Nevada School Finance Study

By

Augenblick, Palaich and Associates

Education Commission of the States

Picus Odden and Associates

Draft, August 1, 2018

Contents

I. Overview of Study and Report, Review of Current System

Overview of Study and Report

This is the draft report of Augenblick, Palaich, and Associates' (APA) "Nevada School Finance Study" for the Nevada Department of Education (NDE). In late 2017, APA along with the Education Commission of the States (ECS) and Picus, Odden, and Associates (POA) responded to a request for proposal (RFP) from Nevada for a school finance study. The state's RFP called for an update of the American Institute of Research's (AIR) 2012 *Study of a New Method of Funding for Public Schools in Nevada* ,[1] with a focus on the resources needed for students with special needs, including at-risk, English learners (ELs), special education, and gifted students.

The 2012 AIR study included five components:

- Overview and Analysis of the Nevada Plan
- Inventory of State Finance Systems
- Identifying Adjustments Used to Address Cost Factors
- Simulation of Alternative Practices in Nevada
- Recommendations

The report examined how other state's finance formulas worked and used that information, along with statistical analysis, to create a set of recommendations on how Nevada's current school finance formula might be updated to better serve students. APA's proposal included updating the information contained in the first four components of the AIR report, engaging in stakeholder feedback, implementing two adequacy approaches- the professional judgment and evidence-based approaches- to developing cost factors, and providing an updated set of recommendations to the state.

Further, during early meetings of the Working Committee for the study, it became clear that no conversation about the additional resources for special needs students could be had without an understanding of the resources needed at the base level for all students. This study identifies one possible base figure through the evidence-based approach. The study team also incorporated results of prior adequacy work conducted in Nevada by APA in 2006 and 2015 to allow for a robust discussion of an appropriate base amount using multiple approaches.

Report Structure

The remainder of this chapter highlights changes to the state's funding system since the 2012 study. It also includes the initial feedback from stakeholders gained through a statewide survey focused on impressions of the current school finance system.

Chapter 2 updates the review of how other states' finance systems function. In the 2012 study, the AIR team used a survey to collect the data. For this updated data collection, led by ECS, the study team

[1] Jay Chambers et al, *Study of a New Method of Funding for Public Schools in Nevada* (San Mateo, California: American Institutes for Research, 2012). Retrieved at: https://www.air.org/sites/default/files/downloads/report/AIR_NV_Funding_Study_Sept2012_0.pdf

collected information about state funding formulas, funding for high-need students, and funding adjustments for small/isolated schools through a review of state legislation, rules, and regulations. When necessary, the study team made use of state reports and studies to confirm our understanding of state policies. In some cases, the study team contacted departments of education staff in states to further clarify certain pieces of information. The study team used verified third-party studies for information about vocational/career/technical programs, state grade weighting, and regional cost adjustment policies.

Chapter 3 reviews the analyses AIR conducted to examine potential adjustments based on the cost factors in a set of comparable states. The study team first examined if there have been changes in the ways the comparable states fund schools since the 2012 study that would indicate a need to redo the AIR analysis. In this report, the study team identifies where updated analysis was needed.

To supplement the information gained on how best to serve special needs populations identified in chapters 2 and 3, the study team utilized two different adequacy approaches—the professional judgment (PJ) approach and the evidence-based (EB) approach—to examine the resources that might be needed for Nevada students to meet state standards. These adequacy approaches require a different investigative lens than simply reviewing and analyzing how other states' fund these students. Adequacy approaches utilize a state's specific education standards to estimate the resources needed for each student population to meet state standards. These types of approaches have been used across the country to makes such estimates. Chapter 4 examines the implementation of the PJ approach. The PJ approach brought together educators from across Nevada to identify the resources needed for special education, at-risk, and English learners (ELs). The PJ approach was implemented in a targeted way to address resources for these student groups and built upon a 2015 APA study for the Lincy Institute at UNLV.[2] The PJ results identify new figures for the special needs categories and an updated base cost figure using the findings of the 2015 study. Chapter 5 examines the implementation of the EB approach, led by POA, which relies on research from across the country to identify the types of resources that are being shown to have significant impact on student performance. The approach provides a base cost and the adjustments needed for special needs students.

Chapter 6 brings together the information from the prior five chapters. The chapter compares the information from the national funding model review, the updated comparison state analyses, and the results of this study and prior adequacy studies in Nevada. The chapter then presents options for: (1) a base amount, (2) adjustments for student need, and (3) adjustments for school/ district characteristics that might be included in an updated Nevada state school funding system. It does not include the fiscal impact of any one or number of alternatives at this time.

Next steps for the study include the development of an interactive Excel model to allow for examination of the fiscal impact of alternatives. In September, the study team will also undertake a stakeholder

[2] Silverstein, J., Brown, A., Piscatelli, J., Shen, Y. (2015). *Professional Judgement Study Report* for the Lincy Institute at UNLV. Denver, CO: Augenblick, Palaich & Associates. Retrieved at: http://apaconsulting.net/wp-content/uploads/2018/08/NV-Professional-Judgment-Report-.pdf

engagement process to gain feedback to refine the recommendations and alternatives from this draft report. APA will present final recommendations and fiscal impact by district in its final October report.

Review of Current Funding System

Overview of the Nevada Plan[3]

Nevada's current school funding system, the Nevada Plan (Plan), was first established in 1967. Though there have been changes over time, the basics of the Plan remain similar to when it was first established. The Plan is an equalization formula that generates a guaranteed funding amount, the basic support amount, for each of the state's school districts. Once the funding amount is set, each districts' local capacity to raise funds is measured, this amount is subtracted from the guaranteed amount, and the state backfills or equalizes the remaining dollars.

Each district's guaranteed funding amount under the Plan is generated based on district-specific characteristics, not student characteristics. A separate basic support per pupil figure for each school district is calculated by NDE using a formula that considers a district's relative differences in terms of cost of living, size, and the cost per pupil of administration and support services compared to the statewide average in each area. A wealth adjustment, based on each district's ability to generate revenue in addition to the guaranteed level of funding, is also included to equalize the system.

While the Plan does not differentiate for student-specific differences, other funding streams (referred to as categorical streams) do provide funding for such students. Categorical funding streams include dollars for class-size reduction, career and technical education, English learners, and other programs.

Special education funding is also funded outside of the basic support amount. Funding for special education was a unit-based allocation prior to the 2016-17 school year when funds were distributed on a proportional basis to school districts and charter schools. Funding is capped at 13 percent of total pupil enrollment. Additionally, the state adopted a Special Education Contingency Fund to help provide resources for students with significant disabilities.

Other changes to the state's funding system since the 2012 AIR report include:

- 2015 – The legislature permanently increased the Local School Support Tax (LSST) to 2.60 percent from 2.25 percent.
- 2015 – Increased funding for kindergarten students from .60 to a full 1.0.
- 2016 – Ballot Question 2 approved the sale of recreational marijuana, with the net proceeds of the excise tax being deposited into the DSA budget.

National Rankings

There are at least three long-running and well-regarded state-by-state assessments of the quality of state education finance systems. Perhaps the best known of the three is the annual *Quality Counts* report issued by Editorial Projects in Education, the publisher of *Education Week*. The 2018 *Quality*

[3] Legislative Counsel Bureau, Fiscal Analysis Division (2017). *The Nevada Plan for School Finance, an Overview.* Retrieved at https://www.leg.state.nv.us/Division/Fiscal/NevadaPlan/Nevada_Plan.pdf.

Counts is the 22nd year of the report. The Education Law Center at Rutgers has published the report *Is Funding Fair? A National Report Card* for the past nine years. The third report, the National Education Association's *Rankings of the States* report has been issued for the past 70 years.

All three reports show Nevada ranking near the bottom among states in most measures. They also show that Nevada's ranking, in most cases, has not improved or gotten worse over the past one or two decades.

Education Week's *Quality Counts* annual report rates each states' and the District of Columbia's education finance systems on two dimensions – equity and spending. In the 2003 *Quality Counts* report, Nevada received a grade of B for funding equity. Its coefficient of variation at the time was 0.087, well under even the more stringent 0.10 benchmark, and its correlation coefficient was -0.104, also well below the standard of 0.1. By 2018 these two measures were 0.152 and 0.166, respectively, both above the generally accepted benchmarks. The later report no longer assigns a grade for each of the two dimensions, but only an overall grade.

Nevada did not perform quite as well on the spending dimension as on the equity dimension in 2003. It received a grade of C-, with a score of 71 out of a possible 100. In one of the primary measures, per-student expenditures, Nevada ranked 44th. Its per-student expenditure amount was 85.6 percent of the national average at the time. By 2018 Nevada ranked 47th in per-student expenditures and its per-student expenditure amount was equal to only 70.3 percent of the national average per-student expenditure amount.

The Quality Counts analysis assigned an overall grade of C+ for the state's school finance system in 2003. By 2018 the Nevada's overall grade had fallen to a D-.

The Education Law Center at Rutgers released an update of its *Is School Funding Fair: A National Report Card* report in February 2018.[4] This edition of the report uses data from 2015 to rate the 50 states and the District of Columbia on the following factors of each state's school finance system: 1) how well it distributes funding across its school districts; 2) the level of fiscal effort made by the state to fund public education; 3) the amount of funding; and 4) coverage, or the proportion of all students enrolled in public schools. Each factor is summarized below.

1. **Funding Level.** Funding level is the average per-student state and local funding provided by each state. To provide a more equitable comparison these per-pupil amounts were adjusted for regional cost differences, poverty, population density, and economies of scale. In the 2009 report, Nevada was ranked 38th. In 2018 Nevada was ranked 42nd, ahead of Tennessee, Mississippi, Oklahoma, Utah, North Carolina, Arizona, and Idaho.

2. **Funding Distribution.** Funding distribution refers to how per-student funding varies in relation to districts' concentrations of poverty. States that provide more funding as poverty rises are ranked higher than those that do not increase funding with poverty or spend less per student as

[4] Baker, et al., (2018).

poverty increases. In the 2009 report, Nevada received a grade of "F" along with four other states. In the latest report Nevada is ranked last, providing higher poverty districts with only 57 percent of the funding allocated to districts with low-poverty levels. Nevada is one of nine states to receive a grade of "F" in this category.

3. **Effort.** Effort is a measure of the proportion of state resources, measured by per-capita gross state product (GSP), dedicated to funding public schools. In 2009 Nevada was one of 14 states receiving an "F" in this category. In the 2018 report, Nevada again received an "F," one of 17 states to receive this grade. Only four states, Delaware, North Carolina, Arizona, and Hawaii ranked lower than Nevada. The 2018 edition of the report also ranked fiscal effort using the proportion of per-capita personal income as the measure. Nevada again received an "F" on this measure, along with 13 other states. Colorado, Idaho, Florida, Arizona, and Hawaii were the states ranked below Nevada.

4. **Coverage.** Coverage represents the proportion of school-age children attending public schools compared to children attending private schools. Nevada ranked 17th in the 2009 report. In 2018 Nevada ranked 13th, the only category of rankings in which Nevada improved over the 2009 report.

The National Education Association's annual *Rankings of the States*[5] provides state-by-state comparisons of a wide range of data on students, district and school staff, and education finances. Nevada does not rank very highly on most items related to finances. At $9,258, Nevada ranked 48th in 2017 in per-pupil revenues. The national average was $13,900 and the state with the highest per-student revenues, $25,576, was New York. Idaho had the lowest per-student revenues at $8,144. The state's low level of per-student revenues led to low rankings on several expenditure-related measures. At 25.86 students per teacher, Nevada had the highest number of enrolled students per teacher in the country. The national average was 15.96 students per teacher. At $8,165, Nevada ranked 47th in per-student current expenditures compared to the national average of $11,642. Nevada ranked higher (18th) in average classroom teachers' salaries, with an average salary of $57,376. However, this ranking is offset to a certain extent by the large number of students per teacher noted above. In essence, the state is trading larger class sizes for higher salaries.

A review of the *2008 Rankings of States* shows that little changed in most of these measures in Nevada over the past decade. The 2008 report ranked Nevada 50th in per-pupil revenues and 48th in per-pupil current expenditures. At fourth highest, Nevada was ranked slightly better in students per teacher in 2008. One area of significant improvement since 2008 was in average classroom teacher salaries. In 2008 the average teacher salary was ranked 29th compared to 18th in 2017.

Equity Assessment

In school finance terms, "equity" is concerned with how resources are allocated across school districts and, ultimately, across schools and students. The most common notion of equity assumes a school

[5] NEA Research. (2018). *Rankings of the States 2017 and Estimates of School Statistics 2018*. Washington, D.C.: National Education Association.

finance system that distributes resources equally is equitable. This definition of equity, known as horizontal equity, is true when thinking about the median student, that is, a student with no special needs (e.g. at-risk students, EL students, or special education students). School finance researchers may also be interested in equity from other perspectives, such as the relationship between local wealth and per-pupil spending levels (also known as fiscal neutrality) or the relationship between student need and spending (known as vertical equity). In its 2012 report, AIR examined the equity of Nevada's funding system for the period 2000 through 2012. It reported that the equity of Nevada's system appeared to be decreasing over time. It found that the coefficient of variation[6] (CV) in Nevada was 0.0103 in 1991, which is well under the benchmark of 0.150 used by AIR, and very near the benchmark of 0.100 established by other school finance researchers.[7] The most recent Quality Counts[8] study published by *Education Week* reports a CV for Nevada (based on 2015 data) of 0.152. This value is considerably higher than the 1991 CV and the more stringent 0.100 benchmark, but is slightly less than the national average CV reported by Quality Counts of 0.157 and just exceeds the higher benchmark of 0.150. These data suggest Nevada's finance system is becoming less equitable over time but is still reasonably equitable by at least some benchmarks.

Fiscal neutrality was also measured in the Quality Counts report. This measure consists of the correlation coefficient between local wealth, usually comprising the local property tax base, and per-pupil spending. Stronger correlation between the two suggests the school finance system is too dependent on local resources, giving wealthier communities with larger local tax bases a funding advantage. The correlation coefficient ranges from -1.0 to 1.0, with 0.0 representing no relationship, -1.0 a perfect negative relationship, and 1.0 a perfect positive relationship. A generally accepted benchmark is that an equitable system should have a correlation coefficient of no more than 0.1. The Quality Counts report found that Nevada had a correlation coefficient of 0.166, higher than the benchmark and also higher than the national average for all states of 0.138. This finding suggests Nevada's funding system tends to provide more resources to wealthier communities than to poorer communities.

In its report *Is School Funding Fair*[9] the Education Law Center examined vertical equity, the relationship between spending levels and student need, by estimating the difference in per-student funding for districts with 0, 10, 20, and 30 percent of students in poverty. In a state that is vertically equitable, districts with a 30 percent poverty rate will have higher per-student revenues than those with lower poverty rates. The study found that Nevada's "fairness ratio," the ratio of per-student funding at 30 percent poverty to funding at 0 percent poverty was 57 percent, meaning the higher poverty district received just over half of the per-student funding of the district with no poverty. Nevada's fairness ratio

[6] The coefficient of variation is a measure of the distribution of values around the mean. It is calculated by dividing the standard deviation by the mean, with a range of possible values from 0 to 1.0. A low coefficient of variation indicates a more equitable system.

[7] See, for example, Odden, A. R. & Picus, L. O. (2014). *School Finance: A Policy Perspective* (5th Ed.). New York:McGraw-Hill.

[8] Education Week. (2018). *2018 Quality Counts School Finance Report and Ranking.* Retrieved from https://www.edweek.org/ew/collections/quality-counts-2018-state-finance/index.html.

[9] Baker, B. D., Farrie, D., & Sciarra, D. (2018). *Is School Funding Fair? A National Report Card* (7th Ed.). Newark, NJ: Rutgers, Graduate School of Education, Education Law Center. Retrieved from https://drive.google.com/file/d/1BTAjZuqOs8pEGWW6oUBotb6omVw1hUJI/view.

was the lowest among the 50 states (Utah, at 141 percent, had the highest fairness ratio). This analysis is also used in Chapter 3 to update the list of states with the most progressive school finance systems.

Comparison against School Finance Principles

In the 2012 AIR report, the state's funding system was compared to a set of principles of a good school finance system including:

- Sufficiently funded
- Equitable on both horizontal/vertical dimensions
- Transparent, understandable, and accessible
- Cost based
- Capable of minimizing incentives
- Reasonable in its administrative costs
- Predictable, stable, and timely
- Accountable for learning outcomes and spending
- Politically acceptable

The study team agreed with AIR's assessment of the current system, particularly the concerns related to cost basis, equity, adequacy, transparency, and predictability. This chapter expands upon this comparison with some additional elements from APA's list of principles/characteristics based upon the firm's over thirty years of working with policymakers to develop school finance systems. The full list of these 12 characteristics can be found in Appendix A. Many of the characteristics can only be measured with a full equity study, not done as part of this work. This section will focus on those characteristics that can be evaluated as part of this study. Each characteristic(s) is described and then a brief summary of how well Nevada's funding system meets the characteristic is provided.

The allocation of state support is positively related to the needs of school systems, where needs reflect the uncontrollable demographic characteristics of students and school systems.

The Nevada Plan does not adjust for student characteristics but has a strong focus on the differential costs of school systems (districts). Those differentials in costs are based upon historical expenditure data and may not reflect the current best practice thinking of how to measure/adjust for such costs. While there are funding streams outside of the Nevada Plan that target student characteristics, they are a smaller piece of the overall funding system.

The allocation of state support is inversely related to the wealth of school systems, where wealth reflects the ability of school systems to generate revenue for elementary and secondary education. The Nevada Plan is an equalization formula that measures wealth as part of the distribution formula. Since the Plan only provides differential funding for district characteristics, resources for student needs are not part of the wealth equalized funding stream.

Related to adequacy: (1) the amount of state support allocated to school systems reflects the costs they are likely to incur in order to meet state education standards and student academic performance

expectations; (2) all school systems are spending at adequate levels, and variations in spending among school systems can be explained primarily by differences in the needs of school systems and the tax effort of districts and are not related to differences in school district wealth, and (3) the state has a procedure to define and measure the adequacy of revenues school systems obtain for elementary and secondary education and periodically determines whether adequate revenues are available in all school systems.

All three characteristics examine a state's funding system against the expected costs of meeting state standards. Though Nevada has in the past examined what these cost levels might be,[10] the state's current funding system is not adequacy-based. Later in this report, two adequacy approaches are discussed and funding levels to meet this target are identified. If Nevada were to move towards an adequacy-based system, a procedure to periodically update funding figures should be put in place.

The school finance system covers current operating expenditures as well as capital outlay and debt service expenditures.

The Nevada Plan along with the outside funding streams attempts to address the current operating expenditures of districts, but the state does not provide a comprehensive system to support district capital needs. Districts raise funds for capital outlay locally.

Overall, Nevada's system directly accounts for district characteristics within the Nevada Plan and provides some adjustments for student characteristics with dollars outside the plan. The state equalizes much of the funding system but few dollars are related to student need. Nevada's funding system is not cost-based and capital needs are systemically supported by the state.

School systems have a reasonable amount of flexibility to spend the revenues they obtain as they want, provided they are meeting, or making acceptable progress toward meeting, state education standards and student academic performance expectations.

Districts have a reasonable amount of flexibility in how they use funding through the Nevada Plan. However, resources through categorical funding streams are limited in their use.

Stakeholder Feedback

Stakeholder feedback was primarily collected through an online survey conducted in July. The survey was open to all educators, parents, students, and community members. District superintendents were sent a notice to share with their staff and communities. The Department of Education also promoted the survey through communications and social media channels. In at least one district, local media provided coverage of the survey. Details in the participation section give more information on the survey respondent pool.

Survey questions were focused on gauging stakeholder perceptions about how well the current funding system met a number of the principles discussed in the prior section including equity, responsiveness (to

[10] Augenblick, et al. (2006). *Estimating the Cost of an Adequate Education in Nevada.*

student need and district characteristics), transparency, flexibility, and adequacy. Through an open response question, stakeholders were then asked what changes, if any, they would make to the current system to ensure that it best served students.

Participation

About 6,900 responses were received from the online survey. Respondents were first asked if they were an educator, parent or community member, and they could select multiple choices. Of those responses, 56 percent were from educators (including teachers, school administrators, other school employees, district administrators, and other district employees). An additional 40 percent were parents (who were not also educators and counted in the percentages above), and the remaining 4 percent were students and other community members.

Responses were received from all school districts and the percentage of total responses by district was as follows: Clark County, 49 percent; Washoe, 37 percent; Carson City, 7 percent; Lyon County, 3 percent; and Churchill, 2 percent. About three percent of responses were from the other 13 districts or state sponsored charter schools.

Results are presented for all responders. Any noticeable variations in responses of educators and the combined pool of (non-educator) parents, students and community members are highlighted.[11] Table 1.1 first presents stakeholder ratings of the current funding system against several key principles of school finance.

Table 1.1: Stakeholder Ratings of Nevada's Current Education Funding System Against Key School Finance Principles

	Poor	Average	Good	Excellent	Unsure	Number of Responses
Equitably distributes resources to school districts	54.99%	24.13%	8.93%	1.56%	10.39%	6,805
Responds to student need (differentiates funding based on at-risk, EL, or special education students)	41.07%	33.70%	14.10%	3.39%	7.75%	6,789
Responds to district characteristics (differentiates funding based on district size, location, etc.)	52.60%	26.23%	8.46%	1.49%	11.22%	6,783
Allocates resources in clear and understandable manner	62.72%	21.95%	6.61%	1.48%	7.23%	6,773
Allows flexibility in how resources are used	51.63%	27.54%	8.54%	1.64%	10.65%	6,771
Provides adequate resources	65.30%	21.37%	7.74%	1.69%	3.90%	6,743

Over half of survey participants rated the current system as poor in terms of equity, responsiveness to district characteristics, transparency (being clear and understandable), flexibility, and adequacy. The adequacy of the system was the area that received the highest percentage of "poor" ratings at nearly two-thirds of respondents (65 percent) holding this opinion. Perceptions of the responsiveness of the

[11] The educator pool includes educators who are also parents/community members. The parent and community member pool then includes parents who did not also indicate they were an educator.

system to student needs were more mixed (41 percent rated the system as “poor,” 34 percent as “average,” and 17 percent as “good” or “excellent”). Between four and 11 percent were unsure how to rate the different aspects of the system. Table 1.2 examines variation in the percentage of respondents that rated the system as “poor” between educators and the public.

Table 1.2: Educator vs. Public Ratings, Percentage of Respondents who rated the Current System as “Poor”

	Educators	Public
Equitably distributes resources to school districts	59.72%	48.89%
Responds to student need (i.e. differentiates funding based upon students' being at-risk, English learners, or in special education)	44.71%	36.36%
Responds to district characteristics (such as differentiating funding based upon district size, location, etc.)	59.08%	44.43%
Allocates resources in a manner that is clear and understandable	68.33%	55.45%
Allows flexibility in how resources can be used	54.42%	48.45%
Provides adequate resources	70.98%	57.91%

Educators were more likely than the rest of the community to rate the current funding system as “poor” by a difference of about 10 percentage points in most of the categories.

Respondents were then asked to indicate the degree to which they agreed or disagreed with several statements that further explored how well they felt the system did in terms of equity, transparency, flexibility, and adequacy (specifically the adequacy of salaries and benefits), as well as if resources were being used efficiently by schools and districts.

Table 1.4: Survey Responses to Statements Probing Equity, Transparency, Flexibility, Adequacy of Salaries/Benefits and Resource Use Efficiency

	Strongly Disagree or Disagree	Strongly Agree or Agree	Unsure	Number of Responses
Similar districts are funded fairly in relationship to one another.	46.87%	18.50%	34.63%	6,774
Taxpayers are treated equally across the state.	63.48%	17.46%	19.07%	6,776
Where a student lives does NOT determine the quality of their education.	75.13%	21.34%	3.53%	6,779
It is easy to understand how funding is determined and allocated.	84.43%	7.87%	7.69%	6,778
The current funding system is flexible enough to allow schools and districts to decide how resources should be used to serve students.	70.26%	14.58%	15.16%	6,762
Schools spend resources efficiently.	50.44%	38.72%	10.84%	6,772
Districts spend resources efficiently.	78.40%	12.26%	9.35%	6,759
Salaries and benefits are at appropriate levels to attract and retain qualified staff.	84.60%	9.79%	5.60%	6,762

In terms of equity, most respondents disagreed that taxpayers were treated equally across the state or that where a student lived did not determine the quality of their education; less than 20% felt similar

districts were funded fairly and over a third were unsure how to answer that question. Respondents continued to report that it was not easy to understand how funding was allocated (85 percent disagreed that it was easy to understand) and that the system did not have the necessary flexibility to allow for schools and districts to decide how resources should be used (70 percent disagreed that this was possible). About 85 percent of respondents said they did not believe salaries and benefits were at appropriate levels to attract and retain qualified staff.

