additional weights for gifted, low-income, or at-risk students, nor arguably does it sufficiently reimburse districts for the costs of educating students with disabilities or other special needs.

Research has demonstrated that directing funding to higher-needs students can benefit their K-12 educational achievement and chance for success life outcomes.<sup>36</sup> Weighted funding formulas, research has shown, also improve needs-based equity, while streamlining funding systems.<sup>37</sup>

This is not to say that a weighted student-based formula would necessarily be the right fit in West Virginia, perhaps a hybrid resource- and student- based funding formula would work best. In either event, only an adequacy cost study can provide an actual foundation level, per pupil cost—a “baseline of adequacy”—from which to judge spending targets in relation to the needs of differently situated students.<sup>38</sup>

## Challenges as Opportunities

We can turn three adequacy cost study challenges into opportunities to position West Virginia once again on the forefront of educational adequacy and equity issues—just as it was 40 years ago when the state supreme court delivered its landmark *Pauley v. Kelly* decision. But it will take the right mindset. As the court observed in *Pauley*, “patriots of this State” do not succumb to a “mentality that finds nobility in ignorance.”<sup>39</sup>

**Challenge #1** “West Virginia is a poor state. And, besides, throwing more money at the problem is not the answer.”

Per capita, West Virginia’s state GDP, personal income, and total taxable resources are undeniably among the lowest in the nation.<sup>40</sup> So, the argument goes, West Virginia’s fiscal capacity limits the extent to which it can contribute more to K-12 education. But that simply repeats the tired refrain that we are too poor to do anything

about it. On the contrary, to expand state wealth and increase fiscal capacity, economists advise investing in high quality education systems that develop human capital to attract and retain business and stimulate entrepreneurship. Such an investment, it is suggested, will “do more to strengthen the overall state economy than anything else a state government can do.”<sup>41</sup>

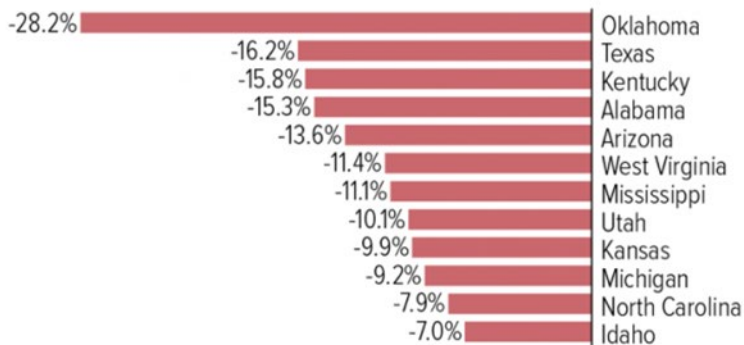
That may be especially true in West Virginia with the nation’s lowest-educated workforce stagnating wage growth and depressing labor force participation rates. For these reasons, West Virginia University economist Dr. John Deskins maintains, “An investment in education to get people the right skills [should be] priority number one.”<sup>42</sup>

The question that we return to then is *how much* should West Virginia invest in K-12 education? We cannot credibly answer that question without an adequacy cost study.

For too long we have been lulled into a sense of complacency by appealing to the lowest common denominator. It is often touted, for instance, that West Virginia exerts high fiscal effort on education expenditures, relative to its fiscal capacity.<sup>43</sup> Others have frequently observed that West Virginia ranks in the middle of states according to per pupil funding, controlling for state variation in student poverty, regional wages, and school district size and density.<sup>44</sup>

But these snapshots do not give us the full picture. The reality is that many states are exerting less fiscal effort on education now than before the Great Recession. So, it should not be a source of pride that West Virginia is among the least of these offenders.

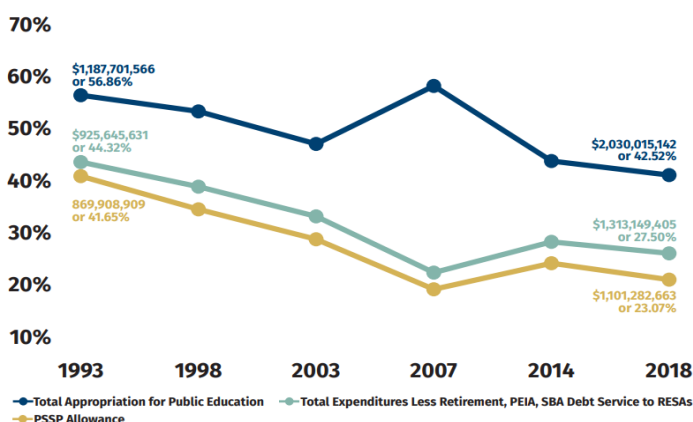
Consider that West Virginia's per pupil funding, inflation adjusted, is almost 12% below 2008 levels.<sup>45</sup>



**Figure 14** Center on Budget and Policy Priorities, *Most States Have Cut School Funding, and Some Continue Cutting* (2016)

Budget shortfalls caused by the Great Recession are not the primary reason that the state cut K-12 funding. Rather, the state was able to cut its basic aid because districts' local shares increased with rising property tax revenues, due in large part to natural gas drilling.<sup>46</sup> At the time, policymakers did not seize the opportunity to reinvest that surplus in public education by raising the foundation allowance or otherwise modifying the school aid formula, choosing instead to cut the state's contribution. Notably, a comparable 10% school spending cut has been shown to reduce test scores by 7.8%.<sup>47</sup>

Consider as well that “[d]ollars appropriated for public education as a percentage of total state appropriations have decreased from more than 56 percent in 1993 to just over 43 percent in 2018.”<sup>48</sup>



**Figure 15** West Virginia Department of Education, *State of Education 2018*

For all the comparisons made with other states, West Virginia's low poverty districts still “underperform relative to other states given their spending.”<sup>49</sup> Moreover, the distribution of school funding tends to disadvantage West Virginia's high poverty districts, perhaps shortchanging these districts by thousands of dollars per pupil necessary to achieve the constitutional adequacy benchmarks.

The argument that “throwing more money at the problem is not the answer” is a rhetorical strategy to ignore actual research and data. Decades of research demonstrate that money indeed matters to educational quality and outcomes.<sup>50</sup> The real debate now is about how much money should be spent on K-12 education and how that money can be spent most efficiently to improve educational outcomes. To get one's bearings in that debate, you need an adequacy cost study.

**Opportunity #1** A WV adequacy cost study will enable education policymakers to make better, more informed decisions about budget priorities and allocations.

Again, this is not to say that adequacy cost study should disregard West Virginia's fiscal constraints. Quite the opposite, the study should cost out potential interventions where additional funds could be procured as well as highlight areas in which money could be spent more efficiently. Moreover, any necessary budget priority changes can be phased in to account for fiscal constraints.

What we can no longer afford to do, however, is bury our collective heads in the sand by refusing a comprehensive assessment of the actual costs of providing a constitutionally adequate education.

**Challenge #2** “West Virginia already does a good job with school funding equity.”

Following *Pauley*, West Virginia has indeed reduced per pupil funding disparities between county school districts, as illustrated on the map below.

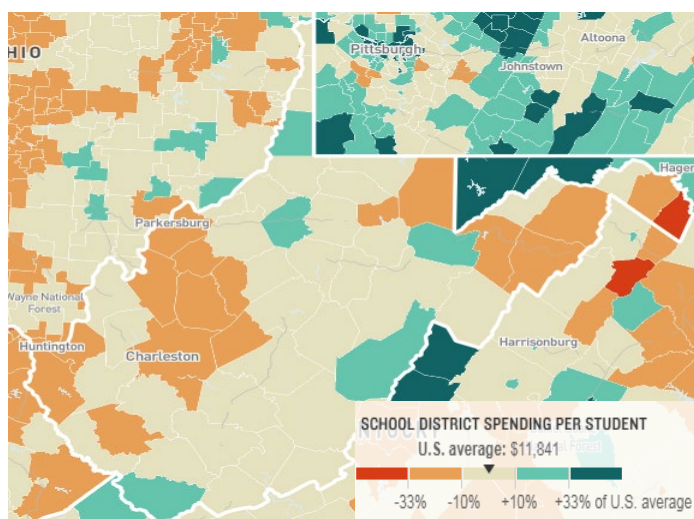


Figure 16 NPR, *Why America's Schools Have a Money problem* (2016)