Respondents were also asked if schools and districts spend resources efficiently. About 50 percent of respondents felt schools did not spend resources efficiently, while nearly 80 percent felt districts did not spend resources efficiently. District resource use was the one area of variance between educator and community responses, with 85 percent of educators reporting they disagreed that districts use resources efficiently vs. 71 percent of the public feeling this way.

Finally, survey participants were given the opportunity to provide suggestions for changes they would make to the funding system. The study team did not want to constrain the types of suggestions received, so this question was asked as an open-ended response via text entry. About 4,200 participants submitted a wide range of suggestions. The study team reviewed each response and attempted to categorize them by type in broad categories. Table 1.5 presents the percentage of the open responses that suggested a given category of change.

Table 1.5: Key Suggestions for Changes to Nevada's Current Funding System

General response category	Number of responses	Percentage of total responses
Higher teacher salaries	1,158	28%
More/adequate funding	905	22%
Less district administration staffing/ lower district administration salaries	591	14%
More resources for specific group or program	415	9%
More transparency	386	9%
Use specific revenue stream, either existing or new	375	9%
More resources in the classroom, class supplies	361	9%
Increase equity/fairness	396	8%
Lower class sizes	304	7%
Funding following student/going directly to school	216	5%
Distrust/dislike of district leadership	146	3%
Buildings/capital	134	3%
More flexibility in use of funds	127	3%
The entire system should be replaced	102	2%
Accountability for use of funds/audit	72	2%
Spend less money, either overall or on specific group/program	57	1%
Higher salaries for non-teacher positions	38	1%
Larger districts should be split up into smaller districts	22	1%

Most frequently, participants suggested that higher salaries for teachers were needed (28 percent), followed by the need for more or adequate funding overall (22 percent), and that spending at the district level should be lower through having fewer positions and lower salaries (14 percent). Between five and ten percent of open ended responses recommended: more resources for a specific student group or program (preschool, CTE, English Learners, special education and interventions were most often noted), more funding transparency, using existing revenue streams (like marijuana taxes) or creating new revenue streams, providing more resources in the classroom, lowering class sizes, and having funding follow the student/be sent directly to schools so they can set their own budgets.

II. State Public School Funding Systems

The American Institutes for Research (AIR) 2012 study of the Nevada school funding system included a component summarizing how states fund their public K-12 school systems, including the funding formula used by each state, funding adjustments for small and/or isolated school districts, and also funding (if any) provided for high-need student groups:

- At-risk or poverty students,
- English Learners (ELs),
- Gifted and talented students, and
- Students with disabilities.

The majority of the information from the AIR report was derived from a survey that was sent to each state for the 2010-11 fiscal year.

Building on this study, the study team was tasked with providing updated information about how states currently fund their primary and secondary public education systems.

Updated and Revised Data

For this study, the study team also collected information about state funding formulas, funding for high-need students, and funding adjustments for small/isolated schools, but did so through a review of state legislation, rules, and regulations. When necessary, the study team made use of state reports and studies to confirm our understanding of state policies. In some cases, the study team contacted staff from the different state departments of education to further clarify certain pieces of information. The study team used verified third-party studies for information about vocational/career/technical programs, state grade weighting, and regional cost adjustment policies. Unless otherwise listed, the information contained in this chapter is updated for the 2018-19 school year.

The chapter is divided into three sections: 1) the funding system used to distribute aid for public K-12 schools is reviewed across states to provide a context for discussion of student needs, 2) mechanisms used to pay for high-need students are discussed, and 3) state factors for distributing additional funding to small/remote schools is examined, along with state policies toward career/technical programs.

State Funding Formulas

The cost of educating public K-12 students is divided between local, state, and federal resources. The only exceptions to this are Hawaii and the District of Columbia, which both operate as single school districts. The remaining 49 states distribute their state-level education funding to school districts or charter schools. While no two states distribute their funding in the exact same manner, the majority of states use two basic forms of school funding (Table 2.1):

- **Foundation Formulas** (33 states) – A foundation formula begins with a per-pupil funding amount that is theoretically sufficient to educate a general education student to state standards (also known as the "foundation" or "base" funding amount). Many states choose to supply districts with additional funding for high-need student populations through the use of additional weights in the funding formula. For example, if a state determines that it would cost districts 20 percent more to educate an ELL student, the formula would provide these students with an additional weight of 0.2.

- **Resource Allocation Systems** (eight states) – This type of system is sometimes known as the "position allocation" or "teacher allocation" system because it guarantees that school districts and charter schools have a certain number of teaching positions. This type of formula determines the number of teachers and other educational staff that schools are entitled to based on their enrollment. States then provide some form of operational funding for maintenance, technology, and utility costs based either on a per-pupil amount or a teaching position amount. Under these types of systems, school districts are often locked into how they can expend their funding based on the state formula.

Three states (Georgia, Maine, and Virginia) have funding systems that contain elements of both foundation formulas and position allocation systems. For example, Georgia makes use of a foundation-type formula that determines the foundation amount based on a type of resource allocation system. The state determines the per-student foundation amount by calculating the minimum cost of providing one teaching position for every 23 students in a school district. An amount is then added to this base funding level that includes the cost for teacher specialists, counselors, operational costs, additional teaching days, indirect costs, staff time development, and media room costs. Compared to funding using a resource allocation system, districts have much greater freedom in how they expend state funds.

Several states have funding systems that do not fit neatly into any specific category. Massachusetts and Wyoming have systems that provide funding to districts that varies based on certain education inputs. It is similar to the foundation method in that students with different education needs receive different amounts of funding. However, this type of system is based on educational inputs and does not utilize a single base or foundation amount. Michigan uses a system where the state controls almost all of the education funding decisions. Districts are required to send most of their local property tax collections to the state. These local tax dollars are combined with state funds and then distributed back to districts. This leaves most funding-level decisions up to state policymakers. Vermont's system allows districts a great deal of flexibility to determine their own funding levels. The state then provides equalization payments to districts based on the difference between their proposed education budget and their local ability to raise funding.

Table 2.1: State Funding Formulas (2018-19)

Funding Formulas	States
Foundation Formulas (33)	AK, AR, AZ, CA, CO, CT, FL, IA, IL, IN, KS, KY, LA, MD, MN, MT, MO, NV, NH, NJ, NM, NY, ND, NE, NV, OH, OK, OR, RI, SC, TX, UT, WA
Position Allocation Systems (8)	AL, DE, ID, NC, SD, TN, WA, WV
Hybrid Systems (3)	GA, ME, VA
State Operates as a Single District (2)	DC, HI
State Specific Systems (5)	MA, MI, VT, WI, WY

Determining the Foundation Amount

In the 33 states that currently use a foundation formula, 27 establish a single foundation amount for all districts annually through the state's budget process (Table 2.2). Two states (California and Montana) have different foundation amounts based on grade levels. Illinois and New Jersey have foundation amounts that vary by district. Nevada and Nebraska are the only two states that determine a district's foundation funding amount based on previous year expenses. In the case of Nebraska, the foundation funding amount for each district is based on per-pupil expenditures from the previous school year for the 10 districts closest in size (five larger and five smaller). For additional information about state funding formulas see Appendix B.

Table 2.2: State Approaches to Determining the Foundation Formula (2018-19)

How Foundation Amount Is Determined	States
Single Foundation Amount (27)	AK, AR, AZ, CO, CT, FL, IA, IN, KS, KY, LA, MD, MN, MO, NV, NH, NM, NY, ND, OH, OK, OR, RI, SC, TX, UT, WA
Foundation Varies Based on Grade (2)	CA, MT
Foundation Based on Previous Year Expenditures (2)	NE, NV
Varies by District (2)	IL, NJ

Funding for High-Need Student Populations

This section addresses individual student needs and characteristics, including: (1) students with disabilities, (2) English Learners (EL), (3) at-risk students, and (4) gifted and talented students. The section also describes states that incorporate the needs and challenges of school districts in remote areas and small schools in their methods for financing public schools.

Note, that the study team discusses weights, where applicable, in terms of the additional amount above base per student funding. For example, if a state provided 20 percent more funding for at-risk students, the weight would be .20. This differs from the AIR report that would have said the weight was 1.20, including the base funding amount (the "1.0").

Special Education Funding

Under the Individuals with Disabilities Education Act (IDEA), the federal government provides some funding and guidelines on how states should fund services for students requiring special education. Each

state distributes this funding, combined with all other sources of education funding, through various funding mechanisms. Based on our categorization of special education funding mechanisms, there are seven distinct categories:

1. Single student weight or dollar amount
2. Multiple student weights
3. Census-based allocation
4. Resource-based allocation
5. Reimbursement
6. Categorical grant
7. State funding for high-cost students

The following information was retrieved from state statutes and regulations and, where appropriate, the citation is provided.

Some states have a hybrid system that fall into more than one category; however, states were sorted into the category with which they most closely align. Table 2.3 shows which states use which mechanism to fund special education students.

Table 2.3: State Funding for Special Education Students (2018-19)

Mechanism	States
Single student weight or dollar amount (11)	AK, LA, MD, MO, NV, NH, NY, NC, ND, OR, WA
Multiple student weights (16)	AZ, CO, FL, GA, IN, IA, KY, ME, MN, NM, OH, OK, PA, SC, SD, TX
Census-based allocation (5)	AL, CA, ID, MA, NJ
Resource-based allocation (8)	DE, HI, IL, MS, TN, VT, VA, WV
Reimbursement (5)	MI, NE, RI, WI, WY
Categorical grant (2)	MT, UT
State funding for high-cost students (2)	AR, CT
Other (1)	KS

Appendix C provides a brief description and citation for each state's special education funding mechanism.

Single student weight or dollar amount

There are 11 states that use a single weight or dollar amount to fund special education students. Under this method, all special education students are treated the same, regardless of the actual cost or resources required. Weights vary between states. For example, in New York, any student who requires special education receives an additional weight of 1.41 (McKinney's Education Law § 3602). Similarly, in North Dakota, special education students receive an additional weight of 0.082 (NDCC, 15.1-27-03.1).

Multiple student weights

Instead of providing a single weight for all special education students, 16 states provide multiple student weights, based on the severity of disability, resources required, or specific disability. For example, New Mexico provides four weights, ranging from an additional 0.7 to 2.0, based on the severity (N.M.S.A. 1978, § 22-8-21). Texas provides additional weights, ranging from 0.1 to 4.0, based on where the student is educated and the resources required (V.T.C.A., Education Code § 42.151). South Carolina provides 10 different weights based on the student's disability (Code 1976 § 59-20-40).

Census-based allocation

States who use a statewide, census-based number for special education funding assume all districts in the state, regardless of their actual student composition, have the same percentage of special education students. For example, Alabama assumes five percent of students receive special education services and provides that five percent with additional teaching resources (Ala.Code 1975 § 16-13-232). In Idaho, districts receive special education funding at a rate of six percent of a district's total enrollment in kindergarten through sixth grade and 5.5 percent of a district's total enrollment in seventh through 12th grades. Idaho then uses a resource-based allocation to distribute resources to districts (I.C. § 33-1002).

Resource-based allocation

There are eight states that primarily use a resource-based allocation to fund students in special education. Under a resource-allocation model, states distribute resources (e.g. teachers, aids, specialists, and technology) instead of dollars, based on the number of students identified as special education. For example, Delaware has a higher teacher-to-student ratio for special education students (8.4) than it does for general education students (20) (14 Del.C. § 1703). Similarly, Illinois distributes teachers, aids, and psychologists based on the number of identified special education students (105 ILCS 5/18-8.15).

Reimbursement

Five states use cost reimbursement methods to support special education. The state generally defines eligible cost categories and the percentage of these costs that will be reimbursed by the state. Wyoming is the only state that reimburses 100 percent of the cost of educating special education students (W.S.1977 § 21-13-321). The state of Michigan also reimburses districts for qualified special education expenses, but caps the reimbursement at 75 percent of the cost (M.C.L.A. 388.1652).

Categorical grant

Block grant distributions are based on state allocations and can vary based on availability of funds. Utah uses a block grant distribution funding mechanism where the amount allocated is based on averages of the prior five years, with a growth factor (U.C.A. 1953 § 53A-17a-111).

Funding for high-cost students

Because of the range in costs of educating students who require special education, states will often step in to lessen the burden on districts by providing additional funding for very high-cost students. This funding mechanism is often layered on top of other funding mechanisms (e.g. New Hampshire,

Massachusetts, and Maine). However, in Connecticut and Arkansas state funding is exclusively for very high-cost students.

Funding for Poverty/At-Risk Students

Although there are more than 20 methods that states use to define at-risk status, students most often defined as at-risk are students who qualify for free or reduced priced lunches through the National School Lunch Program, meaning their family income falls below 130 percent or 185 percent of the federal income poverty line, respectively. Studies have found a connection between providing additional funding for these low-income, at-risk students and increased academic success. The second most common identification method is students who do not maintain satisfactory academic progress.

Three states (Alaska, Delaware, and South Dakota) do not provide additional state funding for at-risk students. The remaining 47 states can be divided into four categories. Descriptions of the categories are provided below in Table 2.4 and an explanation of each state's funding mechanism for at-risk students can be found in Appendix D.

Table 2.4: State Funding for At-Risk Students (2018-19)

Mechanism	States
Single student weight or dollar amount (31)	AL, AZ, CA, CT, HI, IN, IA, KY, LA, ME, MO, MA, MI, MN, MS, MO, NH, NM, NV, NY, ND, OH, OK, OR, RI, SC, TX, VT, WA, WV, WY
Multiple student weights (8)	AR, CO, IL, KS, NE, NJ, PA, VA
Categorical grant (4)	FL, MT, UT, WI
Resource-based allocation (4)	GA, ID, NC, TN

Single Weight or Dollar Amount

There are 31 states that use a flat weight or dollar amount per student to provide additional funding for at-risk students. For example, West Virginia provides an additional $18 per student for the total number of students enrolled in a district (W. Va. Code, § 18-9A-21). In contrast, Maine identifies students who are eligible for free or reduced price meals as at-risk and provides an additional weight of 0.15 just for those students (20-A M.R.S.A. § 15675).

Multiple Weights or Dollar Amounts

When states fund at-risk students through multiple weights or dollar amounts, it is usually a sliding scale based on the concentration of at-risk students in a district. There are eight states that use this funding mechanism. Pennsylvania uses two different additional weights (either 0.3 or 0.6), based on the concentration of at-risk students in a district (24 P.S. § 25-2502.53). Similarly, Nebraska uses seven different weights, ranging from an additional 0.0375 to 0.225, where the weight increases as the percentage of at-risk students increases (Neb.Rev.St. § 79-1007.06).

Categorical Grant

Four states provide funding for at-risk student through a categorical grant based on state appropriations. For example, Florida provided $712,207,631 for the 2017-18 fiscal year for its Supplemental Academic Instruction program. Districts can submit a plan to the state to receive funding through this program.

Resource-Based Allocation

There are four states that use a resource-based allocation for at-risk students. Under this model, states allocate resources, like teachers and aids, based on the number of at-risk students. For example, Tennessee uses class-size reduction to provide additional resources to at-risk students. The teacher-to-student ratio increases to 1:15 class size reduction for grades K-12, which is estimated to be the equivalent of $542.27 per identified at-risk student (T. C. A. § 49-3-361).

Funding for English Learners

All but two states – Mississippi and Montana – provide additional funding for EL students. Table 2.5 divides all 50 states into categories based on the funding mechanism used to fund EL students in that state.

Table 2.5: State Funding for English Learners (2018-19)

Mechanism	States
Single weight or dollar amount (25)	AK, AZ, AR, CA, FL, GA, IA, KS, KY, LA, MD, MO, NE, NH, NJ, NM, OK, OR, PA, RI, SC, SD, TX, VT, WY
Multiple student weights (10)	CO, HI, IN, ME, MA, MI, MN, NY, ND, OH
Categorical Grant (6)	AL, CT, ID, NV, UT, WV
Resource-based allocation (5)	DE, NC, TN, VA, WA
Reimbursement (2)	IL, WI

Additional information about how each state provides funding for EL students can be found in Appendix E. Descriptions of the categories and state examples are below.

Single Weight or Dollar Amount

Half of the states use a flat weight or dollar amount to fund EL students. Under this model, districts receive the same amount of funding per student, regardless of the concentration or student's ability. For example, Arkansas provides an additional $338 per identified EL student (A.C.A. § 6-20-2305) and California provides an additional 20 percent through a student weight of 0.2 (West's Ann.Cal.Educ.Code § 42238.02).

Multiple Student Weights

Of the 10 states that use multiple student weights to fund EL students, some states determine weights based on the amount of time a student has been classified as an EL (e.g. Ohio [R.C. § 3317.016]), based on the proficiency of the students (e.g. North Dakota [NDCC, 15.1-27-03.1]), or based on the

concentration of students in a district (e.g. Maine [20-A M.R.S.A. § 15675]). Under this model, additional funding can be provided to students with additional need.

Categorical Grants

There are six states that use categorical grants, based on state appropriations, to fund EL students. For example, Idaho appropriated $3.82 million for the 2017-18 school year to serve all EL students in the state (2017 Idaho House Bill No. 287, Idaho Sixty-Fourth Idaho Legislature, First Regular Session – 2017). In West Virginia, a county board must apply to the state superintendent to receive EL funding (W. Va. Code, § 18-9A-22).

Resource-Based Allocation

Five states distribute monies for EL students through resources instead of through dollars or weights. In North Carolina, there is a minimum threshold districts must meet in order to receive funding. Eligible Local Education Agencies (LEAs) or charter schools must have at least 20 students with limited English proficiency (based on a three-year weighted average headcount), or at least 2.5 percent of the students classified as limited English proficiency to receive funding. There is also a cap of 10.6 percent. Similarly, the state funding formula in Tennessee provides districts with funding for an additional teaching position for every 20 EL students and an additional interpreter position for every 200 EL students (T. C. A. § 49-3-307).

Reimbursement

Illinois and Wisconsin provide state reimbursement to districts for the additional cost of educating EL students. In Illinois, each school district is reimbursed for the amount by which such costs exceed the average per-pupil expenditure by a school district for the education of children of comparable age who are not in any special education program (105 ILCS 5/14C-12).

Funding for Gifted and Talented Students

There are thirteen states that have no state-level program for gifted and talented students in statute. Additionally, two states (Illinois and Maryland) have programs in statute, but are only funded if there is money available. The remaining 35 states have funding mechanisms for gifted and talented students that can be sorted into six categories (Table 6).

Table 2.6: State Funding for Gifted and Talented Students (2018-19)

Mechanism	States
Categorical Grants (11)	AR, CO, FL, ID, IN, ME, MT, NE, OR, UT, WI
Single weight or dollar amount (10)	AK, GA, IA, LA, MN, NV, OK, SC, TX, WY
Resource-based allocation (5)	DE, MS, OH, TN, VA
Census-based allocation (4)	AZ, HI, NC, WA
Reimbursement (3)	CT, ND, PA
Multiple student weights (2)	KY, NM

A unique challenge that states face is how to identify gifted and talented students. Parental identification generally leads to over-identification; whereas identification from a standardized test is expensive and time-consuming. Similarly, states must decide whether to define gifted and talented as high intelligence or high ability. More detailed descriptions of each state's funding mechanism for gifted and talented student can be found in Appendix F.

Categorical Grants

There are 11 states that provide funding for gifted and talented students based on categorical funding and state appropriations. In Indiana, for example, the state appropriated $12.5 million for the 2016-17 school year. Schools can then apply to the state to receive some of that funding under the High Ability Program (IC 20-36-2-1). In contrast, there is no application process in Utah for the $5 million under the Enhancement for Accelerated Students (U.C.A. 1953 § 53A-17a-165).

Single Weight or Dollar Amount

Eleven states provide a flat weight or dollar amount per student identified as gifted and talented. South Carolina uses this model and provides an additional 15 percent per student. There is also a district minimum of $15,000, regardless of the gifted and talented student count (S.C. Code of Regulations R. 43-220). Louisiana only provides funding for gifted and talented students who have an Individualized Education Program (IEP). Louisiana provides an additional weight of 0.6 for gifted and talented students (2017 La. Sess. Law Serv. Hs. Conc. Res. 7 [WEST]).

Resource-Based Allocation

When funding gifted and talented students, five states primarily use a resource-based allocation system. Under a resource-allocation model, states distribute resources (teachers, aids, specialists, and technology) instead of dollars, based on the number of students identified. For example, Virginia provides one additional teacher for 1,000 students identified as gifted and talented (2016 Virginia House Bill No. 29, Virginia 2017 Regular Session). Similarly, Mississippi provides one teacher for 20 identified and participating students, and a second teacher for every 40 students (Miss. Admin. Code 7-96).

Census-Based Allocation

Under this funding model, four states assume a flat percentage of gifted and talented students in a district, regardless of the actual demographics. For example, Arizona provides $75 per pupil for four percent of the district's student count, or $2,000, whichever is more (A.R.S. § 15-779.03). Hawaii assumes that three percent of each school is gifted and talented and provides an additional weight of 0.265.

Reimbursement

Three states reimburse the district for part of the expenses incurred from educating gifted and talented students. In Connecticut, for example, the state only reimburses if the cost exceeds 4.5 times the average per-pupil expenditure (C.G.S.A. § 10-76a and C.G.S.A. § 10-76g).

Multiple Student Weights

Two states – Kentucky (KRS § 157.200) and New Mexico (N.M. Admin. Code 6.29.1) – provide funding for gifted and talented education based on the degree of modification a student needs and the cost of providing those modifications.

Funding for Remote and Small Schools

Some states have adjusted their school funding formulas to consider district size. States have made these adjustments to their funding formulas based on research showing that small schools/districts tend to face higher costs. Data from the United States Census shows that small districts (those with under 3,000 students) have per-pupil expenditures that are $1,901 (16.6 percent) above the national average.[12] There are several reasons why small districts tend to face higher per-pupil costs, but most center on the fact that larger districts can take advantage of economies of scale and small districts cannot. Some states provide additional funding to all of their small districts; for example, Oklahoma provides any district with 529 or few students with additional funding.[13] However, a number of states only provide additional funding to their small districts that are geographically isolated. These geographically isolated, small schools are often referred to as "necessarily small" schools to acknowledge that some schools, though small, must exist to serve students in certain communities. The study team found that 11 states provide small schools or districts with additional funding regardless of their location, 10 states only provide additional funding to small schools or districts that are also geographically isolated, and eight states provide additional funding for both small schools and districts and schools that are isolated (Table 2.7).

Table 2.7: Stand Funding for Remote and Small Schools (2018-19)

Mechanism	States
Small School Funding (11)	AK, CO, KA, LA, MO, NE, NM, NC, SD, VT, WY
Isolated School Funding (10)	AR, CA, FL, GA, MA, MN, MT, OR, UT, WI
Funding for Both Isolated & Small (8)	AZ, ID, MI, NY, OK, TX, WA, WV

Other Individual Student Needs and Characteristics

The 2012 AIR report also examined other state policies that could impact a district's school funding. One issue that districts have to address are the additional costs involved in providing students with additional career and technical educational (CTE) opportunities. A 2017 study found that 47 states provide their districts with some form of additional funding to address the additional cost of CTE programs.[14] The only states that do not provide additional CTE funding are Kansas, Nebraska, and New Mexico. Some states provide additional funding through a weight for each student enrolled in a CTE program; for example, Florida provides districts with 100.1 percent additional funding for each CTE student. Some states, such as Connecticut, provide funding but only to designated CTE centers. Other states, such as Kentucky, provide funding to both CTE centers and to school districts that opt to provide their own CTE programs.

[12] Griffith, Michael. *In Education Funding Size Does Matter*. 2017. https://www.ecs.org/in-education-funding-size-does-matter/
[13] Oklahoma Statutes: Section 70-18-201.1(B)(3)(a)
[14] EdBuild, FundEd: Career and Technical Education data base, http://funded.edbuild.org/reports/issue/cte/in-depth

There can be a different level in cost to deliver educational services based on the grade a student is enrolled in. This is due to the fact that many states have smaller class size requirements for kindergarten to third grade, thus producing a higher cost for these grades. In addition, increases in course offerings can create increased costs for high schools. The majority of states (32) provide some additional funding to districts based on the grades their students are enrolled in.[15] The states that do not provide any additional grade weighting are: Alaska, Colorado, Indiana, Iowa, Kansas, Kentucky, Maryland, Mississippi, Missouri, Nebraska, New Hampshire, New York, Oregon, Pennsylvania, Rhode Island, South Dakota, West Virginia, and Wyoming.