But as laudable as it is that there exists a degree of fiscal equity between school districts, it is insufficient to meet the demands and guarantees of the West Virginia Constitution. As the court explained in *Pauley*,

“our thorough and efficient constitutional mandate requires something more than a mere equality of educational funding to the counties.”<sup>51</sup>

Equalizing per pupil funding does not, after all, address the needs of disadvantaged children who enter the schoolhouse door already on unequal footing. Indeed, fiscal equalization in such cases may do little more than perpetuate preexisting inequalities.

Disadvantaged children often require *not equal but more* spending to even begin to approximate the educational opportunities and attainment of their more advantaged peers.

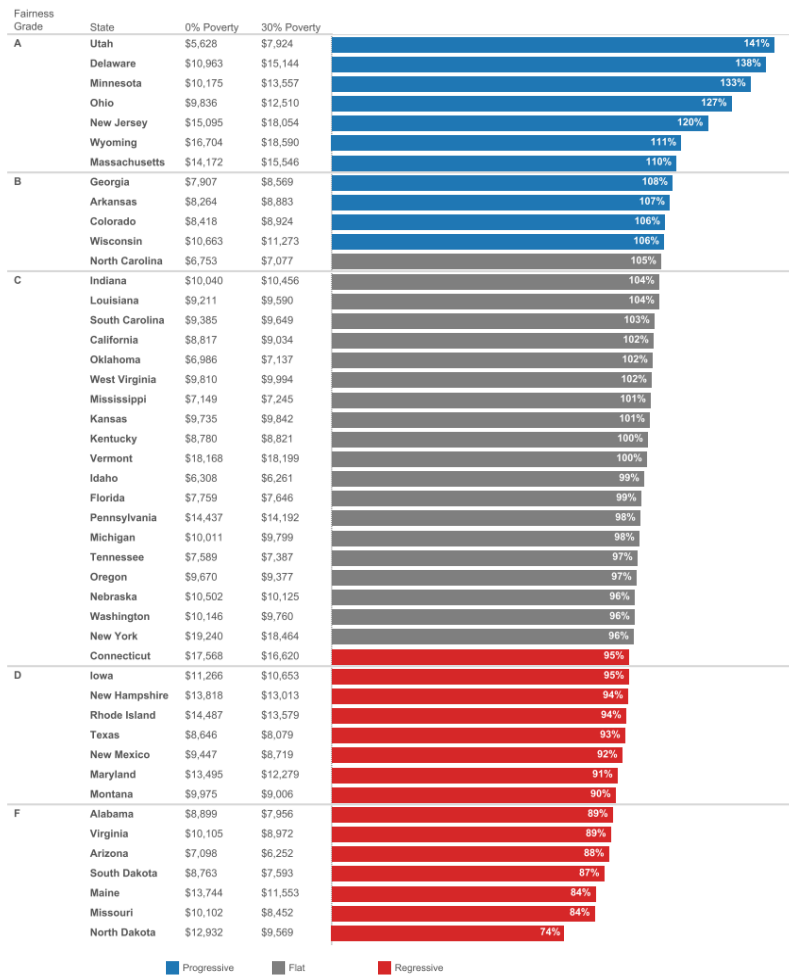
Hence, what the West Virginia Constitution requires is “equality in substantive educational offerings and results, no matter what the expenditure may be.”<sup>52</sup> In other words, it requires needs-based equity between students—treating differently situated children as equals according to their needs so that all can achieve the constitutionally adequate benchmarks.

**Opportunity #2** A WV adequacy cost study can disaggregate the educational needs of students, enabling policymakers to implement a school formula that directs funding to meet those needs.

The State Board of Education appears to be taking a step in that direction by empowering a special committee to explore equity and adequacy issues regarding the school finance formula.<sup>53</sup> But without an adequacy cost study that rigorously measures student need in relation to a baseline of adequacy, those efforts are likely to be incomplete.

There is reason to be encouraged that state funding is not too off-target in terms of needs-based equity between students. Most recent measures suggest West Virginia’s funding distribution is flat, neither progressive (high poverty districts receive additional funding) nor regressive (high poverty districts receive less funding).





**Figure 17** State Funding Distribution, 2015, *Is School Funding Fair A National Report Card* (7th ed., 2018)

Moving West Virginia into the progressive category, research shows, likely would have a positive impact on student achievement.<sup>54</sup>

**Challenge #3** “The adequacy cost studies are inexact.”

There are no doubt limits to the four adequacy cost methods—evidence based, professional judgment, successful schools, and cost function. Early critics faulted cost methodologies for being unable to yield a precise figure that could ensure achievement of desired outcomes. But that criticism missed its mark.

The goal of an adequacy cost study is not to establish a definitive causal connection between a particular dollar amount and

certain education outcomes. It is rather to use empirical research and expertise to make reasonable estimates of the actual costs of educating students with different needs to achieve desired outcomes.<sup>55</sup> Its goal is, in short, “to establish reasonable guideposts for developing more rational state school finance systems.”<sup>56</sup>

Researchers who conduct adequacy cost studies are acutely aware of the limitations of cost study methodologies and over the past two decades have developed best practices to mitigate those limitations:

1. Link explicit resources to student performance.
2. Use case studies of high-performing or dramatically improving schools.
3. Involve education policymakers and key stakeholders.
4. Combine two or more of the four methods to improve reliability and validity.
5. Select professional judgment panels with multiple perspectives, representing different regions and districts sizes, and include teachers and administrators who are from schools that have produced large gains in student learning, work in high-performing schools or are National Board Certified or otherwise award-winning educators.

6. Integrate multiple panels for professional judgment studies, each reviewing the recommendations of the previous panel.

7. Pay attention to the benefit rate used in calculating compensation rates for all personnel in adequacy studies.<sup>57</sup>

Moreover, recent adequacy cost studies have also conducted validation exercises to

strengthen their reliability and validity.<sup>58</sup> Yet, even if the studies cannot achieve absolute precision, they offer a dependable compass without which the state is flying blind.

**Opportunity #3** A WV adequacy cost study can build on the methodological advances and further mitigate other limitations by providing clear state standards for input and outcome criteria, accounting for diverse student needs, and considering cost effectiveness.<sup>59</sup>

In certain respects, the education climate in West Virginia is most advantageous to an adequacy cost study. At least when compared to the complexity and diversity of other states, there are not as extremely significant variations in West Virginia regarding the characteristics of students, school district size, or resource costs.

The state dynamics are also such that the most conducive adequacy cost study probably would be one that used a professional judgment method restrained by state standards and incorporating elements of the evidence based method—combined with the cost function method to promote cost effectiveness while providing the most reliable estimates of actual costs and cost variation.

## Conclusion

The path to turning things around in West Virginia begins with investing in public education. Economists say that should be our top priority. The West Virginia Constitution says it is, in fact, the State's top priority, as a matter of law. Before we make that investment, however, we should know how much it will actually cost and where best to allocate the funds so that our investment will most efficiently produce the educational

outcomes—and thereby the positive economic, political, and social outcomes—West Virginia most desperately needs.

An adequacy cost study will help us make that wise investment. Of course, one study is not a panacea for our all educational problems. Certainly, there are other factors beyond money that affect educational outcomes, including, for instance, the equitable distribution of quality teachers and school leadership and culture. But money matters, especially how it is spent. In that regard, an adequacy cost study is not meant to dictate state education policy but rather to provide much needed information and guidance to state education policymakers so that they can keep faith with the fundamental constitutional right to an adequate and equitable education.