The cost of providing educational services in a state can vary based on a district's geographic location. Some states adjust their school funding formulas to address these differences in costs. These adjustments are commonly referred to as "Regional Cost Adjustments." A 2015 study found that 11 different states provide some form of regional cost adjustment in their school funding formula.[16] In some cases these adjustments are based on the cost of incurred in regional markets (Maine), in others they are based on the cost of wages in a community (Massachusetts), while in others they are based on a cost-of-living index (Wyoming).

[15] EdBuild, FundEd: Grade Level Funding, http://funded.edbuild.org/reports/issue/grade/in-depth
[16] Taylor, Lori L., Options for Updating Wyoming's Regional Cost Adjustment, October 2015. http://www.wyoleg.gov/InterimCommittee/2015/SSRRpt1001AppendixC-1.pdf

III. Updating 2012 AIR Study Analyses

Local school districts may vary in their costs of providing an education to students for two basic reasons. The first is choices made by district policymakers that may increase per-student costs. These may include policies for offering smaller class sizes or a wide range of course offerings. The second reason includes factors impacting costs that are beyond the control of local policymakers, such as the number of special need students enrolled in the district (such as at-risk, EL, or special education students); the size of a district's student enrollment; or the cost of input prices for providing education services (e.g. the level of wages and benefits needed to attract and retain staff, the costs of instructional materials and technology, and the cost of energy). The American Institutes for Research (AIR) report referred to these three uncontrollable cost areas as: 1) student needs, 2) scale of operations, and 3) geographic differences in resource prices.

In order to provide a set of options for Nevada policymakers to consider, the AIR initially attempted to identify a set of peer states with similar student and geographic characteristics to Nevada's school districts from which to draw best practices for adjusting funding to address the three uncontrollable cost areas. However, due to the unique circumstances found in Nevada (e.g. a small number of school districts and the existence of one district that is much larger than the state's other districts), AIR was unable to identify any states that were similar to Nevada across all of its selection criteria. Instead, it found subsets of states that were similar to Nevada in one or two areas. As a result, AIR instead identified the states with the largest funding adjustments in each of the three cost areas. On the following page, Table 3.1 on the following page shows how AIR ultimately identified states that were similar to Nevada by the various selection criteria organized under the larger categories of student need, scale, and revenue sources.

Following a similar analysis, the study team also found there is not a subset of states reasonably similar to Nevada across all relevant dimensions. As a result, the basic analytical approach used by AIR is followed here. The starting point for the study team consisted of the states identified by AIR as providing robust funding adjustments for each of the cost factor areas (student need, scale, and geographic cost differences). The study team reviewed the latest information for the funding adjustments (e.g. adjustments for students in poverty, EL students; adjustments for district size and population density; and adjustments for geographic cost differences) for each of the states listed. There were no substantive changes to these adjustments in any of the states identified by AIR.

Table 3.1: States with Similar Characteristics Identified by AIR

Student Needs			Scale of District Operations					Revenue Sources		
Percent Poverty or FARM Eligible	Percent English Learners	Percent Special Education	Student Density	Herfindahl Index[17]	Percent of Districts by Locale[18]	Percent of Statewide Enrollment by Locale	District Enrollment Size	Percent of Revenue from Local Sources	Percent of Revenue from State Sources	Percent of Revenue from Federal Sources
CO	AZ	CT	AK	SC	FL	FL	FL	CA	AL	AL
DE	CA	IA	FL	UT	MA	GA	GA	GA	KY	IN
KS	CO	LA	ID	WV	MD	MD	KY	KS	SC	KY
MT	KS	MO	MT		NJ	UT	LA	KY	WV	MT
SD	OR		ND		RI	VA	MD	LA		SD
WY	TX		NM		UT		NM	MI		TN
	UT		WY				TN	OK		TX
							UT	OR		WA
							VA	SC		WV
								TN		
								WV		

Source: AIR

[17]The Herfindahl Index is used to measure the distribution of students in schools within a district. The index ranges from 0 to 1. Lower values indicate a more even distribution of enrollment across a district's schools, while higher values a more uneven distribution of enrollment across schools.

[18] Locale refers to the locale categories used by the National Center for Education Statistics of U. S. Department of Education to classify school districts by geographical designations: city, suburban, town, and rural.

The following sections identify the implicit funding weights for each student group. Note, that the study team discusses weights in terms of the additional amount above base per student funding. For example, if a state provided 20 percent more funding for at-risk students, the weight would be .20. This differs from the AIR report that would have said the weight was 1.20, including the base funding amount (the "1.0").

At-Risk/ Poverty

Table 3.2 presents the 10 states the AIR report identified as having the highest "implicit" poverty funding weights. These implicit weights were determined using a regression analysis to measure the relationship between student free and reduced lunch (FRL) concentration and state and local per-student funding. While these 10 states showed the highest rate of increase in state and local funding as FRL concentrations increased, they were not necessarily the highest spending states in terms of overall per-pupil state and local funding. The state and local revenues in six of the 10 states (Arkansas, Colorado, Georgia, Kentucky, South Dakota, and Utah) were well below the 2010 national average of $10,870.[19] Weights are shown as the additional funding amount.

Table 3.2 Implicit Poverty Weights

State	Implicit Poverty Weight
Minnesota	.34
South Dakota	.28
New Jersey	.27
Arkansas	.25
Ohio	.25
Massachusetts	.18
Indiana	.17
Kentucky	.17
Utah	.16
Connecticut	.13
Average	**.22**

Table 3.3 provides an update to FY 2018 of the at-risk funding mechanisms for these 10 states. None of the states significantly changed the method by which they provided additional funding to poverty or at-risk students from the FY 2011 information presented in the AIR report.[20] Of the five states with specific poverty weights or per poverty student dollar amounts, three made relatively modest changes to the weight or amount, while two (Connecticut and Kentucky) were unchanged.[21] Other changes since 2011

[19] Cornman, S.Q., Young, J., Herrell, K.C. (2012). *Revenues and Expenditures for Public Elementary and Secondary Education: School Year 2009–10* (Fiscal Year 2010) (NCES 2013-305). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved from http://nces.ed.gov/pubsearch.

[20] State funding formula information used in the AIR report was largely taken from the 2011 edition of Verstegen's *Quick Glance at School Finance: A 50 State Survey of School Finance Policies and Programs, Volume I*. Retrieved from https://schoolfinancesdav.wordpress.com/a-50-state-survey-of-school-finance-policies-2011/

[21] The at-risk equalization weights in New Jersey were reduced from 1.47 for districts with concentrations less than 20 percent and 1.57 for districts with concentrations greater than 60 percent to 1.41 for concentrations less than 20 percent and 1.46 for concentrations greater than 40 percent. Arkansas' per eligible student amounts for its National School Lunch Categorical grant program increased from $1,488 for concentrations greater than 90 percent, $992 for concentrations ranging from 70 percent to

include a change in the student count used in Indiana's Complexity Index calculation from students eligible for FRL to those eligible for the Temporary Assistance for the Needy Families (TANF) program, the Supplemental Nutrition Assistance Program (SNAP), or those in foster care. Utah consolidated annual appropriations for several programs targeted to at-risk students into the Enhancement for At-Risk Students Program Grant at about the same level of funding.

Because the changes in these states' poverty student funding programs were relatively minor since publication of the AIR report, APA did not see a need to update the implicit poverty weight analysis.

Table 3.3: Funding Mechanisms for Poverty Students for Top 10 States Identified in AIR Report

	FY 2018 Poverty Funding Mechanisms
Arkansas	National School Lunch Categorical grants, equaling: greater than 90% FRL: $1,576 per eligible student; 70%–90% FRL: $1,051 per eligible student; Less than 70% FRL: $526 per eligible student. State also provides Alternative Learning Environment (ALE) funding of $4,640 per FTE per ALE student.
Connecticut	Weight of 1.33 based on Title I eligible student count. In FY 2019 the formula will change to FRL, 1.3 weight + another 5% per FRL student > 75%
Indiana	Provides funding via Complexity Grant formula, based on count of students eligible for TANF, SNAP, or in foster care. Complexity grant: $3,539 (FY 2017) X complexity index (percentage of district students eligible for TANF, SNAP, or in foster care).
Kentucky	Weight of 1.15 applied to count of students eligible for free lunch
Massachusetts	Provides additional amount per eligible, poverty student based on concentration deciles. Per-student amounts range from $3,816.89 to $4,180.91. Poverty students are defined as being eligible for SNAP, Transitional Assistance for Families with Dependent Children, Medicaid, or are in foster care.
Minnesota	Provides Compensatory Revenue equal to: (Basic Formula Allowance – $415) x .6 x Compensatory Pupil Units (1.0 free lunch + 0.5 reduced-price lunch)
New Jersey	Provides At-Risk Equalization Aid using sliding scale of weights from 1.41 for districts with less than 20% FRL up to 1.46 for districts with greater than 40% FRL (FY 2017)
Ohio	Calculates an index based on the percent of economically disadvantaged students in a district compared to the state average percentage. The formula is: $272 X ((number at-risk students in district/number at-risk students in state)^2 X number of at-risk students in district)
South Dakota	No funding program targeted to at-risk or poverty students other than federal Title I
Utah	Provides annual appropriation for the Enhancement for At-Risk Students Program. Funds are distributed based on count of low-performing, poverty, high-mobility, and EL students

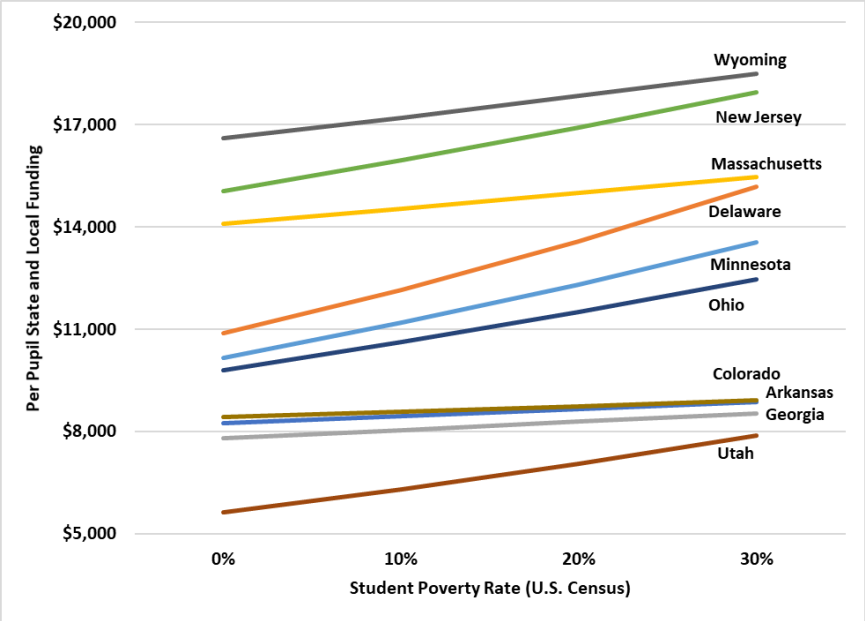
However, a more recent analysis of state funding for poverty students is available from the Education Law Center (ELC) at Rutgers University. In their most recent report, *Is School Funding Fair*,[22] ELC provides a similar comparison of how state and local per-pupil funding changes as poverty concentrations in

90 percent, and $496 for concentrations less than 70 percent to $1,576, $1,051, and $526, respectively. The per eligible student poverty adjustment used in Massachusetts increased from a range of $2,561 to $3,167 in 2011 to $3,817 to $4,181 in 2018.

[22] Baker, et al. (2018).

school districts increase using FY 2015 data (the AIR report uses FY 2010 data). This analysis plots total state and local per-pupil funding for districts with poverty concentration levels of 0 percent, 10 percent, 20 percent, and 30 percent. Those states in which funding increases with poverty levels are labeled "progressive," while those in which funding stays flat or decreases with poverty are labeled "regressive." Six of the top 10 states in this analysis overlap with the states identified by AIR. The top 10 states from this analysis consist of Arkansas, Colorado, Delaware, Georgia, Massachusetts, Minnesota, New Jersey, Ohio, Utah, and Wyoming. Dropped from the AIR list are Connecticut, Indiana, Kentucky, and South Dakota. The states not found on the AIR list are Colorado, Delaware, Georgia, and Wyoming. Figure 3.1 shows graphically the trajectory of state and local funding in these states as concentration of poverty increases. Although Utah has the lowest overall level of state and local per-pupil funding, its finance system provides the greatest rate of per-pupil funding increase based on concentrations of poverty. The two states with the highest per-pupil state and local funding, Wyoming and New Jersey, rank sixth and fifth, respectively, in the rate of increased funding by poverty level.

Figure 3.1: State Education System Funding Progressivity



Source: Education Law Center, Rutgers.

Table 3.4 summarizes the funding mechanism for students in poverty or who are at-risk in the four states not included in the AIR poverty analysis.

Table 3.4: Funding Mechanisms for Poverty Students in States Not Included in the AIR Report

State	FY 2018 Poverty Funding Mechanisms
Colorado	At-risk count includes FL eligibility and students excluded from state assessments due to limited English proficiency. Weights range from 1.12 to 1.30 depending on at-risk %.
Delaware	Provides 1 unit (teacher FTE) per 250 students.
Georgia	Provides funding through three different programs: • Early Intervention Program, uses following weights to provide extra teachers at 11:1 student/teacher ratio: 2.0348 Kindergarten; 1.7931 Grades 1-3; 1.7867 Grades 4-5 • Remedial Education Program, uses weight of 1.3087 to provide extra teachers at 15:1 student/teacher ratio for grades 6-12 • Alternative Education Program, used weight of 1.4711 to provide extra teachers at 15:1 student/teacher ratio for grades 6-12 Based on counts of students performing below grade level, in danger of academic failure or eligible for Title I.
Wyoming	Provides teacher tutors, additional student support staff, and extended learning time based on free and reduced-price lunch counts. Also offers Economically Disadvantaged Youth program: $500/ECY if school's FRL > 150% of state average per school type.

English Learners (ELs)

Table 3.5 shows the states with the largest explicit (statutory) weights presented in the AIR report along with an update to the weights in effect for FY 2018. The majority of the weights have not changed between 2011 and 2018. However, the weight in several states did change, with the largest difference occurring in Georgia, where the EL weight increased from .53 in 2011 to 1.56 in 2018. The weight in Florida increased slightly from .15 to .21, while the weights in New Mexico and New Jersey were reduced slightly, from .50 to .35 in New Mexico and from .50 to .47 in New Jersey.

Table 3.5: States with Largest Explicit EL Weights from AIR Report

State	AIR Report (2011)	2018 Weights
Maryland	.99	.99
Missouri[1]	.60	.60
Georgia	.53	1.56
Maine[2]	.53	.53
Oregon	.50	.50
New Mexico	.50	.35
New Jersey	.50	.47
Kansas[3]	.40	.40
Oklahoma	.25	.25
Hawaii[4]	.23	.23
Iowa	.22	.22
Vermont	.20	.20
Florida	.15	.21
Arizona,	.12	.12
Texas	.10	.10
Average	**.39**	**.44**

[1] In districts where EL population exceeds 1.94% or ADA

[2] Weight of 1.70 if < 15 EL students, 1.50 if 15–251 EL students, and 1.53 if >251 EL students

[3] Greater of 1.40 times EL FTE enrollment or 1.185 times all EL enrollment

[4] Weights from 1.06 if fully English proficient, to 1.39 if limited proficiency, to 1.94 if non-English proficient.

Special Education

The 2012 AIR report took a different approach to reviewing the methods used in state education funding formulas to provide additional resources for serving students eligible for special education services. Rather than reviewing the various adjustments currently used by the states, it instead described a range of student weights based on the findings of the most recent special education cost study conducted by AIR for the Office of Special Education Programs (OSEP) of the U.S. Department of Education.[23] This study examined the pattern of spending for special education over a 30-year period from 1969 to 2000. Based on these findings, it developed a series of per-pupil expenditure estimates by disability type along with cost ratios in comparison to the cost of educating regular education students. However, this study was published in 2005 using data that ends with the 1999-00 school year. As a result, these data fail to capture the impact on costs of more recent advances in services for students with disabilities, such as response to intervention (RTI). However, the research team does concur with AIR that the complexities of funding special education programs limits the utility of comparing the approaches used in states' education funding formulas. Instead, this report relies on the recommendations of education practitioners and education research, as determined through the professional judgment and evidence-based analyses presented in later chapters.

Size (Scale) and Isolation Cost Adjustments

Twenty-nine states provide some sort of an explicit or implicit funding adjustment for differences in the scale of operations of districts or schools (typically determined by student enrollment that falls below a specified threshold), for low population densities within a district, for geographically isolated schools, or for some combination of two or more of these factors. The mechanisms by which states make these adjustments are also varied, ranging from additional student weights, to more complex regression formulas that account for multiple factors, to simple categorical flat grants.

The AIR report listed the 10 states that its analysis found to have the largest "implicit" student weights for scale and/or density. AIR used a regression model similar to the one used to estimate implicit poverty funding weights to calculate its scale/density weight adjustments. The 10 states identified by AIR were, ranked from the highest to lowest implicit weights were:

1. New York;
2. New Mexico;
3. Colorado;
4. Arizona;
5. Texas;
6. Nebraska;
7. Massachusetts;
8. Oregon;
9. Kansas; and
10. California

[23] Chambers, J. G., Pérez, M., Harr, J. J., & Shkolnik, J. (2005). Special education spending estimates from 1969–2000. *Journal of Special Education Leadership, 18*(1), 5–13.

The implicit weights calculated for these states ranged from about 1.80 in California to 3.25 in New York for districts with total enrollment of fewer than 100 students.

Because the AIR report is relatively recent, rather than recalculating the implicit weights from its report, the study team reviewed the funding formulas of all 50 states, relying primarily on Verstegen's 2015 school finance policies survey,[24] to determine if there were any significant changes in their scale/density adjustments that may have affected AIR's rankings. This review found that in nearly all states, including all 10 of the states identified by AIR, only minor changes have occurred since that report. In most of these cases the changes involved adjustments to dollar amounts, indices, or other factors to account for inflation or changes in states' per pupil base funding amounts. One state (Ohio) repealed its small district adjustment along with the rest of its school funding formula in 2011. North Dakota moved from a formula adjustment based on small and isolated schools to one based on school district density. Based on the results of the study team's state policy review, we conclude that no significant changes to the AIR rankings occurred in the time since their report was published.

Geographic Cost of Education Adjustments[25]

Studies of the costs of providing educational services have documented that educating students does not cost the same across school districts. These costs may vary for a number of reasons, some of which are under the control of local school officials (such as decisions about the size of classes or about curricular offerings), but other factors impacting costs cannot be controlled by local school districts. For example, local district officials cannot control the effects of operating in geographical locations that may lack certain desirable amenities (for example, access to the arts or athletic events) or are affected by extreme weather conditions. When distributing funds through a state finance formula, it is appropriate for policy makers to adjust district resources to account for differences in these uncontrollable costs.

The primary way in which geographic location impacts costs is through the price school districts pay for various inputs needed to provide educational services. These may include the price districts must pay to buy materials (e.g. books and technology); to pay for physical inputs, such as utilities and building maintenance; and, most importantly, the price of personnel, such as teachers, administrators, aides, support staff, etc. The importance of personnel costs is reflected in the fact that the bulk of any district's budget is spent on employee salaries and benefits.[26] While all districts purchase these inputs, the specific amount and mix of inputs needed in any individual district depends on the characteristics of that district. For example, a district located in a very warm (or very cold) area will need to spend more on energy than a district located in a more temperate area. Similarly, a district's geographic location may also influence its specific input prices. For example, a district in an area with a high cost of living will need to offer higher wages to attract and retain employees.

[24] Verstegen. (2015).

[25] Much of this section is taken from an analysis prepared by Jennifer Imazeki in Imazeki, J. (2016, June). *A Comparable Wage Index for Maryland*. Denver, CO: APA Consulting.

[26] Odden, A.R. & Picus, L.O. (2014). *School Finance: A Policy Perspective 5th Edition*. New York, NY: McGraw-Hill Education.

Over time, a number of states have adopted some form of adjusting for geographical variation in these costs. Table 3.6 lists states which currently include a geographic cost-of-education adjustment in their state school funding formulas.

Table 3.6: Types of Geographic Cost of Education Adjustments

State	Type of Adjustment
Alaska	Cost-of-Education Adjustments
Colorado	Cost-of-Living Adjustments
Florida	Cost-of-Living Adjustments
Massachusetts	Cost-of-Living Adjustments
Maryland	Cost-of-Education Adjustments
Missouri	Cost-of-Living Adjustments
New York	Cost-of-Living Adjustments
Virginia	Cost-of-Living Adjustments
Texas	Cost-of-Education Adjustments

Three of the most common geographic cost-of-education adjustments are: (1) cost-of-living adjustments, (2) comparable wage indices, or (3) hedonic wage indices. A description of each approach and its advantages and disadvantages is presented below.

Housing-Based Cost-of-Living Adjustment

The first option is to adjust for the cost of living by computing the price of a basket of goods associated with each location (similar to how the Consumer Price Index (CPI) is calculated across time). Typically, that local basket of goods is dominated by housing costs, although the prices of other goods are also usually included.[27] This approach has the advantage of being straightforward to calculate and update over time, as long as data on housing costs and other items in the basket are available. The major disadvantage of a housing-based, cost-of-living adjustment is that it does not include any information about area amenities that may also impact the wages needed to attract and retain workers. Workers will generally accept lower wages to work in locations with pleasant amenities, such as desirable weather or vibrant cultural life. Thus, even though housing costs are higher in such locations, wages may not need to be equally high. A cost-of-living adjustment based primarily on housing and other consumer costs will tend to overestimate the wage differential needed to attract and retain school employees in locations with high costs of living and underestimate it in locations with low costs of living.

Comparable Wage Index

A Comparable Wage Index (CWI) is calculated by measuring the variation in non-teacher wages across localities. A CWI therefore can account for the impacts of both cost of living and area amenities. The assumption is that workers who are similar to teachers in terms of their levels of education, training,

[27] McMahon, W.W. (1996). Intrastate Cost Adjustments. In W.J. Fowler, Jr., (Ed.), *Selected Papers in School Finance, 1994* (NCES 96–068) (pp. 89–114). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

and job responsibilities will have similar preferences as teachers. For example, if non-teacher workers in municipality A are paid, on average, 10 percent more than non-teacher workers in municipality B, then the CWI would suggest that district employees in municipality A should receive 10 percent more revenue for salaries than in municipality B. By examining the regional wage differentials of a large sample of workers who have characteristics similar to teachers, the CWI implicitly accounts for a wide range of factors that influence the salary levels necessary to attract teachers to live and work in particular districts or regions. These include factors, such as cost of living and desirability of place, including climate, cultural amenities, safety, commute times, and recreational opportunities. In comparison, with a hedonic index, the analyst must identify each appropriate variable to be included in the regression equation along with a data source (if one exists). If the analyst miss-specifies the equation or is unable to obtain valid data for one or more of the identified factors, the result of the analysis will be biased, resulting in the cost index over- or under-adjusting school system revenues. Further, by relying on data external to school districts, the CWI specifically excludes cost differences among districts that are under the control of boards of education, such as actual district wages and working conditions, as the economic literature suggests.[28]

Specifically, following Taylor and Fowler (2006), a CWI is created by estimating the following equation:

$$LnAnnualSalary_i = \beta_W W_i + \beta_O O_i + \beta_I I_i + \beta_R R_i + \varepsilon_i$$

In this equation:

- The dependent variable is the natural log of annual salary;
- W_i is a vector of characteristics of worker *i*;
- O_i is an indicator variable for worker *i*'s occupation;
- I_i is an indicator variable for worker *i*'s industry;
- R_i is an indicator variable for the region that worker *i* lives in; and
- ε_i is an idiosyncratic error term.

The resulting coefficients are then used to predict a wage in each region for a worker with average characteristics (i.e. average values of all worker characteristics).

Estimation of this model requires data on individual worker characteristics as well as industry, occupation, wages, and location. These variables are all available in the American Community Survey, which is administered annually.[29] The American Community Survey (ACS) is an ongoing national survey administered by the U.S. Census Bureau, sent to 3.5 million people each year, collecting information on

[28] See Fowler, W. J. Jr. & Monk D. H. (2001). *A Primer for Making Cost Adjustments in Education*. Washington, D.C.: U.S. Department of Education, Office of Educational Research and Improvement and Taylor, L. L., & Fowler Jr, W. J. (2006). *A Comparable Wage Approach to Geographic Cost Adjustment*. Research and Development Report. NCES-2006-321. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.