To conclude where we began, in 1862, with the admonitions of delegate Rev. Gordon Battelle, discerning the importance of an adequate education to the vitality of the state and its people, who will not be made fools:

“

And one thing I will tell you: the people of West Virginia are too shrewd not to see, not to be satisfied when they demand at our hands a good and sufficient provision for free schools, they are too shrewd not to see the deception we would practice on them by turning them away with a few flatteries and blandishments instead.<sup>60</sup>

”

## Endnotes

<sup>1</sup> DEBATES & PROCEEDINGS OF THE FIRST CONSTITUTIONAL CONVENTION OF WEST VIRGINIA (1961-1863) (statement of Mr. Battelle) (JAN. 27, 1862), <https://bit.ly/2EFJOAV>.

<sup>2</sup> Matt McKillop & Daniel Newman, *Years of Slower Population Growth Persisted in 2017*, PEW CHARITABLE TRUSTS, (Jun. 20, 2018), <https://bit.ly/2Ri8GS6>; see also WVU Bureau of Business & Economic Research, *Population Trends in West Virginia through 2030* (Mar. 2014), <https://bit.ly/2zMlj05>.

<sup>3</sup> See *Percentage of People 25 Years and Over Who Have Completed a Bachelor's Degree*, 2016 American Community Survey, U.S. Census Bureau, <https://bit.ly/2lvS2dL>; see also *2018's Most & Least Educated States in America*, WalletHub <https://bit.ly/2Rg3cYl>.

<sup>4</sup> See Noah Berger & Peter Fisher, *A Well-Educated Workforce is Key to State Prosperity*, Economic Policy Institute (2013) <https://bit.ly/2y6TdMa>; *The Role of Education: Promoting the Economic and Social Vitality of Rural America*, Southern Rural Dev. Center (Lionel J. Beaulieu & Robert Gibbs, eds. 2005) <https://bit.ly/2P4Eijq>.

<sup>5</sup> United States Elections Project 2016 General Election, <https://bit.ly/1E9b2nY>.

<sup>6</sup> Rachel Milstein Sondheimer & Donald P. Green, *Using Experiments to Estimate the Effects of Education on Voter Turnout*, 54 AMERICAN J. OF POLITICAL SCIENCE 174 (2010) <https://bit.ly/2O2E2hW>.

<sup>7</sup> See 2016's Most & Least Politically Engaged States, WalletHub, <https://bit.ly/1Yh2Y01>; *Women's Status on the Political Participation Composite Index and Its Components*, Institute for Women's Policy Research (2016), <https://bit.ly/2NhZ8n9>.

<sup>8</sup> Thomas S. Dee, *Are there civic returns to education?*, 88 J. Public Economics 1697, 1717 (2004), <https://bit.ly/2DNcWxa>.

<sup>9</sup> See *The State of Obesity Better Policies for a Healthier America*, ROBERT WOOD JOHNSON FOUNDATION <https://bit.ly/2y8eKEa>; *Drug Overdose Death Data*, CENTERS FOR DISEASE CONTROL AND PREVENTION (2016), <https://bit.ly/2aowy2C>; *West Virginia Behavioral Risk Factor Surveillance System Report 2016*, WEST VIRGINIA HEALTH STATISTICS CENTER, DIVISION OF HEALTH PROMOTION AND CHRONIC DISEASE, <https://bit.ly/2NhtKFp>; *America's Health Rankings Annual Report 2017*, UNITED HEALTH FOUNDATION, <https://bit.ly/2H0Fc6g>.

<sup>10</sup> See Anna Zajacova & Elizabeth M. Lawrence, *The Relationship Between Education and Health: Reducing Disparities Through a Contextual Approach*, ANNUAL REVIEW PUBLIC HEALTH (2018), <https://bit.ly/2Nj3LNI>.