[29] In 2000 and earlier, the relevant variables were collected on the long form of the decennial census. Taylor and Fowler (2006) discuss how to use Occupational Employment Statistics data from the Bureau of Labor Statistics to update a CWI in the years between censuses; thus, annual adjustments can still be made between census years prior to 2005 when the relevant variables became available annually as part of the American Community Survey.

income, housing, education, and migration, as well as the employment variables already mentioned. The ACS replaced the long form of the decennial census and thus, is the only national source of this type of information. Data with the individual responses necessary to compute a CWI are available in the ACS Public Use Microdata Sample for areas with at least 100,000 residents (called PUMAs or Public Use Microdata Areas). A CWI for any PUMA is therefore relatively straightforward to create and can easily be updated on an annual basis. A CWI also has the advantage of being clearly beyond the control of local districts; it does not use any school-generated data. It can also be used, or easily adjusted for use, for all labor costs (e.g. certified staff, non-certified staff, teachers, administrators, or classified staff).

In contrast, a CWI assumes comparability of workers. The CWI captures average preferences for a location among all non-teacher workers, so using a CWI to adjust for district wage costs assumes teachers have similar preferences as other workers and therefore require similar wage adjustments. This assumption could be strengthened by estimating the CWI with a sample of workers more closely aligned with teachers (e.g. workers with college degrees or workers in industries that require education levels and/or job responsibilities similar to teaching). However, if teacher preferences are systematically different than other worker preferences—an unlikely possibility—then a CWI may not be appropriate.

A CWI is also intended to capture variation across labor markets, generally measured at a broad geographical level (e.g. across a metropolitan area). The smallest area for which a CWI value can be calculated using the ACS data is a PUMA (areas with at least 100,000 residents). In densely populated regions, a PUMA may represent one part of a city or county, but in sparsely populated regions, a PUMA may span multiple counties. A CWI cannot measure cost variations across districts within the measured geographical area, so all districts within that area would necessarily have the same index value.[30] This drawback is related to another potential concern about CWIs: a CWI does not measure variation in wages across districts due to school-specific working conditions. As discussed in the previous section, it is not clear that the state *should* make adjustments for the impact of student characteristics on wages. That said, if a state decided to make such adjustments anyway, a CWI measure would not include variation in wages because of school-specific conditions.

Hedonic Wage Index

Hedonic wage indices are calculated by breaking down variation in current wages due to a number of different identifiable variables. Thus, hedonic wage indices can capture variation due to both geographic location characteristics and student characteristics. Following Chambers (1998), a hedonic wage index for teachers is created by estimating the following equation:

$$LnTeacherSalary_i = \beta_T T_i + \beta_D D_S + \beta_C C_S + \beta_G G_i + \varepsilon_i$$

In this equation,

- The dependent variable is the natural log of a teacher's annual salary;

[30] This is likely to be less important in states with geographically large districts and/or districts that line up with established municipal boundaries, such as Maryland where school district boundaries coincide with county lines.

- T_i is a vector of characteristics of teacher *i* (the most commonly included are gender, race, education, certifications, experience, and any other available measures of teacher quality, such as measures of effectiveness or test scores);
- D_S is a vector of discretionary cost/working condition variables in district *S* (such as class size);
- C_S is a vector of uncontrollable cost/working condition variables in district *S* (the most commonly included are the percentages of high-need or at-risk students);
- G_S is a vector of characteristics for the region that teacher *i* lives and works in (such as housing prices and area amenities like weather, crime or population density); and
- ε_i is an idiosyncratic error term.

The resulting coefficients are then used to predict a wage for an average teacher (with state average values of the variables in T_i) in each district, holding constant the discretionary cost variables.

The data required to estimate this model will depend on the specific variables included. Though the most commonly included variables have been noted above, it is important to recognize that the specific choice of variables to include is ultimately up to the analyst. This can have some benefits, as the model can generate estimates of the impact of specific variables that may be of particular interest to the state. For example, the hedonic method can reveal how much of the locational variation is coming from housing costs, versus how much locational variation is coming from preferences for area amenities (e.g. low crime or desirable weather). Additionally, the hedonic approach explicitly captures and controls for the impact of student characteristics on teacher wages, and thus can generate a distinct value for each district.

In contrast, there may be some variables (e.g. measures of teacher quality or area amenities) that should theoretically be included (because theory and previous research suggest they impact teacher wage costs), but that are excluded in practice due to lack of data. This creates a potential concern: because the model uses directly observed teacher salaries, which are subject to district control, any variation in teacher salaries due to variables that are not specifically included in the model will either (1) be relegated to the error term (and thus left out of the resulting index values), or (2) create bias (potentially of unknown direction and size) in the coefficients of included variables. In both cases, the resulting index will provide a potentially biased measure of true cost variations. Of particular concern is that, to the extent that unobserved/excluded variables are correlated with included cost factors, the hedonic index may overestimate or underestimate true costs. For example, if districts with more special needs students are also less efficient than districts with fewer special needs students, then the coefficients on student variables may be biased upward, rewarding districts with extra revenue for their inefficiency.

It is tempting to try to make up for missing data by including as many specific cost and control variables as possible. However, doing this creates some issues. Including additional variables can reduce the precision with which all the coefficients are estimated; this is particularly salient in states with relatively few districts, such as Nevada. (i.e. smaller samples restrict the number of variables that can be included in the model.) It is also particularly salient when the additional variables are correlated with other

variables already in the model. Furthermore, a larger and more complex model becomes increasingly difficult to update over time. That last point is perhaps the largest drawback of the hedonic approach in general, especially for generating a measure to be used in state policy. The data requirements and statistical complexity of the hedonic approach make calculating and updating even a relatively simple hedonic wage index significantly more difficult and time-consuming than either of the alternative approaches.

Comparable Wage Index versus Hedonic Wage Index

Economic theory clearly suggests that the cost-of-living approach is inferior to the other two approaches. Although all three methods can account for the impact of housing and other costs on wages, the cost-of-living approach fails to capture the impact of area amenities that affect wages. With that in mind, this analysis focuses on the relative merits of a comparable wage index and a hedonic wage index.

When attempting to capture variation in the impact of geographic location on district salaries, the comparable wage approach has multiple benefits over the hedonic approach. First, unlike a hedonic model, a comparable wage model does not require an analyst to decide which specific area costs and amenities to include. With the comparable wage approach, the overall impact of all relevant variables is simply captured by the regional indicator variables. This decreases the chance that the results will be systematically biased and reduces the "noise" in the estimates. Second, the data needed to estimate a comparable wage model are easily accessible on public government websites maintained by federal agencies. By contrast, the hedonic approach requires data on all the specific variables an analyst chooses to include. Generally, these data must be gathered from multiple sources. Sometimes, they can only be gathered through individual data requests, making updates to the index much more cumbersome. There is also a higher chance that data will either stop being collected or that specific variables will change or be defined differently by the collecting agency. Finally, because the comparable wage approach relies on data that are completely outside the control of local school districts, it cuts out any possibility of districts manipulating the system to receive additional revenue (e.g. offering inefficiently high salaries).

One aspect of the hedonic model that may seem advantageous is that it specifically includes student characteristics. Research shows that student characteristics (as variables) do have an influence on teacher salaries. However, if the intention is to use the resulting model to generate a funding adjustment, then the inclusion of student characteristics may provide little benefit. As discussed above, it is unclear whether it is appropriate to compensate districts for the higher wage costs associated with factors, such as the share of special needs students, because there are many ways for districts to address teacher preferences about student characteristics other than offering higher salaries. Although these variables need to be included as controls in any model using actual teacher salaries as the dependent variable, it may not be appropriate to incorporate variation in those variables when calculating the aid adjustment for wage costs. But if that variation is not going to be included anyway, then the comparable wage approach is preferable for the reasons stated above.

If for some reason a state wants to include student characteristics, it is important to recognize that an index based on a hedonic model is no longer a clean measure of the impact of geographic location. Instead, an index based on a hedonic model conflates the impact of both geographic location and district characteristics on wages. Although there are situations where this might be desirable (such as analyses investigating the relative impacts of different variables), it is likely to be problematic in the context of school funding formula adjustments because most states have separate adjustments for those same district characteristics. Typically, analysts estimate the costs of a student characteristic, such as poverty, by looking at the characteristic's impact on *total* expenditures, since student characteristics are likely to require districts to hire more teachers, or buy higher levels of other inputs, in addition to offering higher wages. These costs are then included in state aid formulas separately from adjustments for geographic location, which primarily impact wages. If a state has these separate adjustments for student characteristics, then it may be problematic to include the same student characteristics in an adjustment primarily intended to capture the impact of geographic location on wages. Including student characteristics in such an adjustment may lead to overall revenue adjustments that are larger than necessary for districts with higher concentrations of special needs students.

Finally, one potential benefit of the hedonic approach relative to a CWI is that a hedonic model includes individual area variables. This means a distinct value can be calculated for each individual district, even if student characteristics are held constant. In contrast, a CWI generates the same value for all districts in the same labor market or population center. In practice, this is likely to have relatively little impact because many area variables will have similar values within labor markets. Still, the identical values generated under the CWI could be more difficult to explain politically.

Summary

To summarize, there are three commonly accepted methods used by analysts to capture the geographic variation in the costs of providing education services. These are cost-of-living, CWI, and hedonic wage models. Because of the importance of the geographic variation in wage costs on school district budgets, the focus of this analysis has been primarily on variation in educator wages. While each of these approaches has strengths and weaknesses, the CWI approach has become commonly used in state policy because of the relative simplicity of the model and the availability of data. A CWI is relatively straightforward to create and update on an annual basis; it also has the advantage of being clearly beyond the control of local districts, as there are no data used that are generated by schools. In contrast, the data requirements and statistical complexity of the hedonic approach make calculating and updating even a fairly simple hedonic wage index more difficult than either of the alternative approaches. A hedonic model also conflates variation due to geographic location with costs associated with student characteristics, such as poverty. This may be particularly problematic when those costs are already accounted for elsewhere in the funding system.

IV. Professional Judgement Approach

Introduction and Overview

This chapter presents the results of the professional judgment (PJ) approach. The PJ approach utilizes educator experience and expertise to specify the resources representative schools and school districts need to meet state standards and requirements. These resources can then be "costed out" by applying salary and benefit information and the prices of other resources (such as for technology) to determine the level of funding needed at a per-student level.

For this 2018 study, the PJ approach was implemented in a targeted manner through a limited number of panels. These panels discussed the resources needed to serve students with identified needs—at-risk students (often based on qualification for free and reduced lunch), English Learners (ELs), special education students, and gifted students—above and beyond what might be needed at a "base" level to serve all students. These additional resources are then represented as a series of adjustments, or "weights," relative to the base cost.

PJ Panel Design

APA conducted three professional judgement panels, one to address the resources needed to serve at-risk students, one for EL resources, and one for special education and gifted resources. Each panel included 7–10 Nevada educators, including a combination of classroom teachers, principals, instructional administrators, district administrators, and school business officials. To identify panel participants, APA worked with the Nevada Department of Education (NDE), who reached out to district superintendents across the state to recruit participants based on different roles (teachers, school administrators, district staff) and to provide geographic representation. A total of 23 panelists participated in the three PJ panels. A list of panel members is provided in Appendix G of this report.

Panels were held in April 2018 in Las Vegas. Panelists did not receive monetary compensation for their participation, though meals were provided.

Resources discussed by the panels included: school-level personnel, non-personnel costs, additional supports and services, and district-level resources. Given that resources for each of the targeted student groups is above a base set of resources, but that developing a new 2018 PJ base cost was outside of the scope of the study, each panel reviewed the resources identified as needed at the base level during a 2015 PJ study conducted by APA.

Creating Representative Schools

The PJ panels identified resources for a set of representative schools, which were designed using statewide average characteristics (including size and grade configuration) to represent schools across the state. The school sizes and configurations were determined as a part of the 2015 PJ study. By creating representative schools based on state averages, it allowed panelists from different schools and districts from around the state to "meet in the middle," meaning that the schools might not look like their home schools specifically, but were not so large or so small that they could not envision them and

what resources would be needed. The approach also develops per-student figures that could be applied in each unique district in Nevada, based on the district's actual enrollment figures and demographics. Each panel then addressed three different levels of need for a given student group:

- **At-risk panel**: discussed resources needed at three different concentration levels (if a school had 25 percent, 50 percent, or 75 percent of its students qualifying as at-risk).
- **EL panel**: identified resources for EL students based on three different language acquisition levels on a continuum from entering to monitoring, using World-Class Instructional Design and Assessment (WIDA) language proficiency standards (L1/L2, L3/L4, and L5/L6). The total percentage of EL students was 25 percent, with the proportion in each category varying by school level.
- **Special education panel**: determined resources for three different levels of need—mild, moderate, and severe—related to the percentage of time that a student is in the general education classroom (80 percent or more, 40–79 percent, and less than 40 percent, respectively). Using the statewide average of 12 percent, that translated to seven percent in the mild category, three percent in the moderate category, and two percent in the severe category.

The representative schools used in the panel are shown in Table 4.1.

Table 4.1: Representative Schools

	Elementary School (K-5)	Middle School (6-8)	High School (9-12)
Enrollment	450	750	1,300
Identified Need Populations			
At-risk			
25% concentration	113	188	325
50% concentration	225	375	650
75% concentration	338	563	975
EL (25%)			
L1, L2	32 (7%)	30 (4%)	52 (4%)
L3, L4	68 (15%)	113 (15%)	95 (7%)
L5, L6	14 (3%)	45 (6%)	78 (6%)
Special Education (12%)			
Mild (7%)	32	53	91
Moderate (3%)	14	23	39
Severe (2%)	9	15	26

Summarizing Nevada State Standards

Prior to the commencement of any PJ panel discussions, all panelists reviewed a specific, APA-prepared set of background materials and instructions. In particular, panelists were instructed to identify the resources needed to meet all Nevada standards and requirements (Appendix H). APA prepared a brief

summary document of all of the expectations that the state has for students, schools, and districts, which was then shared with panelists. The document was not meant to be exhaustive, as all panel participants were experienced educators in Nevada; instead, the document was meant to highlight key or recently revised expectations, such as Nevada's new assessments and content standards. This document was reviewed by Nevada Department of Education staff to ensure accuracy.

Professional Judgment Panel Procedures

Once panelists were provided with instructions and background information to guide their efforts, the PJ panels convened. Two APA staff members were present at each panel meeting to facilitate the discussion and take notes about the level of resources needed and the rationale for participant decisions. Panelists were frequently reminded that they should be identifying the resources needed to meet state standards in the most efficient way possible without sacrificing quality.

Each panel first reviewed the resources identified at the base level during the 2015 study. After that review, they discussed the additional resources needed in addition to the base to serve the given student group. Resources reviewed and discussed included:

1. Personnel, including classroom teachers, other teachers, psychologists, counselors, librarians, teacher aides, administrators, nurses, etc.
2. Other personnel costs, including days for substitute teachers and professional development
3. Non-personnel costs, such as supplies, materials and equipment costs (including textbook replacement and consumables), and the cost of offering extracurricular activities
4. Non-traditional programs and services, including before- and after-school, preschool, and summer school programs
5. Technology, including hardware, software, and licensing fees
6. District-level supports, such as administration and resources for maintenance and operations, centralized purchasing or licensing, legal, school board, insurance, data systems, and contracted services

It is important to note that capital, transportation, food services, adult education, and community services were *excluded* from consideration as they were outside the scope of this study.

For each panel, the figures APA recorded represented a consensus among members. At the time of the meetings, no participant (either panel members or APA staff) had a precise idea of the costs of the identified resources. Instead, APA's actual calculations and costing of resources took place at a later date. This is not to say that panel members were unaware that higher levels of resources would produce higher base cost figures or weights; however, without specific price information and knowledge of how other panels were proceeding, it would have been difficult for any individual or panel to suggest resource levels that would have led to a specific base cost figure or weight, much less a cost that was relatively higher or lower than another.

Base Resources Identified in the 2015 PJ Study

This section summarizes the results from the 2015 PJ study, including the resources identified and the resulting base cost figure. For additional detail, please refer to APA's 2015 *Professional Judgment Study Report*.[31]

Key resources recommended for all students during the prior study:

- Small class sizes: 15:1 for K-3rd grade, 25:1 for fourth through 12th grades;
- Professional development and instructional coaches for teachers;
- Student support (counselors, social workers);
- Technology-rich learning environments, including one-to-one student devices and needed information technology (IT) support; and
- Preschool, recommended for all four year olds.

It should be noted that the resources identified by all PJ panels, including the 2015 study panels and the most recent panels, are examples of how funds might be used to organize programs and services in representative situations. APA cannot emphasize strongly enough that the identified resources do not represent the only possible way to organize programs and services to meet state standards. Instead, the identification is meant to estimate the overall cost of adequacy—not to determine the one "best" way to organize schools and districts.

Base School-Level: Personnel

Staffing recommended by the 2015 study PJ panels included:

- Instructional staff, including teachers, instructional aides, instructional coaches, interventionists, librarian/media specialists, and technology specialists;
- Pupil support staff, including counselors, nurses, and social workers;
- Administrative staff, including principals, assistant principals, bookkeepers, attendance monitors, registrars, and clerical/secretarial staff; and
- Other staff members, including school resource officers, in-school suspension teachers, aides for duty and monitoring, and media aides.

Tables 4.2 through 4.4 first identify the school size and the panel-recommended average class size/teaching schedule. The tables then identify the personnel on a full-time equivalent (FTE) basis needed to serve all students regardless of need at the elementary, middle, and high school levels (base education). Teacher FTEs are calculated by dividing the number of students in a school by the average class size, and then at the secondary level by multiplying that figure by the number of classes students are taking compared to the average number of classes a teacher is teaching.

[31] Silverstein, J., Brown, A., Piscatelli, J., Shen, Y. (2015). *Professional Judgement Study Report* for the Lincy Institute at UNLV. Denver, CO: Augenblick, Palaich & Associates. Retrieved at: http://apaconsulting.net/wp-content/uploads/2018/08/NV-Professional-Judgment-Report-.pdf

Table 4.2: Elementary School Personnel as Recommended by 2015 Study PJ Panels, Base Education

School Size and Configuration	K-5, 450 students
Recommended Average Class Size	Grades K-3: 15 to 1 Grades 4-5: 25 to 1
Instructional Staff	
Teachers (Classroom)	26.0
Teachers (Specials)	4.0
Instructional Facilitator (Coach)	2.0
Librarians/Media Specialists	1.0
Technology Specialists	0.5
Pupil Support Staff	
Counselors	1.0
Nurses	1.0
Psychologists	0.2
Social Worker	0.25
Family Liaison	0.25
Administrative Staff	
Principal	1.0
Assistant Principal	1.0
Office Manager	1.0
Clerical/Data Entry	1.0
Other Staff	
School Resource Officer (SRO)	0.25
In-School Suspension	1.0
Aides – Duty, Monitoring	2.0
IT Technician	0.5

Panelists that participated in the 2015 study recommended class sizes of 15:1 in grades K-3 and 25:1 in grades 4-5. They also identified specials teachers for art, music, PE, technology, world language or another enrichment area. Instructional coaching staff was identified to support teachers, as was a full-time librarian, counselor and nurse. Additional student support was provided by a part-time psychologist, social worker and family liaison. An administrative team with a principal and assistant principal, supported by an office manager and a secretarial positon (clerical/data entry) was also identified. Finally, panelists recommended a part-time SRO, IT technician and aides for duty, monitoring and in-school suspension (or alternative to suspension and behavioral support).

Table 4.3: Middle School Personnel as Recommended by 2015 Study PJ Panels, Base Education

School Configuration and Size	6-8, 750 students
Recommended Average Class Size	25 to 1
Schedule	6 period day; teachers teaching 5 periods
Instructional Staff	
Teachers (Classroom)	36.0
Instructional Facilitator (Coach)	3.0
Teacher Tutor/Interventionist	1.0
Librarians/Media Specialists	1.0
Technology Specialists	1.0
Instructional Aides	
Pupil Support Staff	
Counselors	3.0
Nurses	1.0
Psychologists	
Social Worker	0.25
Family Liaison	0.25
Administrative Staff	
Principal	1.0
Assistant Principal	2.0
Office Manager	1.0
Attendance/Registrar	1.0
Clerical/Data Entry	2.0
Other Staff	
School Resource Officer (SRO)	0.25
In-School Suspension	1.0
Aides – Duty, Monitoring	2.0
IT Technician	1.0

2015 Panelists also recommended 25:1 for grades 6-8, with teachers teaching 5 out of 6 classes. Similar to elementary school, instructional coaching staff, a full-time librarian, a full-time technology specialist and a full-time nurse were recommended. Counselors were staffed at a ratio 250:1, and additional student support was provided by a quarter-time social worker and family liaison. An interventionist was also recommended for instructional support. The school's administration included a principal, two assistant principals, an office manager, a registrar and two secretarial positions. Finally, the other staff positions were similarly staffed as compared to the elementary school.

Table 4.4: High School Personnel as Recommended by 2015 Study PJ Panels, Base Education

School Configuration and Size	9-12, 1,300 students
Recommended Average Class Size	25 to 1
Schedule	6 period day; teachers teaching 5 periods
Instructional Staff	
Teachers (Classroom)	62.4
Instructional Facilitator (Coach)	4.0
Teacher Tutor/Interventionist	
Librarians/Media Specialists	1.0
Technology Specialists	1.0
Instructional Aides	
Pupil Support Staff	
Counselors	5.2
Nurses	1.0
Psychologists	
Social Worker	0.5
Family Liaison	0.5
Administrative Staff	
Principal	1.0
Assistant Principal	3.0
Office Manager	1.0
Attendance/Registrar	1.0
Clerical/Data Entry	5.0
Other Staff	
School Resource Officer (SRO)	1.0
Behavior Interventionist	1.0
Aides – Duty, Monitoring	2.0
IT Technician	1.0

The panelists kept the same schedule and the same average class size of 25 for the representative high school as the middle school. The panelists also identified additional pupil support staff, administrative staff, and other staff at similar levels to the middle school. Differences included not recommending an interventionist as differentiation could be provided through robust course offerings, having an additional assistant principal and additional secretarial staff due to the larger school size, as well as having a full-time SRO.

Base School-Level: Non-Personnel Costs

The figures in Table 4.5 show other resources needed in schools, including needs for instructional supplies and materials, equipment, assessment, student activities (sports, extracurricular activities, field trips, etc.) professional development, and assessment.

Table 4.5: School-Level, Non-Personnel Costs

	Base Education
Professional Development	
Additional days per teacher	6 days
PD supplies/training costs	$100/student
Substitutes–days per teacher	10 days
Supplies, Materials, and Equipment (incl. textbooks)	Elem: $165/student Middle: $175/student HS: $350/student
Student Activities	Elem: $35/student Middle: $125/student HS: $250/student

Base School-Level: Additional Resources

Additional Programs

In addition to the personnel and non-personnel costs identified above, the panels also recommended the following additional programs at the base level:

- Full-day preschool for all four year olds at an 18:2 ratio (one teacher and one instructional aide per 18 students);
- After-school programs at middle and high school level;
- Bridge program for entering high school students; and
- Credit enrichment at the high school level.

It is important to note that while our study did not include transportation, panelists felt that sufficient transportation was necessary for extended day and summer school programs to be possible.

Technology Hardware

Panels in 2015 also addressed the technology set up at representative schools, recommending: 1:1 student devices, laptops, and mobile devices for staff; classroom technology set ups (smartboards, document cameras, audio systems, and a printer); one or more fixed labs; computers in the media center; and infrastructure maintenance (switches, routers, etc.). Assuming a four-year replacement cycle, this amounted to an about $250 per-student annual cost for all school technology hardware.

Base District-Level Resources

Due to study scope constraints in the 2015 study, APA did not address base district-level resources, but instead relied on the 2006 adequacy work to identify additional district-level costs beyond the identified

school-level resources. District-level costs—including costs for administration, building maintenance and operation (M&O), insurance, legal expenditures, school board expenses, and other central office purchases—were also identified as part of the base cost. In the 2006 study, district-level resources identified by PJ panels were 25 percent of school-level costs. APA used the same proportions to estimate the district-level costs for the 2015 study.

Resources for At-Risk, English Learners, Special Education, and Gifted Students Identified by 2018 PJ Panels

As noted, for this 2018 study three PJ panels were convened to identify the resources needed above the base to serve at-risk, EL, special education, and gifted students. This section presents the resources recommended for each group of students.

At-Risk Resources

The PJ panel identified resources to serve at-risk students (using free and reduced lunch as a proxy) in each of the representative schools for three different concentration levels of need: 25 percent of students being at-risk, then 50 percent, and 75 percent. This was done to determine if resource needs varied in total amount or intensity depending on the proportion of at-risk students in the school.

Approaches at each grade level and for each concentration level varied, but in general, resources recommended included:

- Interventionists to provide Tier 2 response-to-intervention (RTI) support at the elementary and middle school level.
- At the high school level, the approach for intervention shifted to increased differentiation through course offerings, so additional teachers and instructional coaches were recommended.
- Additional pupil support staff (counselors, psychologists, social workers and family liaisons) to address social-emotional needs.
- Increased safety and security personnel at the secondary level.
- Attendance and administration staff support when the concentration of at-risk students was higher.
- Professional development for all teachers to support differentiation (an additional four days above the six days identified in the base).
- Additional resources for supplies and materials, as well as student activities.
- Extended learning time, such as through before- and after-school programs and summer school (or intersession).

Personnel

Tables 4.6 through 4.8 present the additional personnel to support at-risk students in elementary, middle, and high schools.

Table 4.6: Elementary School Personnel to Support At-Risk Students

Elementary School			
Concentration	25%	50%	75%
# of At Risk Students	113 students	225 students	338 students
Instructional Staff			
Interventionists	1.0	1.0	2.0
Pupil Support Staff			
Counselors		0.3	0.5
Psychologists	0.1	0.3	0.8
Social Workers	0.3	0.8	1.1
Family Liaisons	0.3	0.8	1.1
Administrative Staff			
Attendance/ Registrar		1.0	1.5

Given the small classes sizes recommended by the 2015 PJ study at the elementary level (15:1 K-3, 25:1 4-5), panelists did not recommend additional teachers but instead focused their support strategies through additional interventionists, pupil support, and attendance support at the 50 percent concentration level or higher.

Table 4.7: Middle School Personnel to Support At-Risk Students

Middle School			
Concentration	25%	50%	75%
# of At Risk Students	188 students	375 students	563 students
Instructional Staff			
Interventionists	2.0	3.0	5.0
Pupil Support Staff			
Psychologists		0.3	0.7
Social Workers	0.8	1.8	2.8
Family Liaisons	0.8	1.8	2.8
Other Staff			
School Resource Officer (SRO)	0.1	0.25	0.75

Panelists recommended interventionists to provide instructional support at the middle school level. They felt the counselor staffing in the base was sufficient, but recommended additional student support from psychologists, social workers and family liaisons. Increased SRO staffing was also identified as needed.

Table 4.8: High School Personnel to Support At-Risk Students

High School			
Concentration	25%	50%	75%
# of At Risk Students	325 students	650 students	975 students
Instructional Staff			
Teachers	1.6	3.6	5.6
Instructional Facilitator (Coach)		2.0	4.0
Pupil Support Staff			
Counselors	0.3	0.8	1.8
Social Workers	0.3	0.5	1.5
Family Liaisons	0.3	0.5	0.5
Behavior Interventionist (Alternative to/ In School Suspension)	0.5	1.0	1.0
Administrative Staff			
Assistant Principal			1.0
Attendance/ Registrar	0.25	0.5	1.0
Clerical/Data Entry			1.0
Other Staff			
School Resource Officer	0.5	1.0	1.0
Security/ Duty Aides			1.0

The panelists recommended a different approach at the high school level. Instead of separate interventionists, they thought that differentiated instruction could be done through course offerings. They recommended additional teachers to offer more sections and instructional coaches to support all teachers. Similar to the resources at the elementary and middle school level, the panelists recommended additional student support, attendance support, and safety personnel. At the highest concentration level, they also recommended an additional assistant principal.

Non-Personnel Costs

In addition to the personnel identified, the panel recommended resources for professional development, supplies and materials, and student activities.

Professional Development

The panels strongly felt all teachers should be able to support success of at-risk students through effective and differentiated instruction. To ensure that was possible, all staff needed to receive meaningful professional development, and the panel recommended the equivalent of an additional four days of professional development for all teachers identified either in the base or specifically for those working with at-risk students. These days could be used at any time—during the summer, during breaks, during in-service days, or split up into shorter half-day or hour segments.

Supplies and Materials

The panels recommended an additional $125 per at-risk elementary and middle school student, and $200 per at-risk high school student for supplies and materials, including intervention program licensing.

Student Activities

To support student enrichment, the panels also felt $25 per at-risk student was needed above the resources in the base.

Additional Programs

Panelists indicated that at-risk students needed extended learning time opportunities as well as the quality instruction and intervention they should be receiving during the regular school hours.

Before and After School

Panelists recommended that before- or after-school programs should be offered for two hours a day, four days a week at the elementary, middle, and high school level. These programs would be staffed by certified teachers at a ratio of 20:1, assuming 50 percent of at-risk students would participate.

Summer School/Intersession

Summer school was also recommended for middle (half day) and high school students (full day). This was also staffed with certified teachers at a ratio of 20:1, assuming 50 percent of at-risk students would participate. At the high school level, intersession boot camps, or catch-up sessions, were also recommended for 10 percent of at-risk students to keep them on track (also staffed at 20 students per certified teacher).

District-level Resources

Administration

At the district level, the panels identified a number of staff positions that would be needed to support schools. Table 4.9 shows the district staff needed in a district of 50,000, if 50 percent of students were at-risk.

Table 4.10: District Personnel to Support At-Risk Students

District Staff	FTE
Assistant/Associate Superintendent	1.0
Director	1.0
Coordinator	2.0
Clerical/Data Entry	4.5

Panelists also recommended $25 per student for administrative costs.

Alternative School

The final resource area addressed by the at-risk panel was an alternative school setting. The panelists identified resources for a school of 100 students and discussed how many schools of this size would be needed, based on district size. For a district of 50,000, they felt five alternative schools would be needed. Table 4.11 shows the alternative school personnel and other associated costs.

Table 4.11: Alternative School Personnel

School Size	100 students
Recommended Average Class Size	10 to 1
Schedule	6 period day; teachers teaching 5 periods
Instructional Staff	
Teachers	14.0
Instructional Facilitator (Coach)	2.0
Librarians/Media Specialists	0.5
Technology Specialists	0.5
Pupil Support Staff	
Counselors	1.0
Nurses	1.0
Psychologist	0.5
Social Worker	0.5
Family Liaison	0.25
Administrative Staff	
Principal	1.0
Clerical/Data Entry	1.0
Other Staff	
Security/ Duty Aides	1.0
Behavior Interventionist (Alternative to/ In School Suspension	0.25
Other Costs	
Professional Development	10 days per teacher and $100 per student
Substitutes	8 days per teacher
Supplies and materials	$500
Technology Hardware	$248
Student Activities	$250

Small class sizes (10:1) were a key resource component of the recommended alternative school model. Panelists also recommended a high level of student support, a full-time librarian/technology specialist (.5 in each role), a principal, a secretarial staff member, and a security aide. Other costs included: 10 days of professional days per teacher and $100 per student for PD materials, eight substitute days per teacher, $500 per student for supplies and materials, and finally $248 for technology hardware and $250 per student for student activities, both of which are the same amount as the regular high school.

EL Resources

The EL panel reviewed both the base resources named in the 2015 PJ study as well as the resources identified by the at-risk panel. Frequently, there is overlap between students who qualify as at-risk and students needing language acquisition services, so EL panels considered what resources would already be available to students both at the base and through the at-risk adjustment in order to avoid double counting of resources as best they could.

Panelists were asked to identify resources in representative schools with 25 percent of students being EL overall, disaggregating resource needs by the WIDA level of students split into three groups: L1/L2, (highest level of support needed), L3/L4, and L5/L6 (lowest level of support needed). Panelists determined the percentage of students that would fall into each category based on school level.

In general, panelists recommended more resources for L1/L2 students compared to the other groups, and for secondary students compared to elementary students. They recommended:

- Fewer resources in elementary schools since language acquisition is a key component of instruction for all students in lower grades.
- Sheltered instruction for L1/L2 secondary students.
- Co-teaching for L3/L4 students.
- Additional resources for supplies and materials, and student activities.
- Extended learning time, through before- and after-school programs and summer school (or intersession).

Personnel

The specific personnel recommended to serve ELs are found in Tables 4.12 through 4.14.

Table 4.12: Elementary School Personnel to Support English Learners

Elementary School			
WIDA level	L1/L2	L3/L4	L5/L6
# of English Learners	32 students	68 students	14 students
Instructional Staff			
Teachers	0.28	0.60	0.12
Instructional Facilitator (Coach)	0.28	0.60	0.12
Instructional Aides	0.56	1.19	0.25

Panelists recommended 1.0 teacher, 1.0 instructional coach, and 2.0 instructional aides to support elementary ELs with their time split proportionately across the three language levels.

Table 4.13: Middle School Personnel to Support English Learners

Middle School			
WIDA level	L1/L2	L3/L4	L5/L6
# of English Learners	30 students	113 students	45 students
Instructional Staff			
Teachers	3.0	5.0	1.7
Instructional Aides	2.0		

At the secondary level, panelists shifted their approach and differentiated the service model by language level. For L1/L2s, they recommended a sheltered instruction model with teachers at a 10:1 ratio and supported by 2.0 instructional aides. For L3/L4 and L5/L6, they recommended co-teaching in the general education classroom at ratios of 22:1 for L1/L2 and 26:1 for L5/L6.

Table 4.14: High School Personnel to Support English Learners

High School			
WIDA level	L1/L2	L3/L4	L5/L6
# of English Learners	52 students	195 students	78 students
Instructional Staff			
Teachers	5.2	8.86	3.0
Instructional Aides	2.0		
Pupil Support Staff			
Social Worker	0.1	0.3	0.1
Family Liaison	0.1	0.3	0.1

The instructional model was the same for the representative high school as the middle school. Additionally, panelists recommended a half-time social worker and a half-time family liaison to support the three language groups.

Non-Personnel Costs

In addition to the personnel identified, the panel recommended resources for supplies and materials, and for assessment.

Supplies and Materials

The EL panel recommended an additional $150 per EL student for supplemental supplies and materials.

Assessment

Another $200 per EL student was identified to address the cost of specific EL assessing, including administration costs.

Additional Programs

Panelists indicated that EL students should also receive similar extended learning time opportunities (such as before- and after-school programs and summer school) as were identified for at-risk students and described in the prior section.

District-level Resources

Administration

At the district-level, the panel identified staff positions to support schools, including intake services. Table 4.15 presents the resources identified for a district of 50,000 students, if 25 percent were EL students.

Table 4.15: District Personnel to Support English Learners

District Staff	FTE
Director	1.0
Coordinator	1.0
Teachers	18.0
Clerical/Data Entry	2.0
Translator	2.0
Data Specialist	1.0
Instructional Aides	3.0
Student Support (Counselor/ Social Worker)	1.0

Staff listed above included personnel to manage new student intake, including student support and staff for assessment. Panelists also recommended $5 per student for interpretation contracted services.

Special Education and Gifted Resources

The third PJ panel addressed resources needed to serve special education students, as well as gifted students, since gifted falls under the special education umbrella in Nevada.

Panelists felt that no additional resources were needed to serve gifted students if schools had the class sizes and resources identified in the base.

For mild, moderate, and severe special education students, the panel recommended:

- 1.0 teacher per 16 mild students, per nine moderate students, and per six severe students, with instructional aide support.
- Student support by psychologists, social workers, speech pathologists, and other therapists, like occupational or physical therapy.
- Additional resources for supplies and materials, including adaptive technology.
- Extended School Year (ESY) for a percentage of moderate and severe students.

- Additional district administration and resources, such as contracted services, legal, and other placements.

Personnel

Tables 4.16 through 4.18 present the school-level special education personnel recommended by the PJ panel, including teachers at the ratios noted above.

Table 4.16: Elementary School Personnel to Support Special Education Students

Elementary School			
Need Level	Mild (7%)	Moderate (3%)	Severe (2%)
# of Special Education Students	32 students	14 students	9 students
Instructional Staff			
Teachers	2.0	1.5	1.5
Instructional Aides		0.5	3.0
Pupil Support Staff			
Psychologist	0.2	0.1	0.1
Social Worker			
Speech Pathologist	0.4	0.2	0.2
Therapists (OT/PT, Behavior, etc.)	0.2	0.2	0.3

Table 4.17: Middle School Personnel to Support Special Education Students

Middle School			
Need Level	Mild (7%)	Moderate (3%)	Severe (2%)
# of Special Education Students	53 students	23 students	15 students
Instructional Staff			
Teachers	3.3	2.5	2.5
Instructional Aides		0.8	5.0
Pupil Support Staff			
Psychologist	0.3	0.2	0.2
Social Worker	0.1	0.1	0.1
Speech Pathologist	0.2	0.3	0.3
Therapists (OT/PT, Behavior, etc.)	0.2	0.2	0.3

Table 4.18: High School Personnel to Support Special Education Students

High School			
Need Level	Mild (7%)	Moderate (3%)	Severe (2%)
# of Special Education Students	91 students	39 students	26 students
Instructional Staff			
Teachers	5.7	4.2	4.3
Instructional Aides		1.0	9.0
Pupil Support Staff			
Psychologist	0.6	0.3	0.3
Social Worker	0.1	0.2	0.2
Speech Pathologist		0.2	0.3
Therapists (OT/PT, Behavior, etc.)	0.3	0.3	0.4
Transition Coordinator		0.5	0.5

Non-Personnel Costs

All non-personnel costs were identified at the district level.

Additional Programs

Panelists identified the resources for an Extended School Year (ESY) program to serve a limited number of special education students (severe and high need moderate) whose individualized education programs (IEPs) required service. This program was staffed at one teacher and one instructional aide per 10 students, with support from speech and other therapists.

District-level Resources

Administration

At the district level, the special education panel identified needed staff and other resources. Below are the resources for a district of 50,000 with 12 percent of students in special education.

Table 4.19: District Personnel to Support Special Education Students

District Staff	FTE
Director	3.0
Coordinator	8.0
Teachers	7.0
Clerical/Data Entry	3.0
Nurses	3.0
Other Therapists	1.0
Psychologist	1.0
Job/Transitions Coach	1.0
Other Professionals	13.0

In addition to staff above, the panelists recommended $560 per special education student to provide supplies and materials, including adaptive technology, contracted services, legal, homebound, and other placements.

Base Costs and Adjustments

Updating the 2015 PJ Study Base

The 2015 PJ study base cost was determined by applying 2012-13 Nevada salary and benefit information (provided by the NDE) to the resources identified. This process produced a base cost of $8,577. To update this to the most recent year of data availability (2016-17), APA applied the following annual inflation rate using data from the Bureau of Labor Statistics for the western region: 2.3 percent increase in 2013-14, 1.3 percent in 2014-15, 1.4 percent in 2015-16, and 2.5 percent in 2016-17. This produced an inflation-adjusted PJ base cost of $9,238.

Adjustments for At-Risk, EL, and Special Education Students

Applying Resource Prices to Resources

To determine the adjustment, or weight, for each student group, APA used 2016-17 statewide average salary and benefit information provided by the Nevada Department of Education (Appendix I).

Dollar Amounts and Weights

Table 4.20 shows the resulting adjustments for at-risk, EL, and special education students.

Table 4.20: Amounts and Weights for At-Risk, EL, and Special Education in Relation to PJ Base

	Elementary School		Middle School		High School	
	Amount	**Weight**	**Amount**	**Weight**	**Amount**	**Weight**
At-risk						
25% concentration	$2,450	0.27	$2,287	0.25	$1,885	0.20
50% concentration	$2,450	0.27	$2,161	0.23	$2,099	0.23
75% concentration	$2,645	0.29	$2,319	0.25	$2,419	0.26
EL (25%)						
L1, L2	$3,451	0.37	$11,098	1.20	$10,402	1.13
L3, L4	$3,451	0.37	$4,454	0.48	$4,812	0.52
L5, L6	$2,633	0.29	$3,531	0.38	$3,806	0.41
Special Education (12%)						
Mild (7%)	$8,060	0.87	$7,279	0.79	$6,968	0.75
Moderate (3%)	$13,751	1.49	$13,904	1.51	$13,914	1.51
Severe (2%)	$31,464	3.41	$30,555	3.31	$31,803	3.44

Applying salaries and benefits to the identified resources, produced an amount ranging from $1,885 to $2,645 per at-risk student, resulting in at-risk weights from 0.20 to 0.29. There was minimal relationship

to concentration level, meaning that while additional staff was needed as the concentration of students increased, on a per-student level the resources were similar.

Dollar amounts and weights for EL students varied both by school level and by language level. Elementary weights ranged from 0.29 to 0.37 ($2,633 to $3,451) with less variation by language level, while at the secondary level weights for L1/L2 students were between 1.13 and 1.20 ($10,402 to $11,098), the weights for L3/L4 students were around 0.50 (or about $4,600) and the weights for L5/L6 were around 0.40 (or $3,700).

Weights for special education varied by need level. The weight for mild students was between 0.75 and 0.87 (about $7,500), around a 1.50 for moderate students (or about $13,850), and between 3.31 and 3.44 for severe students ($30,555 to $31,803).

V. Evidence-Based Approach

Introduction and Overview

Using the Evidence-Based (EB) Model, this chapter provides a set of recommendations Nevada can use to determine how the state can provide a level of funding to all school districts that would give every student in the state—particularly at-risk students, EL students, and students with disabilities—an equal opportunity to achieve to the state's college and career-ready standards.

For the past 18 years, Picus Odden & Associates (known as Lawrence O. Picus and Associates prior to 2013) has worked across the country, primarily with state legislatures and other state agencies, to help determine how to adequately fund all students, including at-risk students, EL students, and students with disabilities. Adequate funding has been defined as providing a level of resources that would enable all districts and schools to give every student an equal opportunity to learn to high-performance standards. Over time, as both curriculum and performance standards have increased and as states have adopted college and career-ready standards for reading/language arts, mathematics, and science, the EB model has been updated to meet the changing and more rigorous expectations of PreK-12 schools.

The next section describes the school improvement framework that undergirds the EB funding model. This section draws from research that Picus, Odden, and others have conducted on schools that have dramatically moved the student achievement needle. Such schools exist across the country and vary by location (urban, suburban and rural) and by school size (large, medium, and small) and with high, medium, and low percentages of at-risk and EL students, as well as students with disabilities.

The subsequent section then "unpacks" the elements of an effective school and includes specific recommendations for every element of the model, including a list of all EB model elements and their values, representing the core of the EB model, as it is formulated in mid-2018. These elements include class size, extra help for struggling students (at-risk and EL students particularly), professional development, student support services (including guidance counselors and nurses), and systems for organizing instruction and teachers to reinforce effectiveness in increasing student performance and reducing achievement gaps linked to student demographics.

The last section provides the final estimated EB costs, drawing from an Excel-based computer simulation developed to translate the model elements into per-pupil figures and weights for special needs students. Please note that the resulting figures do not include resources for transportation, food services, or capital construction costs.

The Evidence Based School Improvement Model

The primary intent of this section is to identify in detail the array of educational goods that would allow Nevada districts and schools to provide each student an equal opportunity to meet the state's student performance standards and to identify the per-pupil costs of that basket of education goods. This section describes the elements of the school improvement strategy embedded within the EB funding model. Although we cannot claim a direct linkage between funding and student performance, the Evidence-Based (EB) model is designed to identify a level of resources that would enable all students,

schools and districts to meet state standards and requirements, and be successful in today's global, knowledge-based economy.

This section provides a more general description of the school improvement strategies that undergird the EB Model and describes how the key resource elements are used to increase student performance.

The High-Performance School Model Embedded in the EB Model

The EB Model is derived from research and best practices that identify programs and strategies that boost student learning, including learning for EL and at-risk students. The formulas and ratios for school resources developed from that research have been reviewed by dozens of educator panels in multiple states over the past decade. The EB Model relies on two major types of research:

1. Reviews of research on the student achievement effects of each of the individual major elements of the EB Model, with a focus on randomized controlled trials, the "gold standard" of evidence on "what works." These analyses can be found in the fifth edition of our school finance text (Odden & Picus, 2014) and in the most recent adequacy studies conducted for Michigan (Odden & Picus, 2018).
2. Studies of schools and districts that have dramatically improved student performance over a four- to six-year period, which is sometimes labeled "a doubling of student performance" on state assessments.

The current EB approach is more explicit in identifying the components of the school improvement strategies that deploy the resources in the funding model, and it articulates how all elements of the EB Model are linked at the school level to strategies that, when fully implemented, produce notable improvements in student achievement (Odden & Picus, 2014).

High-performing and improving schools have clear and specific, as well as ambitious and rigorous, student achievement goals, including goals to reduce achievement gaps linked to poverty and English proficiency status. The goals are nearly always specified in terms of performance on state assessments.

Compared to traditional schools where teachers work in isolated classrooms, improving schools organize instruction differently. Regardless of the context (urban, suburban, or rural; rich or poor; large or small), improving and high-performing schools organize teachers into collaborative teams: grade-level teams in elementary schools and subject or course teams in secondary schools. With the guidance and support of instructional coaches, the teacher teams work with student data (usually short-cycle or formative assessment data) to:

- Plan standards-based curriculum units;
- Teach those units simultaneously;
- Debrief on how successful the units were; and
- Make changes when student performance does not meet expectations.

This collaborative teamwork makes instruction "public" over time by identifying a set of instructional strategies that work in the teachers' school. Over time, all teachers are expected to use the instructional strategies that have been demonstrated to improve student learning and achievement.

High-performing and improving schools also provide an array of "extra help" programs for students struggling to achieve to standards. This is critical as more rigorous programs are implemented to support the increasing number of struggling students prepare for college and careers. These "extra help" strategies may include individual tutoring, small group tutoring, after-school academic help, and summer school focused on reading and mathematics for younger students, and courses needed for high school graduation for older students. These strategies are particularly key for students from poverty and EL backgrounds. The school approach is to hold standards constant and vary instructional time.

These schools exhibit multiple forms of leadership. Teachers lead by coordinating collaborative teams and through instructional coaching. Principals lead by structuring the school to foster instructional improvement. The district leads by ensuring schools have the resources to deploy the strategies outlined above with a focus on producing aggressive student performance goals, improving instructional practice, and taking responsibility for student achievement results. Further, successful and improving schools seek out top talent. They know that the challenge to prepare students for the competitive and knowledge-based global economy is difficult, and even more challenging for students from poverty and EL backgrounds. It requires smart and capable teachers and administrators to effectively get the educational job done.

The study team recently studied dramatically improving schools in Maryland, Vermont, and Maine as part of school finance studies completed in those states and found the theory of improvement embodied in the EB Model reflected in nearly all the successful schools studied (Picus, Odden, et al., 2012; Picus, Odden, et al., 2013; Odden & Picus, 2015). In addition, other researchers and analysts have found similar features in schools that significantly improve student performance and reduce achievement gaps (e.g., Blankstein, 2010, 2011; Chenoweth, 2007, 2009, 2017). After a comprehensive set of studies and analyses, Duncan and Murnane (2014) reached conclusions that support the element of the EB Model. They note that if all students in a school are to have a chance at success in the emerging global economy, they will need high-quality preschool programs followed by effective elementary and secondary schools. The key features needed in each school include:

- Leadership focused on improving instructional practice;
- Within-school organization of teachers into teams that over time create a set of effective instructional practices and then deploy them systematically in all classrooms;
- A culture of assistance (e.g., instructional coaches and ongoing professional development) and accountability (e.g. adults taking responsibility for the impact of their school actions on student performance); and
- An array of extra help strategies to extend learning time for any student who needs more time to achieve to standards.

Although the details of studies of improving and high-performing schools vary and different authors highlight somewhat different elements of the process, the overall findings are more similar than different. This suggests schools can improve the performance of all students if they have adequate resources and deploy those adequate resources in the most effective ways.

The EB Model offers a framework for the use of resources by districts and schools to help focus those resources on programs and strategies that would allow them to produce substantial gains in student academic performance. To provide further detail to the global description of the EB effective schools, the key elements of the school improvement model embedded in the EB Model have been organized into 10 areas.

In general, schools and districts that produce large gains in student performance follow ten similar strategies (see Chapter 4 and 5 of Odden & Picus, 2014; Odden, 2009), resources for each of which are included in the EB Model. The ten strategies employed by improving schools are:

1. Analyze student data to become deeply knowledgeable about performance issues and to understand the nature of the achievement gap. The test score analysis usually first includes review of state test results and then, over time, analysis of formative/short cycle (e.g. Renaissance Learning Star Enterprise) as well as benchmark assessments (e.g. Northwest Evaluation Association MAP) to help tailor instruction to precise student needs; to progress monitor students with an Individual Education Plan (IEP) to determine whether interventions are working; and to follow the performance of students, classroom, and the school over the course of the academic year. Improving schools are performance data hungry.