<sup>11</sup> See Robert D. Putnam, *BOWLING ALONE: THE COLLAPSE AND REVIVAL OF AMERICAN COMMUNITY* (2000); Shannon Elizabeth Bell, *"There Ain't No Bond in Town Like There Used to Be"; The Destruction of Social Capital in the West Virginia Coalfields*, 24 SOCIOLOGICAL FORUM 631 (2009).

<sup>12</sup> CHARLES H. AMBLER, *THE HISTORY OF EDUCATION IN WEST VIRGINIA: FROM EARLY COLONIAL TIMES TO 1949*, 134-37 (1951).

<sup>13</sup> *Pauley v. Kelly*, 255 S.E.2d 859, 878 (W.Va. 1979).

<sup>14</sup> *Cathe A. v. Doddridge County Bd. of Educ.*, 490 S.E.2d 340, 346-47 (W.Va. 1997) ("If the state takes some action which denies or infringes upon a person's fundamental right to an education, then strict scrutiny will apply and the State must prove that its action is necessary to serve some compelling State interest. Furthermore, any denial or infringement of the fundamental right to an education for a compelling State interest must be narrowly tailored.").

<sup>15</sup> *Pauley*, 255 S.E.2d at 884 (emphasis added).

<sup>16</sup> *Id.*

<sup>17</sup> *Id.* at 877-78.

<sup>18</sup> *Id.* at 878.

<sup>19</sup> *Id.* at 880 (exempting from equal protection analysis disparities resulting from excess levies).

<sup>20</sup> *Id.* at 865 n.7.

<sup>21</sup> "[E]ach district is expected to contribute \$1.94 for every \$1,000 of assessed tangible agricultural property wealth, \$3.88 for every \$1,000 of assessed owner-occupied property wealth, including farms, and \$7.76 for every \$1,000 of other assessed local property wealth. With the approval of a majority of voters in a referendum, school districts may levy higher rates [up to preset maximums, which] must be re-approved every five years. With voter approval, districts may also impose additional property taxes for specific purposes, including to pay the cost of maturing bonds and bond interest and to pay for capital improvements. School districts may issue bonds worth up to 5% of the taxable value of real and personal property within the district and may levy taxes sufficient to pay the principal and interest."

*FunEd: West Virginia Report: A Detailed Look at West Virginia's Funding Policies*, EDBUILD, <https://bit.ly/2O25QmB> (last visited October 7, 2018).

<sup>22</sup> See West Virginia Department of Education, *State of West Virginia Executive Summary of the Public School Support Program Based on the Final Computations for the 2017-18 year* <https://bit.ly/2DPR51o>; see also *HANDBOOK FOR SCHOOL FINANCE IN WEST VIRGINIA* (1990), <https://bit.ly/2RiRw74>.

<sup>23</sup> See West Virginia Department of Education Source Books 2008-2015, <https://bit.ly/2O1G2qr>; see also *Public Education Finances: 2015*, Education Finance Branch, U.S. Census Bureau (2017) <https://bit.ly/2eKHAUS>.

<sup>24</sup> West Virginia Department of Education, *Public School Support Program Total Allowance, Local Share, & Basic State Aid Based on Preliminary Computations for the 2018-19 Year* <https://bit.ly/2NXLaMv>.

<sup>25</sup> See Michael A. Rebell et al., *A New Constitutional Cost Methodology for Determining the Actual Cost of a Sound Basic Education*, Teachers College Columbia University (Sept. 2016), <https://bit.ly/2P6ilJZ>. The Virginia and North Carolina adequacy cost studies were commissioned in 2018, the former by legislature enactment (<https://bit.ly/2OA7riF>), the latter by court order (<https://bit.ly/2PbDWRq>).

<sup>26</sup> Anabel Aportela, et al., *Comprehensive Review of State Adequacy Studies Since 2003*, APA Consulting (2014), <https://bit.ly/2y3Ie62>.