2. Set high goals such as aiming to educate at least 95 percent of all students in the school to proficiency or higher on state reading and math tests; working to ensure a significant portion of the school's students reach advanced achievement levels; having more high school students take and pass AP classes; and making significant progress in closing the achievement gap between the average student and students from poverty and EL backgrounds. The goals tend to be explicit and far beyond just producing improvement or making adequate yearly progress. Further, because the goals are ambitious, even when not fully attained, they help the school produce large gains in student performance.

3. Review evidence on good instruction and effective curriculum. Successful schools throw out the old curriculum, replace it with a different and more rigorous curriculum, and over time create their specific view of good instructional practice to deliver that curriculum. Changing curriculum is a must for schools implementing more rigorous college and career-ready standards and such new curriculum requires changes in instructional practice. Successful schools also want *all* teachers to learn and deploy new content-based, instructional strategies in their classrooms and seek to make good instructional practice systemic to the school and not idiosyncratic to teachers' individual classrooms.

4. Invest heavily in teacher training that includes intensive summer institutes and longer teacher work years, resources for trainers, and, most importantly, funding for instructional coaches in all schools. Time is provided during the regular school day for teacher collaboration focused on improving instruction. Nearly all improving schools have found resources to provide instructional coaches to work with school-based, teacher data teams; model effective instructional practices; observe teachers, and give helpful but direct feedback. This focus has

intensified now that schools are delivering a more rigorous curriculum focused on educating all students to college and career-proficiency levels. Further, professional development is viewed as an ongoing and not a once and done activity.

5. Provide extra help for struggling students and, with a combination of state funds and federal Title 1 funds, provide some combination of tutoring in a 1:1, 1:3, or 1:5 teacher-to-student format. In some cases, this also includes extended days, summer school, and English language development for all EL students. These Tier 2 interventions in the response to intervention (RTI) approach to helping struggling students achieve to standards are absolutely critical. For many students, one dose of even high-quality instruction is not enough—many students need multiple extra help services in order to achieve to their potential. No school producing large gains in student learning ignored extra help strategies altogether or argued that small classes or preschool were substitutes.

6. Restructure the school day to provide more effective ways to deliver instruction. This can include multi-age classrooms in elementary schools, block schedules and double periods of mathematics and reading in secondary schools, and intervention periods at all school levels. Schools also protect instructional time for core subjects, especially reading and mathematics. Further, most improving schools today organize teachers into collaborative teams: grade-level teams in elementary schools and subject/course teams in secondary schools. These teams meet during the regular school day, often daily, and collaboratively develop curriculum units, lesson plans to teach them, and common assessments to measure student learning that results from them. Further, teams debrief on the impact of each curriculum unit, reviewing student learning overall and across individual classrooms.

7. Provide strong leadership and support for data-based decision-making and improving the instructional program, usually through the superintendent, the principal, and teacher leaders. Instructional leadership is “dense” and “distributed” in successful schools; leadership derives from the teachers coordinating collaborative teacher teams, from instructional coaches, the principal and even district leaders. Both teachers and administrators provided an array of complementary instructional leadership.

8. Create professional school cultures characterized by ongoing discussion of good instruction, with teachers and administrators taking responsibility for the student performance results of their actions. Over time, the collaborative teams that deliver instruction produce a school culture characterized by: 1) high expectations of performance on the part of both students and teachers, 2) a systemic and school-wide approach to effective instructional practice, 3) a belief that instruction is public and that good instructional practices are expected to be deployed by every individual teacher, and 4) an expectation that the adults in the school are responsible for the achievement gains made or not made by students. Professionals in these schools accept responsibility for student achievement results.

9. Bring external professional knowledge into the school; for example, hiring experts to provide training, adopting new research-based curricula, discussing research on good instruction, and working with regional education service agencies as well as the state department of education. Successful schools do not attain their goals by pulling themselves up by their own boot straps. Faculty in successful schools aggressively seek outside knowledge, find similar schools that produce results and benchmark their practices to them, and operate in ways that typify professionals.

10. Finally, talent matters. Many improving schools today consciously seek to recruit and retain the best talent, from effective principal leaders to knowledgeable, committed, and effective teachers. They seek individuals who are mission-driven to boost student learning particularly students from poverty and EL backgrounds, willing to work in a collaborative environment where all teachers are expected to acquire and deliver the school's view of effective instructional practice, and who are accountability focused.

Such successful schools also create a learning atmosphere inside the schools. They also have a school-wide approach to discipline and classroom management, which requires that every student be accountable to any adult for his/her behavior and that all adults take interest in all students and hold them accountable for the behavioral practices in the school. In addition, these effective schools reach out to parents, ensure parents know the expectations of the school and help their children with homework, and welcome all parents into the school.

In sum, the schools that have boosted student performance are strongly aligned with those embedded in the EB Model. These practices bolster the study team's claim that if such funds are provided and used to implement these effective and research-based strategies, then significant student performance gains should follow.

Three Tier Approach

It should be clear that the design of the EB Model reflects the RTI model. RTI is a three-tier approach to meeting student needs. Tier 1 refers to core instruction for all students. The EB Model seeks to make core instruction as effective as possible with its modest class sizes, provisions for collaborative time, and robust professional development resources, including school-based, instructional coaches. Effective core instruction is the foundation on which all other educational strategies depend. Tier 2 services are provided to students struggling to achieve to standards before being given an IEP and labeled as a student with a disability. The EB Model's current Tier 2 resources, which are provided to every at-risk and EL student, include one core tutor for every prototypical school and then additional resources, triggered by at-risk and EL student counts, for tutoring, extended day, summer school, and additional pupil support. To that is added even more language resources for EL students. The robust levels of Tier 2 resources allow schools to provide a range of extra help services that often are funded only by special education programs that get many modestly struggling students back on track, and thus reduce the levels of special education students. Tier 3 includes all special education services.

Case Studies

As part of the study, several school level case studies were undertaken. The case studies provide the study team an opportunity to understand how successful Nevada schools utilize resources and to compare that resource utilization to the principles in the evidence-based approaches noted in this chapter. In this section, we describe the school selection process, detail the protocols used with the schools, and provide a summary of the common elements found between the schools. In the final report, the seven case study write-ups will be provided as appendices to the report.

School Selection

Since this study's emphasis is on the resources needed for special needs students, the study team focused its case study school selection on those schools outperforming other Nevada schools with at-risk and EL students. The study team did not identify schools based on special education performance, as interventions and resources for these students are IEP specific and lessons learned are likely less transferrable across schools.

To identify schools that are successful serving at-risk and EL students, the study team analyzed two years of available 3rd-8th grade state assessment data to create a single composite proficiency percentage across both years, both subjects (math & reading), and all grades for every school in the state. Results were disaggregated for EL and FRL students. Based upon this data, the study team identified a pool of top-performing schools that were both performing at or above the statewide average overall and performing at the 90th percentile or higher for a given subpopulation. For FRL students, that meant schools had at least 55 percent of FRL students achieving proficiency based upon the composite score. For EL students, this benchmark was set at 40 percent. From the pool of top-performing schools, the study team attempted to select schools from different districts and of different sizes where possible. The study team also considered the 2015 results of the school performance framework system as confirmatory data point.

Two schools were selected because they had higher FRL concentrations, and were performing well with both EL and FRL students:

- Bracken Elementary, Clark County School District (CCSD) (5 out of 5 stars on 2015 SPF)
- Mackey Elementary, CCSD (4 out of 5 stars on 2015 SPF)

Three schools were selected as performing well with FRL students (though they had smaller concentrations of these students), highly rated (all 5 star schools), where of various school sizes, and provided geographic diversity.

- Hunter Lake Elementary, Washoe (5 out of 5 stars on 2015 SPF)
- Pahranagat Valley Elementary, Lincoln (5 out of 5 stars on 2015 SPF)
- Pleasant Valley Elementary, Washoe (5 out of 5 stars on 2015 SPF)

The study team also selected Vegas Verdes Elementary, which while not a highly rated school on the performance framework, has a high ELs concentration and is performing well with ELs comparatively:

- Vegas Verdes Elementary, CCSD (2 out of 5 stars on 2015 SPF)

Finally, the study team selected the one middle school that met the 55 percent or high performance threshold with FRL students:

- Indian Springs Middle, CCSD (5 out of 5 stars on 2015 SPF)

The study team was limited in the number of schools that could be visited during the study and the seven schools identified above were selected to represent schools that were performing well with special needs populations; they are not the only schools that met the performance criteria.

Interview Protocol

The study team visited each school with the goal of understanding the structures the schools were using to achieve the student performance identified during the case study school selection process. An interview protocol was developed, which can be seen in Appendix I. The study team had two individuals visit each school site when possible. The day was structured with an initial meeting with the school principal and other leadership staff, where applicable, to discuss the protocol in its entirety. The remainder of the day was spent in one-on-one or small group teacher and staff interviews. For two schools, the interviews were conducted via phone. The interview protocol was used with both groups and was broken into nine areas:

- **General Background –** The study team asked about the community the school was in and any recent changes in student demographic changes.
- **School Staffing** – The study team asked about teacher turnover and acquired a detailed list of all staff in the building.
- **Student Achievement –** The study team asked about how student successes have been achieved with a focus on the types of specific improvement goals that had been set by the school.
- **Class Schedule -** The study team asked to understand the class schedule and where interventions and teacher professional development fit into the schedule.
- **Curriculum and Instruction –** The study team asked what instructional arrangements had been put in place to improve achievement, if the school had instructional coaches, what types of grouping practices where used, and if there were any specific instructional strategies in place for the special needs populations. The study team also asked about the specific curriculum being used by the school.
- **Instructional Interventions** – The study team asked about specific interventions for struggling students including how those students were identified and monitored over time.
- **Assessments -** The study team asked for a list of the types of assessments used by the school and for which students each assessment was used.
- **Professional Development** – The study team discussed what professional development looked like in the school, including how it was developed and who implemented the professional development in the school.
- **School Culture –** The study team asked about school culture, including the positives and areas where there might be challenges.

The interviewers worked to have free flowing discussions with all participants. The goal was to cover each subject area, but not necessarily in the order identified in the protocol.

Summary Findings

Though the seven schools are in different districts and serve different student populations, several common themes came out of site visits. Not every school was found to have each of the characteristics listed below but, in each case, the clear majority of schools did have the characteristic.

- **Smaller class sizes (25 or below) -** Schools had smaller class sizes, especially in kindergarten through third grade. Some schools had larger class sizes in 4th and 5th grade due to budget constraints.
- **Leaders who trust and give autonomy to their teachers –** Though every school had its unique structure, a common theme of leadership was trust of teachers. This included strong grade level teams and teachers in leadership positions in the school.
- **A collaborative culture –** Schools discussed the importance of collaboration at all levels of the school. Schools discussed setting aside time for grade level collaboration and teams set up to implement the RTI system. Schools also saw parents and the greater community as important partners in the school.
- **A relatively stable teaching staff –** Many of the schools reported having very low teacher turnover rates, which contributed to consistency from year to year, and enabled a greater focus on continuous improvement.
- **Extended learning time –** Some of the schools offer extended learning time opportunities to the extent their budgets and staff allowed. Examples included computer lab and library availability before school; afterschool tutoring, often targeted to those students needing extra help; and summer school programs.
- **Data-driven decision making –** Schools discussed the importance of using student level data to drive instruction and in the implementation of RTI. Many teachers were able to produce student level data reports for their classes during interviews. Some schools had large data walls where students could track performance over time. Some schools had staff members dedicated to pulling student data reports and working with teachers to identify groupings and students needing additional support.
- **Strong RTI systems for struggling students –** Each school was implementing RTI to support students. Examples of RTI practices included a schoolwide RTI team that met each Wednesday morning examining the needs of all students by grade level. Schools had different levels of additional RTI support with most schools having some additional RTI support staff. One school fully embedding the RTI in the classroom, lacking any additional resources for RTI.
- **Preschool Programs –** Most of the schools had some form of preschool. For schools that offered preschool, programs ranged from universal to targeted based on student need.

The study team found that these schools are implementing the strategies in the EB model to varying degrees, supporting the use of the model to cost out an adequate level of resources for Nevada schools.

Using the EB Model to Identify Adequacy for Nevada Schools

This section provides the formulas and funding levels of every element in the EB Funding Model. The elements of the EB Funding Model are divided into five sections:

1. Staffing for core programs, which include preschool, full-day kindergarten, core teachers, elective/specialist teachers, substitute teachers, instructional facilitators/coaches, core tutors, core guidance counselors and nurses, supervisory aides, librarians, school computer technicians, principals/assistant principals, and school secretarial and clerical staff.
2. Dollar-per-student resources for gifted and talented students, professional development, instructional materials and supplies, formative/short cycle assessments, computers and other technology, career and technical education equipment and materials, and extra duty/student activities.
3. Central functions, which include maintenance and operations, central office personnel and non-personnel resources.
4. Resources for struggling students including at-risk tutors, at-risk pupil support, extended day personnel, summer school personnel, EL personnel, alternative school personnel and special education.
5. Personnel compensation resources including salary levels, health insurance, benefits for workers' compensation, unemployment insurance, retirement, and social security.

Before providing the summary of the EB formulas and elements, this section summarizes two more general issues necessary to understand how the study team proceeded from school- and district-level resources to per-pupil funding figures: student counts and prototypical schools and districts.

Student Counts

The EB model recommends that states use an average daily membership student count to distribute general aid. The model also needs a measure of the number of students from poverty backgrounds to trigger specific resources. In the past, this usually has been the number of students eligible for the federal free and reduced-price lunch program. Since districts can now provide free lunches to all students if they have a large number of poverty students, the count of free and reduced lunch students may not be available in some districts, often the largest districts in the state. So, the issue is whether to use a different indicator. One state, Illinois, provides a good example of the latter and uses the non-duplicated count of children receiving services through the programs of Medicaid, the Supplemental Nutrition Assistance Program, the Children's Health Insurance Program, or Temporary Assistance for Needy Families. EL and special education students will be counted as currently defined by the state.

There is one more important nuance on student counts. Previously the EB model defined at-risk students as the non-duplicated count of poverty students and EL students. The model then provided additional resources for all these students, including tutoring, extended day, summer school, and additional pupil support. In addition, all EL students also received an additional allocation for English as a Second Language (ESL) services. This definition confused most people who concluded that the model provided EL students just the ESL resources (see for example, Jimenez-Castellanos & Topper, 2012). Consequently, the EB model has changed its approach. For the purposes of the EB approach, and the

resultant per-pupil figures and weights, all EL students receive tutoring, extended day, summer school, ESL, and additional pupil support resources. Then, all non-EL at-risk students also receive resources for tutoring, extended day, summer school and additional pupil support resources.

Prototypical Schools

A key component of the EB model is the use of prototypical schools and districts to indicate the general level of resources in schools and districts and to serve as a heuristic to calculate the base per-pupil amount and the student weights. The EB model identifies resources for prototypical elementary, middle, and high schools, as well as a prototypical district. The model needs to use specific sizes in order for the prototypes to indicate the relative level of resources in the schools. Although modeling is based on these prototypes, this does not imply Nevada or any other state should adopt new policies on district size.

Prototypical School Sizes in the Evidence-Based Model

The EB approach starts by identifying resources for prototypical elementary, middle, and high schools with enrollments of 450, 450, and 600 respectively, drawing from research on effective school size (see Odden & Picus, 2014). It uses this approach and these prototypes to indicate the relative level of resources in schools, as well as to calculate a base per-pupil cost. These prototypical school sizes reflect research on the most effective school sizes, although few schools are exactly the size of the prototypes. Although many schools in Nevada and other states are larger or smaller than these prototypical school sizes, these prototypical sizes can still be used to determine a new base per-pupil figure, as the new base per-pupil figure would be provided for all students in a school or district, whatever the actual size. States such as Arkansas, New Jersey, and North Dakota have taken this approach.

Additionally, the EB model begins with a prototypical district size of 3,900, which comprises four 450-student elementary schools, two 450-student middle schools, and two 600-student high schools. This configuration is then used to estimate a district-level central office cost per student. Several states, including Arkansas, New Jersey, and North Dakota have used the micro-EB formulas and ratios to estimate a base per-pupil cost estimate for their foundation school finance formula structure. Although actual school sizes vary, the prototypes provide good estimates of a base cost per pupil in the context of each of those states. The Wisconsin Study (Odden et al., 2007) estimated a base per-pupil cost using prototypical schools and a prototypical district, then compared that to a district-specific figure created by adapting the ratios and formulas to every school and district size. That study found that the difference between the two methods was about $50 per pupil, a small amount in a base spending level of approximately $10,000 per pupil. The EB prototypes should not be construed to imply Nevada needs to replace all school sites with smaller or larger buildings or break school districts into smaller units; they are used as heuristics to determine the estimated base cost per student.

2018 Core EB Nevada Recommendations

Table 5.1 provides a detailed summary of the core 2018 EB Nevada model resources:

Table 5.1 Summary of 2017 Nevada Adjusted Evidence-Based Model Recommendations

Model Element	2016 Evidence-Based Recommendation
Staffing for Core Programs	
1a. Preschool	Full day preschool for children aged 3 and 4. One teacher and one aide in classes of 15.
1b. Full-Day Kindergarten	Full-day kindergarten program. Each K student counts as 1.0 pupil in the funding system.
2. Elementary Core Teachers/ Class Size	Grades K-3: 15 Grades 4-5/6: 25. (Average class size of 17.3)
3. Secondary Core Teachers/ Class Size	Grades 6-12: 25. Average class size of 25
4. Elective/Specialist Teachers	Elementary Schools: 20% of core elementary teachers Middle Schools: 20% of core middle school teachers High Schools: 33 1/3% of core high school teachers
5. Instructional Facilitators/Coaches	1.0 Instructional coach position for every 200 students
6. Core Tutors/Tier 2 Intervention	One tutor position in each prototypical school (Additional tutors are enabled through at-risk and EL pupil counts in Elements 22 and 26)
7. Substitute Teachers	5% of core and elective teachers, instructional coaches, tutors (and teacher positions in additional tutoring, extended day, summer school, EL, and special education)
8. Core Pupil Support Staff, Core Guidance Counselors, and Nurses	1 guidance counselor for every 450 grade K-5 students 1 guidance counselor for every 250 grade 6-12 students 1 nurse for every 750 K-12 students, which supports a half time nurse in each prototypical elementary and middle school and a full-time nurse in each prototypical high school. (Additional student support resources are provided on the basis of at-risk and EL students in Element 23)
9. Supervisory and Instructional Aides	2 for each prototypical 450-student elementary and middle school 3 for each prototypical 600-student high school
10. Library Media Specialist	1.0 library media specialist position for each prototypical school
11. Principals and Assistant Principals	1.0 principal for the 450-student prototypical elementary school 1.0 principal for the 450-student prototypical middle school 1.0 principal and 1.0 assistant principal for the 600-student prototypical high school
12. School Secretarial and Clerical Staff	2.0 secretary positions for the 450-student prototypical elementary school 2.0 secretary positions for the 450-student prototypical middle school 3.0 secretary positions for the 600-student prototypical high school
13. Gifted and Talented Students	$40 per pupil
14. Intensive Professional Development	10 days of student-free time for training built into teacher contract year, by adding five days to the average teacher salary $125 per pupil for trainers (In addition, PD resources include instructional coaches [Element 5] and time for collaborative work [Element 4])
Dollar-Per-Student Resources	
15. Instructional Materials	$190 per pupil for instructional and library materials $50 per pupil for each extra help program triggered by at-risk and EL students as well as special education

16. Short Cycle/Interim Assessments	$25 per pupil for short cycle, interim and formative assessments
17. Technology and Equipment	$250 per pupil for school computer and technology equipment
18. CTE Equipment/ Materials	$10,000 per CTE teacher for specialized equipment
19. Extra Duty Funds/ Student Activities	$300 per student for co-curricular activities including sports and clubs for grades K-12 $50 per preschool student
Central Office Functions	
20. Operations and Maintenance	Separate computations for custodians, maintenance workers and groundskeepers, and $305 per pupil for utilities
21. Central Office Personnel/Non-Personnel Resources	A dollar per student figure for a prototypical 3,900 student central office based on the number of FTE positions generated – 8 professional and 15 classified positions – and the salary and benefit levels for those positions. The per-pupil figure also includes $300 per pupil for misc. items such as Board support, insurance, legal services, etc.
Resources for Struggling Students	
22. Tutors	1.0 tutor position for every 100 EL students and one tutor position for every 100 non-EL, at-risk students.
23. Additional Pupil Support Staff	1.0 pupil support position for every 125 EL students and one tutor position for every 125 non-EL, at-risk students.
24. Extended Day	1.0 teacher position for every 120 EL and for every 120 non-EL, at-risk students.
25. Summer School	1.0 teacher position for every 120 EL and for every 120 non-EL, at-risk students.
26. Staff for English Learner (EL) Students	As described above: 1.0 tutor position for every 100 EL students; 1.0 pupil support position for every 125 EL students; 1.0 extended day position for every 120 EL students; and 1.0 summer teacher position for every 120 EL students. In addition, 1.0 ESL teacher position for every 100 EL students.
27. Alternative Schools	One assistant principal position and one teacher position for every 7 students in an alternative program. One teacher position for every 7 Welcome Center eligible EL students.
28. Special Education	8.1 teacher positions per 1,000 students, which includes: 7.1 teacher positions per 1,000 students for services for students with mild and moderate disabilities and the related services of speech/hearing pathologies and/or OT PT. This allocation equals approximately 1 position for every 141 students. **Plus** 1.0 psychologist per 1,000 students to oversee IEP development and ongoing review, included in the central office calculation. This provides 3.9 psychologist positions in the central office. **In addition** Full-state funding for students with severe disabilities, and state-placed students, and Federal Title VIB, with a cap on the number covered at 2% of all students.

Calculating the Base Per-Pupil Cost and Pupil Weights

To estimate adequacy costs based on the model described in Table 5.1, the study team developed an Excel-based simulation that provides the evidence-based core or foundational cost per pupil as well as

computes pupil weights for special education, at-risk students, and EL students. Critical to these estimates are the costs of personnel. Salary and benefit data used in included in Appendix I.

With these compensation estimates, the per-pupil EB base expenditure is estimated to be $9,983, with extra weights of 0.31 for at-risk students and 0.40 for EL students. The per-pupil EB preschool cost estimate is $13,628, which computes to an extra weight of 0.37 relative to the base per-pupil expenditure estimate of $9,983. The cost estimate for alternative schools and the EL Welcome Center program for refugee EL students is $16,219 per pupil, which computes to an extra weight of 0.62 relative to the base per-pupil figure of $9,983.

We note that the EL per-pupil weight is a combination of extra tutoring ($902), extended day ($760) and summer school ($760) programming, additional pupil support ($691), and additional English language service ($902)—a total extra of $4,015, which equates to an extra weight of 0.40 relative to the base of $9,983. In calculating the extended day and summer school portions, however, the model assumes only half the EL students would attend the programs, drawing from research on attendance for these programs. If the model assumed a larger percentage of EL students would attend the extended day and summer school programs, the weight would increase. At 100 percent attendance, the total extra cost would be doubled for each of extended day and summer school, or $1,520. That would bring the total extra resources for EL to $5,535 ($4,015 plus $1,520). The EL weight would then be 0.55. Thus, the model predicts the *EL extra weight could range from 0.40 to 0.55*, depending on the assumed percentage of attendance for extended day and summer school programs, with the lower weight based on the traditional 50 percent assumed attendance.

The EB model includes an EL Welcome Center program for EL students entering schools after experiencing refugee status, violence in their home countries, no previous formal education, or other forms of trauma, who need a program to more slowly acculturate them into a regular Nevada school. The estimated per-pupil figure for the *EL Welcome Center program* for refugee EL students is $16,219 per pupil, which computes to an *extra weight of 0.62.*

The non-EL, per-pupil, at-risk weight could also vary depending on assumed attendance. The total extra for non-EL, at-risk students is a combination of extra tutoring ($902), extended day ($760), and summer school ($760) programming, additional pupil support ($691) or a total of $3,113, which equates to an extra weight of 0.31. The model would add $1,520 to that if it assumed 100 percent attendance for extended day and summer school programs, which would bring the total for non-EL, at-risk students to $4,633, which equates to an extra weight of 0.46. Thus, we could conclude that the *non-EL, at-risk weight could range from 0.31 to 0.46*, depending on the assumed percentage of attendance for extended day and summer school programs, with the lower weight based on the traditional 50 percent assumed attendance.

The EB model assumes the state funds 100 percent of the excess costs of programs for students with severe and profound disabilities. To estimate costs for students with mild and moderate disabilities, the EB model uses a "census" approach and computes an additional amount based on the count of *all* students in a district—not on a count of the special education students in each district. The EB estimate

for the cost of special education for students with mild and moderate disabilities is $654 per pupil for ***all*** students. This equates to a weight of 0.07 applied to the total number of students in a district (or state). The effect is that the total revenue generated through the EB Model for special education for children with *mild and moderate disabilities* is equal to the base EB cost estimate (in this model $9,983) times 0.07 for all students in the district (or state).

If a census approach was not used and a weight was instead applied to just mild and moderate students- about 10 percent of total enrollment- the weight would be .70, generating $6,988 per mild and moderate special education student.

VI. Draft Recommendations

The 2012 AIR report made a number of recommendations focused on modifying Nevada's existing funding system. The current study team's recommendations center on an approach to replace the existing funding system with a weighted student formula. Many of the recommendations made in this report could be applied to the existing system but the study team believes an overhaul of the system, likely phased in over time, would provide the state an equitable and student-oriented funding system that meets the characteristics of a good state-level funding formula described in Chapter 1. The study team recommends Nevada implement a new funding formula that will be:

Cost-based, with a base amount and adjustments for student and district characteristics determined by the resources needed to meet state standards and requirements.

Responsive to student need, through the use of adjustments, or weights, the system should provide additional resources to students based on need, such as being an at-risk, English learner, or special education student. Currently, the system provides resources through categorical funding streams for these students. A weighted formula would instead ensure all students that have these needs receive the same resources regardless of the availability of categorical funds for their school.

Responsive to district characteristics, through three separate adjustments: (1) a district size adjustment, (2) a comparative wage index (CWI), and 3) a necessarily small schools adjustment. Currently, the state applies a basic support ratio that accounts for size, density, and cost differences by creating a relative cost factor, meaning the sum of these district characteristics in relation to the state average. The study team believes the funding system's treatment of these characteristics should be: (1) unpackaged into separate adjustments, and (2) not measured in relative terms. For example, currently if a district experienced increased cost-of-living pressures, the funding system would only make an adjustment to its funding in relationship to the experience of other districts. So, if all the districts experienced the same increase in cost pressures—therefore increasing the statewide average—the relative change would be zero, even though it would be more costly to operate in all districts. The new approach would treat each adjustment for each district individually allowing for the recognition of all changing needs.

Transparent and flexible. By providing resources through a straightforward base and weights applied to generate resources for all students, not just those in schools that receive targeted funding streams, the formula should ensure the funding system is easy to understand and provides greater flexibility in how resources can be used to serve students. This increased transparency might also make it easier for districts to design student-weighted systems for their school-level funding.

Equitable. While a full equity analysis was outside of the scope of this study, the study team puts forth the following consideration: the resources inside the system meet equity criteria, but the combination of a low level of state support and unlimited use of outside local resources may be creating inequities in actual expenditures between districts. Increasing the level of state support that is equalized through the

use of a cost-based funding model should begin to address this issue. As analysis in chapter 3 showed, the state's current system has been measured as more inequitable overtime by national publications.

Recommended Base Costs and Adjustments

To determine the appropriate base amount and adjustments for a new weighted student formula, the study team considered all available data about current practices in the state and nationally, as well as adequacy findings from the current study and prior studies conducted in Nevada. This included:

- The current study's professional judgment and evidence-based approach findings.
- The results of the 2012 AIR study and the study team's updated analysis of current student need adjustments in comparison states. Since the updated comparison state analyses were focused on current practice in comparison states, and were not necessarily adequacy or cost-based adjustments, the study team also used results of adequacy studies conducted nationally over the past 10 years as another contextual comparison point.
- The 2006 study conducted by APA for the legislature, which used two approaches to set both a "current" funding target (successful schools approach) and a "goal" funding target (professional judgment approach). The successful schools approach developed a base cost by examining the spending of schools that successfully meet academic performance standards at the time as a starting point for phasing in an adequate funding system tied to increased funding as performance expectations increased.
- The professional judgment findings from the 2015 APA PJ study for the Lincy Institute at UNLV.

Base

Table 6.1 presents possible base amounts from the results of this current study, compared to the state's FY17 Basic Support Guarantee and the results of prior adequacy study work done by APA in Nevada.

Table 6.1: Base Amount Alternatives

	Basic Support Guarantee (16-17)	2006 Study Successful Schools	2006 Study PJ	2015 PJ/ 2018 PJ	2018 EB
Prior Study Figure	-	$4,660	$7,229	$8,577	-
Data Year	FY17	FY04	FY04	FY13	FY17
Inflation Factor	-	1.29	1.29	1.08	-
2016-17 Figure (Inflated)	$5,387[32]	$5,988	$9,289	$9,238	$9,983

To make the figures comparable, the study team inflated the results of the 2006 and 2015 studies into FY2017 dollars. The resulting base amounts present three different methods of determining a base:

- The state's FY2017 Basic Support Guarantee (BSG)- excluding transportation- which is not cost-based, and is instead based on available resources;
- The 2006 Successful Schools base amount, which is cost-based and represents the resources needed (at that time) to perform at the level of the most successful schools in the state. This is a

[32] Nevada's 2016-17 BSG in statute is $5,774. The figure shown is that amount less $387 for transportation.

relative performance level and did not represent what it takes to meet all state standards and requirements.

- The 2006 PJ base, 2015 PJ/2018 PJ base, and the 2018 EB base are also cost-based and reflect the resources needed to ensure all students can meet all state standards and requirements.

In FY17, the Basic Support Guarantee once transportation dollars were excluded was $5,387 per student. This amount does not include "outside" local revenues for districts so reported differences between recommendations and actual would be lower if those resources were included.

The inflation-adjusted 2006 successful schools base cost is $601 more per student than the FY17 BSG, at $5,988. While this does not represent a full adequacy base amount, it is at least a cost-based amount for consideration as a starting point for a new system. The study team recommends an update to the successful schools data analysis to ensure the amount is similar once the pool of schools is updated to reflect the current spending of schools performing at the highest levels in the state.

The 2006 PJ, 2015 PJ, and 2018 EB base amounts would be considered the cost of full adequacy at the base level, or the resources needed to meet all standards and requirements. The figures range from $9,238 to $9,983. To be conservative, the state could use the lower of the two figures as the base amount, or choose to implement another amount within this range.

Student Need Adjustments

To determine student needs adjustments, the study team compared the results of all adequacy studies (2006, 2015, and 2018) against the results of the AIR study/updated analysis and results of other adequacy studies nationally for the past 10 years.[33] Weights are presented in two ways, against the full adequacy base of each study, or against the starting base amount recommended ($5,988 derived from the 2006 successful schools approach). For results from other states, the weight shown is against that state's base amount (current or adequacy recommendation).

At-Risk

Table 6.2 looks at possible adjustments for at-risk students from each of the data sources.

Table 6.2: At-Risk Adjustment Alternatives

Nevada Studies				
	2006 Study PJ	**2015 PJ**	**2018 PJ**	**2018 EB**
Applied to Each Study's Adequacy Base	.35	.35	.20-.29	.31-.46
Scaled to Apply to Base of $5,988	.54	.54	.31-.45	.52-.77
Comparison to Other States/Studies				
AIR Study/Updated Analysis, Weight in Each State Against their Base: .22 (average)				
National Adequacy Comparison, Weight Against Adequate Base: .35 (average)				

[33] Aportela, A., Picus, L., Odden, A. & Fermanich, M. (2014). *A Comprehensive Review of State Adequacy Studies Since 2003*. Augenblick, Palaich and Associates (2018). *Alternative Approaches to Recalibration and Reconciliation of Study Results to Provide Final Recommendations.*

At-risk weights compared to an adequacy base ranged from 0.20 (lowest point in the 2018 PJ results) to .46 (highest point for the 2018 EB results). Within that range is the .35 weight that was recommended in 2006 and 2015 in Nevada, and is the average weight seen in other adequacy studies across the country. Each of these weights represent the total resource need from all available funding sources- state, local and federal. To determine the weight to be included in a new funding system in Nevada, the weight would need to be adjusted to represent the resource level needed from state and local sources, knowing that federal funding would be available separately.

In comparison states, the imputed at-risk weight was .22 on average based on the updated AIR analysis which is similar to the low end of the Nevada adequacy study range. The .22 weight represents the resources currently allocated to at-risk students in each of the comparison states, and is not necessarily representative of the resources needed for students to be successful ("what is" vs. "what should be") so it is not surprising that the figure is lower than most of the adequacy study findings.

Using this information, the study team's recommendation is an at-risk weight of .30. The study team believes that this weight, while higher than seen on average in the comparison states, is a more accurate representation of the level of state and local resources needed to serve at-risk students. Federal resources through Title I would be a separate funding stream.

A weight of .30 would generate $2,771 per at-risk student when applied to the full adequacy base of $9,238, or $1,796 when applied to the lower base of $5,988. To generate the $2,771 dollar amount on the lower base would require a scaled weight of .46.

English Learners

The study team considered the range of alternatives for EL weights, as shown in Table 6.3.

Table 6.3: English Learners Adjustment Alternatives

Nevada Studies				
	2006 Study PJ	**2015 PJ**	**2018 PJ**	**2018 EB**
Applied to Each Study's Adequacy Base	0.47	0.41	.57 (average)	.40-.55
Scaled to Apply to Base of $5,988	0.73	0.63	.88	.67-.92
Comparison to Other States/Studies				
AIR Study/Updated Analysis, Weight in Each State Against their Base: .44 (average)				
National Adequacy Comparison, Weight Against Adequate Base: .49 (average)				

Results of all adequacy studies ranged from .40–.57 (single EL weight). Both the comparison states and national adequacy recommendations were in the same range at .44 and .49 respectively. The study team recommends the state use a weight of .50 for ELs. Applied against the full adequacy base, the weight would generate $4,619 and a scaled weight would be .77 against the $5,988 base.

The single EL weight could also be disaggregated into a three-tier weight based on student language acquisition level based up their WIDA results. Using the relationship seen in the 2018 PJ study, weights of .78 for L1/L2s, .40 for L3/L4s, and .32 for L5/L6s could be used.

The state could also consider whether a student that is eligible for an at-risk weight and an EL weight should receive both weights, the higher of the two weights or a lower combined weight.

Special Education

Table 6.4 next looks at alternatives for a special education adjustment; figures are shown as the combined weight for all special education need levels unless otherwise noted.

Table 6.4: Special Education Adjustment Alternatives

Nevada Studies				
	2006 Study PJ	**2015 PJ**	**2018 PJ**	**2018 EB**
Applied to Each Study's Adequacy Base	1.2	1.1	1.4	.70 (mild and mod)
Scaled to Apply to Base of $5,988	1.9	1.7	2.16	1.17 (mild and mod)
Comparison to Other States/Studies				
AIR Study/ Updated Analysis, Weight in Each State Against their Base: .9 (average)				
National Adequacy Comparison, Weight Against Adequate Base: 1.1 (average)				

The 2018 EB results include a single weight for mild and moderate special education (.70) and suggest all higher cost students be paid for directly by the state. The three PJ data points are intended to provide the resources needed for all special education students, including higher need/cost students, and range between 1.1 (2015 PJ)–1.4 (2018 PJ). This range is at or above the results of national adequacy recommendations, on average. Again, these weights represent total need from all available funding sources and often a weight for a state funding system would be lower, recognizing that federal resources are available. From the AIR study, a .9 weight, on average, was seen in practice in other state funding systems.

The study team would recommend that the state consider a 1.1 full adequacy weight (representing state and local share) applied to all special education students, which would generate $10,162 per special education student applied to the adequacy base and $6,587 per student applied to the lower base. The scaled weight would need to be 1.9 to generate the $10,162 adequacy dollar level on the lower base. If the state would like to develop a three-tier funding model for special education and provide differentiated weights by student need, the proportionate relationship from the 2018 study could be applied to the combined full adequacy weight of 1.1, which would result in weights of .63 for mild students in the general education 80 percent or more of the day), 1.18 for moderate students (in the general education classroom 40 to 79 percent of the day), and 2.70 for severe students (in the general education less than 40 percent of the day). The scaled weight would result in tiered weights of 1.08, 2.03, and 4.60.

The state could also consider the model recommended by the 2018 evidence-based approach providing a weight for mild and moderate special education students (either applied to actual student counts or on a census basis), then continue to fund higher need students separately.

Gifted and Talented

Information about a possible gifted and talented adjustment was more limited, as shown in Table 6.5.

Table 6.5: Gifted and Talented Adjustment Alternatives

Nevada Studies				
	2006 Study PJ	**2015 PJ**	**2018 PJ**	**2018 EB**
Applied to Each Study's Adequacy Base	–	–	–	Less than 0.01
Scaled to Apply to Base of $5,988	–	--	–	0.01
Comparison to Other States/Studies				
AIR Study/Updated Analysis, Weight in Each State Against their Base: weights range from .02 to .60 (if the student has an IEP).				
National Adequacy Comparison: not available				

Neither the 2006 or the 2015 PJ study addressed gifted and talented student funding. The 2018 PJ panelists believed that with an adequate base no additional resources would be needed to serve gifted and talented, and the resources identified by the EB approach were minimal. Looking nationally, resources provided tended to be less than $200 a student.. Higher weights, such as the .60 noted as the highest of the range were seen when a student had an IEP and would therefore be eligible for a special education adjustment. As such, the study team would not necessarily recommend an additional weight for gifted and talented if an adequate base is implemented. However, if a lower base amount is used, the study team would recommend a 0.05 weight.

Summary of Base Cost and Student Need Adjustment Alternatives

The study team recognizes the implementing the full adequacy base amount of $9,238 is significantly higher than the current Basic Support Guarantee (BSG), and further, the state does not currently provide funds for at-risk and EL students outside of categorical funding streams. Therefore, in this section we present three alternative scenarios for implementing the above recommendations:

1. Full adequacy base and weights
2. Lower base and scaled weights
3. Lower base and relative weights

Full Adequacy

This alternative would represent the cost of fully implementing adequacy recommendations using a base cost derived from the 2018 EB/2015 PJ ($9,238) and the full adequacy weights recommended in each section above. Single weights or tiered weights for EL and for special education could be used, in this scenario and the two that follow.

Table 6.6: Base and Weights in Full Adequacy Scenario

Full Adequacy Scenario	
Base	$9,238
Student Need Weights	
At-Risk	.30 ($2,771)
English Learners	.50 ($4,619)
Special Education	1.1 ($10,162)

Scaled Weights

The second alternative would use the inflated 2006 successful schools base of $5,988 and then use a set of scaled weights to generate the same dollar figure per at-risk, EL, or special education student, as was generated in the full adequacy scenario. The study team would also recommend implementing a weight for gifted and talented, if the full adequacy base was not used. This approach would target additional resources towards at-risk, EL, special education, and gifted students first.

Table 6.7: Base and Weights in Current Base and Scaled Weights Scenario

Scaled Adjustments Scenario	
Base	$5,988
Student Need Weights	
At-Risk	.46 ($2,771)
English Learners	.77 ($4,619)
Special Education	1.70 ($10,162)
Gifted and Talented	.05 ($299)

Relative Adjustments

The final alternative would also use the inflated 2006 successful schools base ($5,988) and then apply the full adequacy weights to that amount, which would result in a lower level of resource generated, but at the same relative level in terms of the base. Though this change is below adequacy level for the special needs students, it would be a dramatic shift towards a more student-centered funding approach, providing targeted dollars to all eligible students, and allow resources to grow similarly between the base and special needs funding over time.

Table 6.8: Base and Weights in Current Base and Relative Weights Scenario

Relative Weights Scenario	
Base	$5,988
Student Need Weights	
At-Risk	0.35 ($2,096)
English Learners	0.50 ($2,994)
Special Education	1.1 ($6,587)
Gifted and Talented	0.05 ($299)

Prior to implementing a relative weight for special education, a comparison against current expenditures were need to be made to ensure that funding does not drop below current funding and violate federal maintenance of effort and fiscal support requirements.

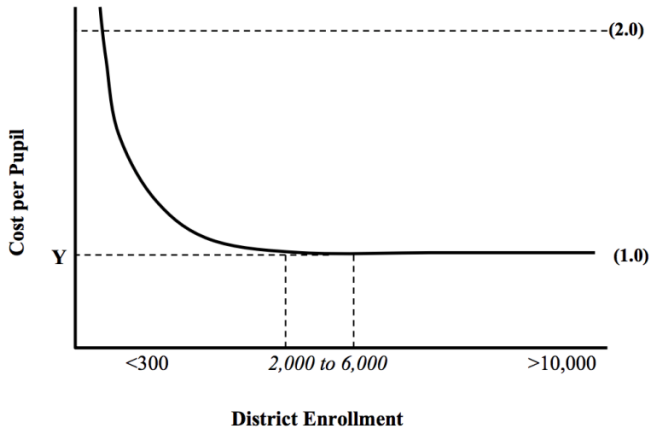
Adjustments for School/District Characteristics

In any scenario above, the study team also recommends providing three additional adjustments to address school/district characteristics: district size, cost of living through a comparable wage index (CWI), and necessarily small schools.

District Size

Given the more limited scope of the 2018 study, district size was not addressed. However, the study team believes that the state funding system needs to include an adjustment that accounts for the different costs experienced in districts due to having differing economies of scale. The 2012 AIR report also highlighted that such an adjustment would be necessary and provided the following depiction of such a relationship between size and cost (creating a J curve) as seen in school finance research:

Figure 6.1: J Curve



This relationship is consistent with the results of the 2018 EB and PJ studies, that while based on two different district sizes (3,900 for EB, and 50,000 for PJ) were similar in terms of per-pupil costs. The $9,238 figure from the PJ would be the floor figure where the size adjustment would be 1.0 and the higher EB figure of $9,983 supports the concept that costs increase slightly as size decreases to a certain point and then increase exponentially.

The study team looked to the findings of the 2006 study- including both a minimum data point at 50 students and a smaller data point at 780 students- to update a size adjustment for Nevada. An updated formula was developed to generate the different base amounts needed at each of the size data points that is as follows:

*For districts above 3,900 students: size adjustment factor = (-.000001735*enrollment) + 1.0868*

*For districts below 3900 students: size adjustment factor = (-0.281*ln(enrollment)) + 3.4*

Table 6.9 presents the size adjustment factor for districts at different size points. The study team recommends that these size adjustment factors be applied to the base separately from any other adjustments for district characteristics or student need.

Table 6.9: Possible District Size Adjustment

District Enrollment	Size Adjustment Factor
50	2.30
100	2.11
250	1.85
500	1.65
780	1.53
3,900	1.08
7,500	1.00
10,000	1.00
50,000	1.00
300,000	1.00

Comparable Wage Index

As describe in chapter 3, APA believes the CWI is the best metric to use in looking at the differential in costs facing school districts related to personnel, as long as other district characteristics, such as size, are being taken into account elsewhere. The most recent national data on CWI comes from Lori Taylor of Texas A&M University[34] and has been updated through 2013. Every district in the country and each state has an identified CWI figure. The figures can be used to compare districts to one another, but adjustments need to be made, which will be described below. Table 6.10 shows the raw CWI figures for each Nevada district along with the statewide average for each year.

Table 6.10: Raw CWI Figures for Nevada Districts

	2011	2012	2013
Clark	1.557	1.573	1.590
Churchill	1.349	1.358	1.374
Elko	1.349	1.358	1.374
Esmeralda	1.349	1.358	1.374
Eureka	1.349	1.358	1.374
Humboldt	1.349	1.358	1.374
Lander	1.349	1.358	1.374
Lincoln	1.349	1.358	1.374
Mineral	1.349	1.358	1.374
Nye	1.349	1.358	1.374
Pershing	1.349	1.358	1.374
White Pine	1.349	1.358	1.374

[34] http://bush.tamu.edu/research/faculty/Taylor_CWI/

	2011	2012	2013
Douglas	1.419	1.428	1.445
Lyon	1.419	1.428	1.445
Carson City	1.419	1.428	1.445
Storey	1.453	1.453	1.463
Washoe	1.453	1.453	1.463
State	**1.520**	**1.531**	**1.547**

The table above also shows one of the issues with using the CWI figure. Detailed data is not always available for each specific district; the limited data means there are only four different CWI figures generated for Nevada, with Clark County the only district with its own CWI figure. The other figures can be looked at as regional adjustments. Table 6.10 data shows CWI figures increasing for each year, based on the increased cost of staff.

To use the figures to compare cost differences between districts in Nevada, one of two adjustments can be used. Table 6.11 shows an adjustment that uses the lowest CWI figure as the baseline for the state. This would ensure that no district loses funding as the CWI is applied. The lowest CWI figure is divided into all other CWI figures to create this adjustment. Applying the CWI in this manner ensures no loss of funding but might overestimate the total funding needed in the state if the CWI is being applied to a cost-based funding figure that was derived using statewide average cost salaries.

Table 6.11: CWI Indexed to Lowest Cost Counties

	2011	2012	2013	Three Year Average
Clark	1.154	1.158	1.157	1.156
Churchill	1.000	1.000	1.000	1.000
Elko	1.000	1.000	1.000	1.000
Esmeralda	1.000	1.000	1.000	1.000
Eureka	1.000	1.000	1.000	1.000
Humboldt	1.000	1.000	1.000	1.000
Lander	1.000	1.000	1.000	1.000
Lincoln	1.000	1.000	1.000	1.000
Mineral	1.000	1.000	1.000	1.000
Nye	1.000	1.000	1.000	1.000
Pershing	1.000	1.000	1.000	1.000
White Pine	1.000	1.000	1.000	1.000
Douglas	1.051	1.051	1.051	1.051
Lyon	1.051	1.051	1.051	1.051
Carson City	1.051	1.051	1.051	1.051
Storey	1.077	1.069	1.064	1.070
Washoe	1.077	1.069	1.064	1.070

The CWI figure above was indexed using a 1.000 baseline range from 1.000 to 1.157 in 2013. This means the highest CWI district, Clark County, needs to pay an estimated 15.7 percent more than the lowest CWI districts to attract the same personnel. The table also shows a three-year average for each district. It is often suggested that use of a multiyear average can smooth out any fluctuations in the figures over time. The three-year average CWI figures range from 1.000 to 1.156. Though the minimum and maximum figures do not show much change with the averaging from the 2013 figures, Washoe and Storey receive a .006 percentage point increase using the averaging.

The other adjustment option is to index each district against the statewide average CWI figure. This adjustment does mean some districts would have resources adjusted down when the CWI is applied but may be more appropriate when applied to a statewide average cost-based funding figure. Table 6.12 shows the CWI figures when adjusting to the statewide average. The 2013 CWI ranges from a low of .888 to a high of 1.028. This means the lowest CWI districts would receive 88.8 percent of the funding that the CWI is applied to and the highest would receive 2.8 percent more. The relative difference between the lowest and highest CWI figures remains similar to the 1.000 figure. Again, a three-year average would smooth the CWI differences and would result in a range of .888 to 1.026.

Table 6.12: CWI Indexed to Statewide Average

	2011	2012	2013	Three-Year Average
Clark	1.025	1.028	1.028	1.027
Churchill	0.888	0.887	0.888	0.888
Elko	0.888	0.887	0.888	0.888
Esmeralda	0.888	0.887	0.888	0.888
Eureka	0.888	0.887	0.888	0.888
Humboldt	0.888	0.887	0.888	0.888
Lander	0.888	0.887	0.888	0.888
Lincoln	0.888	0.887	0.888	0.888
Mineral	0.888	0.887	0.888	0.888
Nye	0.888	0.887	0.888	0.888
Pershing	0.888	0.887	0.888	0.888
White Pine	0.888	0.887	0.888	0.888
Douglas	0.934	0.933	0.934	0.934
Lyon	0.934	0.933	0.934	0.934
Carson City	0.934	0.933	0.934	0.934
Storey	0.956	0.949	0.946	0.950
Washoe	0.956	0.949	0.946	0.950

Regardless of the CWI chosen, it should only be applied to a portion of the funding dollars since it is a wage adjustment. Often a factor around .90 is used to adjust for the portion of funding that is non-personnel related. Another way this sort of factor could be implemented is to adjust this cap by the

percentage of operating budget that is related to salaries, which is often a smaller percentage in rural communities; Colorado is an example of this sliding scale application.

Necessarily Small Schools

If Nevada elects to adopt a foundation formula model, the study team recommends adopting one of several approaches for compensating for small and/or isolated schools that is better aligned with the foundation concept than the current grouping of districts within the DSA. Each of these approaches is currently used in one or more states and could be adapted for use in Nevada. The three approaches described here include 1) student weights; 2) student count adjustments; and 3) minimum staffing/funding.