<sup>27</sup> Jesse Levin, *Review of Kansas Education Cost Studies*, American Institutes for Research (2018), <https://bit.ly/2DNZVN9>.

<sup>28</sup> See Bruce Baker & Jesse Levin, *Educational Equity, Adequacy, and Equal Opportunity in the Commonwealth: An Evaluation of Pennsylvania's School Finance System*, 38-39 (2014), <https://bit.ly/2OIdr4n>.

<sup>29</sup> *State ex rel. Boards of Educ. of Counties. of Upshur, et al. v. Chafin*, 376 S.E.2d 113, 121 (W.Va. 1988).

<sup>30</sup> *Pauley*, 255 S.E.2d at 882.

<sup>31</sup> *Bailey v. Truby*, 321 S.E.2d 302, 310 (W.Va. 1984).

<sup>32</sup> *Board of Educ. of County of Kanawha v. West Virginia Bd. of Educ.*, 399 S.E.2d 1, 35 (W.Va. 1990) (emphasis added).

<sup>33</sup> West Virginia Department of Education, *The State of Education 2018* (July 2018), <https://bit.ly/2Nwh4KG>.

<sup>34</sup> Michael A. Rebell, *Safeguarding the Right to A Sound Basic Education in Times of Fiscal Constraint*, 75 ALB. L. REV. 1855, 1911 (2012).

<sup>35</sup> See EDBUILD, *supra* note 21.

<sup>36</sup> See, e.g., David Card & A. Abigail Payne, *School finance reform, the distribution of school spending, and the distribution of student test scores*, 83 J. PUBLIC ECON. 49 (2002), <https://bit.ly/2E3DbJe>; Chris Candelaria, & Ken Shores, *The Sensitivity of Causal Estimates from Court-Ordered Finance Reform on Spending and Graduation Rates*, CEPA Working Paper No. 16-05 (2015), <https://stanford.io/2NvtLFM>; C. Kirabo Jackson, Rucker C. Johnson, & Claudia Persico, *The Effects of School Spending on Educational and Economic Outcomes: Evidence from School Finance Reforms*, 131 Q. J. ECON. 157 (2016), <https://bit.ly/1Ce3Rgs>.

<sup>37</sup> See, e.g., Kimberly Curtis, Kristin Sinclair, & Betty Malen, *Student-Based Budgeting (SBB) as an Education Reform Strategy: Theory and Evidence*, Paper presented at the 39th Annual Conference of the Association for Education Finance and Policy, (2014); Helen F. Ladd, *Reflections on Equity, Adequacy, and Weighted Student Funding*, 3 EDUC. FIN. & POL'Y, 402 (2008), <https://bit.ly/2Pnflde>; Karen Hawley Miles & Marguerite Roza, *Understanding Student-Weighted Allocation as a Means to Greater School Resource Equity*, 81 PEABODY J. EDUC. 39 (2006), <https://bit.ly/2NolHdm>; Bruce D. Baker, *Within-district resource allocation and the marginal costs of providing equal educational opportunity: Evidence from Texas and Ohio*, 17 EDUC. POL'Y ANALYSIS ARCHIVES (2009), <https://bit.ly/2zYA7Kd>; Jay G. Chambers, Jesse D. Levin, & Larisa Shambaugh, *Exploring weighted student formulas as a policy for improving equity for distributing resources to schools: A case study of two California school districts*, 29 ECON. EDUC. REV. 283 (2010), <https://bit.ly/2PjZ3B2>.

<sup>38</sup> See Colleen Fahy, *Education Funding in Massachusetts: The Effects of Aid Modifications on Vertical and Horizontal Equity*, 36 J. EDUC. FIN. 217, 231 (2011).

<sup>39</sup> Pauley, 255 S.E.2d at 884 n.44.

<sup>40</sup> Tracy Gordon, Richard Auxier, & John Iselin, *Assessing Fiscal Capacities of States*, THE URBAN INSTITUTE (2016) <https://tpc.io/2zZgAtb>.

<sup>41</sup> Berger & Fisher, *supra* note 4.

<sup>42</sup> Jake Flatley, *WVU report: State's economy experience unbalanced recovery*, WV METRONews (Oct. 3, 2018), <https://bit.ly/2NwmsNQ>.

<sup>43</sup> See Bruce D. Baker, Danielle Farrie, & David Sciarra, *Is School Funding Fair? A National Report Card*, Education Law Center & Rutgers Graduate School of Education (7th ed. 2018), <https://bit.ly/2mw4qQU>.

<sup>44</sup> *Id.*

<sup>45</sup> Michael Leachman, et al., *Most States Have Cut School Funding, and Some Continue Cutting*, Center for Budget & Policy Priorities (2016), <https://bit.ly/2RE7997>.

<sup>46</sup> Sean O'Leary, *Growing Property Tax Revenue Changing K-12 Funding*, West Virginia Center for Budget & Policy Blog (2015), <https://bit.ly/2pIHYWn>.

<sup>47</sup> C. Kirabo Jackson, Cora Wigger, Heyu Xiong, *Do School Spending Cuts Matter? Evidence from the Great Recession*, NBER Working Paper No. 24203 (2018), <https://bit.ly/2GPOfti>.

<sup>48</sup> See *supra* note 33.

<sup>49</sup> Bruce D. Baker, et al., *The Real Shame of the Nation: The Causes and Consequences of Interstate Inequity in Public School Investments*, Education Law Center & Rutgers Graduate School of Education (2018), <https://drive.google.com/file/d/1cm6Jkm6ktUT3SQplzDFjJly3G3iLWot/view>.

<sup>50</sup> See, e.g., Bruce D. Baker, *Revisiting the Age-Old Question: Does Money Matter in Education?* (2012), <https://bit.ly/2z2omE5>; Rob Greenwald, Larry V. Hedges & Richard D. Laine, *The Effect of School Resources on Student Achievement*, 66 REV. EDUC. RES. 361, 384 (1996), <https://bit.ly/2Of4HV>; Ulrich Boser, *Return on Educational Investment* CTR. AM. PROGRESS (2014), <https://ampr.gs/2RE0dsB>; C. Kirabo Jackson, Rucker Johnson, & Claudia Persico, *The Effect of School Finance Reforms on the Distribution of Spending, Academic Achievement, and Adult Outcomes*, Nat'l Bureau of Econ. Research, Working Paper No. 20118 (2014), <https://bit.ly/1jnpGfX>.

<sup>51</sup> Pauley, 255 S.E.2d at 882.

<sup>52</sup> *Id.* at 865 n.7.

<sup>53</sup> See Jordan Nelson, *State BOE Committee discusses greatest needs of public school system*, REGISTER-HERALD REPORTER (Aug. 9, 2018), <https://bit.ly/2OQaF1E>.

<sup>54</sup> See Julien Lafortune, Jesse Rothstein & Diane Whitmore-Schanzenbach, *School Finance Reform and the Distribution of Student Achievement*, NBER Working Paper No. 22011, (2016), <https://bit.ly/2ITxz1I>.

<sup>55</sup> See Rebell, et al., *supra* note 25.

<sup>56</sup> See Bruce D. Baker, et al., *supra* note 44, at 10.

<sup>57</sup> See Anabel Aportela, et al., *supra* note 26.

<sup>58</sup> See, e.g., Jesse Levin, et al., *What Does It Cost to Educate California's Students? A Professional Judgment Approach*, American Institutes for Research (2018), <https://bit.ly/2RGsS0u>.

<sup>59</sup> See Rebell, et al., *supra* note 25.

<sup>60</sup> DEBATES & PROCEEDINGS OF THE FIRST CONSTITUTIONAL CONVENTION OF WEST VIRGINIA (1961-1863) (statement of Mr. Battelle) (Jan. 28, 1862), <https://bit.ly/2Co6T8W>.