Student Weights

Arizona provides the best example of using student weights for generating additional revenues specifically for small and/or isolated schools. Under Arizona's formula, schools in districts with fewer than 600 students qualify for small school student weights. A qualifying district receives two sets of weights, one for elementary students (defined as students in grades K-8) and another for secondary students (defined as students in grades 9-12). The size of the weights decrease as district enrollment increases, with the highest weights for districts under 100 students, the next highest for districts between 100 and 499 students, and the lowest weight for districts between 500 and 600 students.

Districts that are eligible for small schools funding may also qualify for isolation funding if they meet certain criteria (a small isolated school district must contain no school that is fewer than thirty miles, or fifteen miles if road conditions and terrain cause driving to be slow or hazardous, from another in-state school serving similar grade ranges). Like the small school weighting, there are two sets of student weights, one each for elementary and secondary students, and the weights decrease as district enrollment increases up to the 600 student threshold.

Although the Arizona model is applied at the district level, a similar weighting scheme could be used for individual schools meeting specific size and isolation criteria that are appropriate to Nevada.

Adjusted Student Counts

A second approach to providing additional funding for small and/or isolated schools is to adjust its enrollment up to generate more formula funding. Minnesota uses this type of approach. Under this approach, a formula is used to increase the enrollment of schools that meet specific enrollment and isolation criteria. Minnesota applies two different formulas, one for elementary school sparsity and a second for secondary school sparsity. Both sparsity formulas are calculated at the school level.

Under the Minnesota example, schools qualifying for sparsity revenue must be both small (elementary schools with fewer than 20 students per grade and high schools with fewer than 400 students) and isolated (elementary schools at least 19 miles from the next nearest elementary school and high schools with an isolation index – a function of attendance area geographical size and miles to the nearest high school – greater than 23). Similar to a student weight, both formulas effectively increase enrollment in

proportion to the maximum qualifying enrollment (140 students for elementary schools and 400 students for high schools) and multiply the foundation base amount by the additional enrollment count.

Minimum Staffing/Funding

The third approach provides a minimum number of staff or a minimum school funding amount to schools whose enrollment falls below a certain enrollment threshold. Wyoming and California provide examples of these two methods respectively.

In Wyoming, any school with 49 or fewer students is guaranteed staffing of a 1.0 FTE assistant principal plus 1.0 FTE teachers for every seven students. These schools also receive per pupil funding allocations for instructional materials and supplies, technology, gifted and talented programs, professional development, assessments, and student activities. This formula applies to both elementary and secondary schools.

California's formula, which was modeled as an alternative in the AIR report, guarantees a minimum amount of funding to qualifying "necessary small" schools based on enrollment and the number of teachers employed at the school. Qualifying elementary schools must serve fewer than 101 students and be situated such that its students would have to travel more than 10 to 15 miles one way, depending on the school's enrollment, to the next nearest school. Qualifying high schools must serve fewer than 287 students and be located such that its students would have to travel at least 7.5 to 30 miles round trip, depending on the school's enrollment size, to attend the next closest high school.

Minimum funding under California's formula in 2017-18 for necessary small elementary schools ranged from $153,050 for a school with 24 or fewer students and one teacher, to $612,200 for a school with between 73 and 96 students and four teachers. For high schools, necessary small school funding ranged from $124,250 for schools with 19 or fewer students and one teacher, to $2,043,300 for a school with between 249 and 286 students and 15 teachers.

The study team is not recommending any one of the three approaches described above at this time, but it does recommend that the state further consider all three options which may best meet the context and needs of the state's necessarily small schools.

Next Steps

Prior to the release of the final report and final recommendations, the study team will develop an interactive Excel model that will determine the fiscal implications of implementing the alternative student need and district/school characteristic adjustments described in this chapter. The study team will also be gathering additional stakeholder feedback through a second online survey and educator listening sessions around the state.

Appendix A: Basic Characteristics of a Strong School Finance System

Basic Characteristics of a Strong School Finance System

1. The allocation of state support is positively related to the needs of school systems, where needs reflect the uncontrollable demographic characteristics of students and school systems.

2. The allocation of state support is inversely related to the wealth of school systems, where wealth reflects the ability of school systems to generate revenue for elementary and secondary education.

3. The allocation of state support is sensitive to the tax effort made by school districts to support elementary and secondary education, which might consider some, but not all, local tax efforts made on behalf of schools.

4. The amount of state support allocated to school systems reflects the costs they are likely to incur in order to meet state education standards and student academic performance expectations.

5. All school systems are spending at adequate levels, and the variation in spending among school systems can be explained primarily by differences in the needs of school systems and the tax effort of districts and is not only related to differences in school district wealth.

6. School systems have similar opportunities to generate revenues to reach those adequate spending levels.

7. School systems have a reasonable amount of flexibility to spend the revenues they obtain as they want, provided they are meeting, or making acceptable progress toward meeting, state education standards and student academic performance expectations.

8. The school finance system covers current operating expenditures as well as capital outlay and debt service expenditures.

9. State aid that is not sensitive to the needs of school systems and is not wealth-equalized, such as incentive grants or hold harmless funds, are limited relative to state support that is need-based and wealth-equalized.

10. Property taxpayers are treated equitably. Property is assessed uniformly within different classes of property and low income taxpayers are relieved of some of the obligation to pay property taxes.

11. The state has a procedure to define and measure school finance equity for students and taxpayers and periodically assesses the equity of the school finance system.

12. The state has a procedure to define and measure the adequacy of revenues school systems obtain for elementary and secondary education and periodically determines whether adequate revenues are available in all school systems.

Appendix B: State Funding Formulas

State	Formula	Base Per-Pupil Funding (FY 2017-18)	Legislation
Alabama	Resource Allocation	Teaching Units	Ala Code: 16-13-230.
Alaska	Foundation Formula	$5,930.0	AS §: 14.17.010.
Arizona	Foundation Formula	$3,683.3	ARS 15-901.B.2:
Arkansas	Foundation Formula	$6,713.0	A.C.A. § 6-20-2305:
California	Foundation Formula	(K-3: $7,941), (4-6: $7,301), (7-8: $7,518), (9-12: $8,939)	California Education Code 42238.02(d):
Colorado	Foundation Formula	$6,546.2	C.R.S.A. 22-54-104(5)(a)(XXIV)
Connecticut	Foundation Formula	$11,525.0	https://www.cga.ct.gov/2017/SUM/2017SUM00002-R01SB-01502-SUM.htm#P1684_217091
Delaware	Resource Allocation	Teaching Units	Title 14, Section 1703:
Florida	Foundation Formula	$4,204.0	Florida Statutes Title XLVII, Chapter 1011, Section 62
Georgia	Hybrid system - Foundation & P.A.	$2,541.6	Georgia Statute: Section 20-2-161
Hawaii	Single District		

Idaho	Resource Allocation	Teaching Units	Idaho Statutes: Chapter 33-1002.
Illinois	Foundation Formula	Differs per district	Public Act 100-0465
Indiana	Foundation Formula	$5,352.0	Indiana Code: Title 20, Article 43
Iowa	Foundation Formula	$6,664.0	Iowa Code: Chapter 257
Kansas	Foundation Formula	$4,006.0	Senate Bill 19 (2017)
Kentucky	Foundation Formula	$3,981.0	
Louisiana	Foundation Formula	$3,961.0	RS 17:15.1, but the Louisiana Board of Elementary & Secondary Education is responsible for actually implementing (Section 1107 of state rules)
Maine	Hybrid system - Foundation & P.A.	Varies by district	Title 20, Part 7, Chapter 606-B
Maryland	Foundation Formula	$7,012.0	Maryland State Code § 5-202:
Massachusetts	Other	Varies by district	Title VII, Chapter 70
Michigan	Other	Varies by district - based off of expenditures in 1994	Michigan - State School Act of 1979 (Section 388.1620):
Minnesota	Foundation Formula	$6,188.0	Minnesota Statutes: 126C.10;
Mississippi	Foundation Formula	$5,382.0	Mississippi Statute: Section 37-151-7

Missouri	Foundation Formula	$6,241.0	https://law.justia.com/codes/missouri/2005/t11/1630000011.html
Montana	Foundation Formula	Elementary: $5,471; High School: $7,005	Montana Legislation: 20-9-306
Nebraska	Foundation Formula - Based on Expenditures	Based on expenditures from comparable districts	Nebraska Revised Statute: 79-1007.16:
Nevada	Foundation Formula - Based on Expenditures	Based on district's pervious year expenditures - averages $5,897	Nevada Revised Statutes: Chapter 387
New Hampshire	Foundation Formula	$3,636.1	Title XV, Chapter 198:
New Jersey	Foundation Formula	Varies by district	Section: 18a:7
New Mexico	Foundation Formula	$4,053.6	Chapter 22, Article 8
New York	Foundation Formula	$6,422.0	Title V, Article 73:
North Carolina	Resource Allocation	Teaching Units	Senate Bill 257 (2017)
North Dakota	Foundation Formula	$9,646.0	Section 15.1-27-04.1(3)(a)(1)(a)
Ohio	Foundation Formula	$6,010.0	Ohio Revised Code 3317.022
Oklahoma	Foundation Formula	$3,031.8	Title 70, Chapter I, Article XVIII-B, Section 18-200.1
Oregon	Foundation Formula	$4,500.0	ORS 327.013(1)(b)(A)

Pennsylvania	Other	$151.9	Article 24, Section 2502.53
Rhode Island	Foundation Formula	$9,163.0	Section 16-7.2-3
South Carolina	Foundation Formula	$2,425.0	Section 59-20-10
South Dakota	Resource Allocation	Teaching Units	Section 13-13-10.1
Tennessee	Resource Allocation	Teaching Units	Section 49-3-307
Texas	Foundation Formula	$5,140.0	Texas Education Code: 42.101
Utah	Foundation Formula	$3,311.0	Title 53F-2
Vermont	Other	NA	Title 16, Chapter 133
Virginia	Hybrid system - Foundation & P.A.	Varies by district	2016-18 budget bill: https://budget.lis.virginia.gov/item/2018/2/HB5001/Introduced/1/139/. Standards of Quality - Chapter 13.2: https://law.lis.virginia.gov/vacode/title22.1/chapter13.2/
Washington	Resource Allocation	Teaching Units	House Bill 2242 (2018)
West Virginia	Resource Allocation	Teaching Units	WV Code Chapter 18, Article 9A
Wisconsin	Other	NA	Section 115.437
Wyoming	Other	Varies by district	Title 21, Chapter 13, Article 3

Appendix C: Funding Mechanisms for Special Education

State	System	Description	Amount (Dollar Amount or Weight)	Citation
Alabama	Census-Based System	The adjustment for special education reflects 5% ADM, weighted 2.50	2.5 for 5% of the ADM	Ala.Code 1975 § 16-13-232
Alaska	Single Student Weight or Dollar Amount and High-Cost Adjustment	Special needs funding factor: 1.20 Intensive Services Funding: intensive student count multiplied by 13	1.2 + (intensive student count) X 13	AS § 14.17.420
Arizona	Multiple Student Weights System	Fourteen different categories based on the student's specific disability	Ranging from 1.003 to 8.947	A.R.S. § 15-943
Arkansas	Only High-Cost	Special education-catastrophic occurrences funding: Arkansas only provides funding for very high-cost students		A.C.A. § 6-20-2305
California	Census-Based System	Based on the total number of students enrolled, regardless of students' disability status.	Not less than 10 percent	West's Ann.Cal.Educ.Code § 56836.145
Colorado	Single Student Weight or Dollar Amount and High-Cost Adjustment	Districts receive $1,250 for each student with a disability. An additional $6,000 for children with certain disabilities may be provided	$167,017,698 for budget year 2017-18.	C.R.S.A. § 22-20-103
Connecticut	Only High-Cost	District is responsible for cost, up to four and one-half times average per-pupil educational costs. Above that threshold, the state provides assistance.		C.G.S.A. § 10-76g

Delaware	Resource-Based System	Resource allocation model using increased teacher-student ratios.	Preschool: 12.8 K-3: 16.2 4-12 Regular Education: 20 4-12 Basic Special Education (Basic): 8.4 Pre K-12 Intensive Special Education (Intensive): 6 Pre K-12 Complex Special Education (Complex): 2.6.	14 Del.C. § 1703
Florida	Multiple Student Weights System and High-Cost Adjustment	Fixed funding for special education students not receiving level 4 or 5 services is provided through an Exceptional Student Education guaranteed allocation.	Kindergarten and Grades 1, 2 and 3 with ESE Services: 1.107 Grades 4, 5, 6, 7 and 8 with ESE Services: 1.000 Grades 9, 10, 11 and 12 with ESE Services: 1.001 Support Level 4: 3.619 Support Level 5: 5.526	West's F.S.A. § 1011.62
Georgia	Multiple Student Weights System	Five categories based on individual disabilities	2.37989 to 5.7509	Ga. Code Ann., § 20-2-161
Hawaii	Resource-Based System	Based on state appropriations for a single school district	$409,869,091 FY2019	http://www.hawaiipublicschools.org/DOE%20Forms/budget/Act49OpBudget.pdf
Idaho	Census-Based System and Resource Allocation Model	Districts receive special education funding at a rate of 6.0% of a district's total K–6 enrollment and 5.5% of a district's total 7–12 enrollment for additional support units. The percentage of a district's total enrollment eligible for exceptional child funding is divided by the exceptional child support unit divisor of 14.5 to determine the number of exceptional child support units generated by the district.	K-6: 6.0% 7-12: 5.5%	I.C. § 33-1002

Illinois	Resource-Based System and Census-Based System	Resource-based: One FTE teacher position for every 141 special ed students One FTE instructional assistant for every 141 special ed students One FTE phycologist for every 1000 special ed students Census-based: Annually, the State Superintendent shall calculate and report to each Organizational Unit the amount the unit must expend on special education and bilingual education pursuant to the unit's Base Funding Minimum, Special Education Allocation, and Bilingual Education Allocation.		105 ILCS 5/18-8.15
Indiana	Multiple Student Weights System	Dollar amounts based on severity and disability	(1) Severe disabilities: $9,156 (2) Mild and moderate disabilities: $2,300 (3) Communication disorders: $500 (4) Homebound programs: $500 (5) Special preschool education programs: $2,750	IC 20-43-7-6
Iowa	Multiple Student Weights System	Three different weight based on where the student is educated	Regular classroom: 1.8 Little integration in regular classroom: 2.2 Severe/multiple disabilities: 4.4	I.C.A. § 256B.9
Kansas		The Kansas Supreme Court ruled the state's education funding formula unconstitutional on October 2, 2017 and reiterated this finding on June 25, 2018. The Court has set a deadline of June 30, 2019 for the creation of a constitutional funding system.		
Kentucky	Multiple Student Weights System	Three weights	Each category is given an additional weighting of 2.35, 1.17, and 0.24	KRS § 157.200

Louisiana	Single Student Weight or Dollar Amount	Flat weight for all students with disabilities	2.5	LSA-R.S. 17:7
Maine	Multiple Student Weights System and High-Cost Adjustment	Students are assigned to three different categories based on the concentrations of students with disabilities in their districts.	Up to 15%: 2.277 More than 15%: 1.38 Fewer than 20 students: 1.29 Additional funding for very high cost students	20-A M.R.S.A. § 15681-A
Maryland	Single Student Weight System	Flat weight for all students with disabilities	1.74	MD Code, Education, § 5-209
Massachusetts	Census-Based System and High-Cost Adjustment	Census-based system	Assumed in-district special education enrollment: 3.75 percent Vocational enrollment: 4.75. Reimbursement for very high cost students.	M.G.L.A. 71B § 5A
Michigan	Reimbursement System	Not to exceed 75% of the total approved costs of operating special education programs	$956,246,100 for 2017-2018 from state sources and all available federal funding	M.C.L.A. 388.1652
Minnesota	Reimbursement System and Multiple Student Weights	Minnesota funds special education using a hybrid system incorporating multiple student weights and partial reimbursement.	56% reimbursement of a formula (reimbursement) plus additional funding based on students slotted into three categories.	M.S.A. § 125A.76
Mississippi	Resource-Based Allocation	One teacher unit is provided for each approved class of exceptional students. The funding allocated is based on the teacher's certification and experience		Miss. Code Ann. § 37-23-35
Missouri	Single Student Weight System	Flat weight for all students with disabilities, if the count exceeds the special education threshold	1.75	V.A.M.S. 163.011

Montana	Block Grant	The superintendent of public instruction shall determine the total special education payment to a school district through a block grant formula.	(i) 52.5% through instructional block grants; (ii) 17.5% through related services block grants; (iii) 25% to reimbursement of local districts; and (iv) 5% to special education cooperatives and joint boards for administration and travel.	MCA 20-9-321
Nebraska	Reimbursement System	For special education and support services provided in each school fiscal year, the State Department of Education shall reimburse each school district in the following school fiscal year a pro rata amount determined by the department.		Neb.Rev.St. § 79-1142
Nevada	Single Student Weight Or Dollar Amount	It is the intent of the Legislature, commencing with Fiscal Year 2016-2017, to provide additional resources to the Nevada Plan expressed as a multiplier of the basic support guarantee to meet the unique needs of certain categories of pupils, including, without limitation, pupils with disabilities, pupils who are English Language Learners, pupils who are at risk and gifted and talented pupils.		N.R.S. 387.121
New Hampshire	Single Student Weight or Dollar Amount and High-Cost Adjustment	Additional dollar amount in the formula	Additional $1,956.09 for a special education student who has an individualized educational plan (FY18 and FY19). Extra funding for very high cost students.	N.H. Rev. Stat. § 186-C:18

New Jersey	Census-Based System	Census-based system	SE = (RE x SEACR x AEC x ⅓) x GCA where RE is the resident enrollment of the school district or county vocational school district; SEACR is the State average classification rate for general special education services pupils; AEC is the excess cost for general special education services pupils; GCA is the geographic cost adjustment as developed by the commissioner.	N.J.S.A. 18A:7F-55
New Mexico	Multiple Student Weights System	Students are assigned to four different categories based on the services they receive.	Class A and Class B: 1.7 Class C: 2.0 Class D: 3.0	N. M. S. A. 1978, § 22-8-21
New York	Single Student Weight System	Flat weight for all students with disabilities	2.41	McKinney's Education Law § 3602
North Carolina	Single Student Weight System	Flat weight for all students with disabilities, which depends on state allocations	Depends on state allocations with a 12.5% cap	N.C.G.S.A. § 115C-107.1
North Dakota	Single Student Weight System	Flat weight for all students with disabilities	1.082	NDCC, 15.1-27-03.1
Ohio	Multiple Student Weights System	Students are assigned to six different categories based on their specific disabilities.	Category 1: $1,578 Category 2: $4,005 Category 3: $9,622 Category 4: $12,841 Category 5: $17,390 Category 6: $25,637	R.C. § 3317.013

Oklahoma	Multiple Student Weights System	Students are assigned to ten different categories based on their specific disabilities.	Vision Impaired: 4.8 Learning Disabilities: 1.4 Deaf or Hard-of-Hearing: 3.9 Deaf and Blind: 4.8 Educable Mentally Handicapped: 2.3 Emotionally Disturbed: 3.5 Multiple Handicapped: 3.4 Physically Handicapped: 2.2 Speech Impaired: 1.05 Trainable Mentally Handicapped: 2.3	70 Okl.St.Ann. § 18-201.1
Oregon	Single Student Weight System	Flat weight for all students with disabilities	2.0 with an 11% cap	O.R.S. § 327.013
Pennsylvania	Multiple Student Weights System	Multiple student weights based on cost	Three categories based on student costs • Category 1: < $25,000/year • Category 2: $25,000 - $49,999/year • Category 3: $50,000 and up/year Weights are assigned to each cost category • Category 1: 2.51% • Category 2: 4.77% • Category 3: 8.46%	24 P.S. § 25-2509.5
Rhode Island	Reimbursement and High-Cost Adjustment	Reimbursement capped at 110% of the state average Categorical for very high-cost students		Gen.Laws 1956, § 16-24-6 Gen.Laws 1956, § 16-7.2-6
South Carolina	Multiple Student Weights System	Different weights based on disability	Ten categories ranging from 1.114 to 3.57	Code 1976 § 59-20-40

South Dakota	Multiple Student Weights System	Six levels of disability based on individual disability	Additional dollar amounts ranging from $5,527.09 to $28,161.22	SDCL § 13-37-35.1
Tennessee	Resource-Based System	Resource allocation model where teachers, assistants, and supervisors are allocated based on the number of students with disabilities.	Teachers: 10 options based on disability and severity Supervisors: 750:1 Assessment Personnel: 600:1 Assistants: 60:1 Materials: $36.50 Equipment: $17.25 Travel: $17.25	Tenn. Comp. R. & Regs. 0520-01-09-.02
Texas	Multiple Student Weights System	Different weights based on where the student is educated and the resources provided.	Ranging from 1.1 to 5.0	V.T.C.A., Education Code § 42.151
Utah	Block Grant	Block grant based on prior 5 years' allocations with a growth factor	Capped at 12.18%	U.C.A. 1953 § 53A-17a-111
Vermont	Resource-Based Allocation and High-Cost Adjustment		Resource-based allocation: Teacher salary weighted 1.6 for special education. 9.75 special education teaching positions per 1000 students. Reimbursement for very high cost (one child costs over $50,000)	16 V.S.A. § 2961
Virginia	Resource-Based System	Resource-based system	Based on the cost of staff positions in a district	West's Ann.Cal.Educ.Code § 56836.10
Washington	Single Student Weight System	Flat weight for all students with disabilities	1.9309 with a cap of 13.5%	West's RCWA 28A.150.390
West Virginia	Only High-cost	Hybrid resource-allocation and reimbursement for only high-cost students	FTE calculated for teacher, therapist, aides, and bus drivers	http://wvde.state.wv.us/osp/fiscalmonitoring.html

Wisconsin	Reimbursement System and High-Cost Adjustment	Partial reimbursement	Additional funding for students costing over $30,000	W.S.A. 115.881
Wyoming	Reimbursement System	The amount provided for special education shall be equal to 100% of the amount actually expended by the district during the previous school year for special education programs and services.		W.S.1977 § 21-13-321

Appendix D: Funding Mechanisms for At-Risk Students

State	Mechanism	Description	Program Name	Amount	Citation
Alabama	Single weight or dollar amount	$100 per student defined as "at risk." These funds are required to be spent on tutorial assistance programs for students one or more grade levels below the national norm.	Assistance program for at-risk students	$100 per student	Ala.Code 1975 § 16-6B-3
Alaska	None				
Arizona	Single weight or dollar amount	Each school district and charter school shall submit to the state board of education a plan for improving the reading proficiency of its pupils in kindergarten programs and grades one, two and three.	K-3 Reading Program	1.040 Weight	A.R.S. § 15-211
Arkansas	Multiple weights or dollar amounts	Sliding scale based on the percentage of students in the national school lunch program.	National School Lunch State Categorical Funding	FY2018: >90%: $1,576 70%-90%: $1,051 <70%: $526	A.C.A. § 6-20-2305
California	Single weight or dollar amount	Supplemental Grant: English Language Learners (ELL), eligible for free or reduced-price meal (FRPM), foster youth, or any combination of these factors (unduplicated count).	Supplemental Grant	1.2	West's Ann.Cal.Educ.Code § 42238.02
	Single weight or dollar amount	Concentration Grant: Additional 50 percent of the adjusted base grant multiplied by ADA and the percentage of targeted pupils exceeding 55 percent of a local educational agency's (LEAs)	Concentration Grant	1.5 for the percentage of at-risk students exceeding 55%	West's Ann.Cal.Educ.Code § 42238.02

		enrollment.			
Colorado	Multiple Weights	Eligibility for participation in the federal free lunch program is used as a proxy of each school district's at-risk pupil population.	At-Risk Funding	Range: 1.12 to 1.30 depending on at-risk percentage	C.R.S.A. § 22-54-136
Connecticut	Single weight or dollar amount	Eligibility for federal assistance under Title I of the Elementary and Secondary Education Act as of each October 1 counts an extra 33%.	Poverty Count	1.33	C.G.S.A. § 10-262f
Delaware	None				
Florida	Categorical	Each school district receiving funds from the Supplemental Academic Instruction Categorical Fund shall submit to the Department of Education a plan that identifies the students to be served and the scope of supplemental academic instruction to be provided.	Supplemental Academic Instruction Funds	$712,207,631 for the 2017-18 fiscal year	http://www.fldoe.org/core/fileparse.php/7507/urlt/Fefpdist.pdf
Georgia	Resource-Allocation Model	Additional funding for remedial students, defined as students identified as not reaching or not maintaining adequate academic achievement relative to grade level.	Remedial Program	Sufficient funds to pay the beginning salaries for instructors needed to provide 20 additional days of instruction for 10 percent of the full-time equivalent count.	Ga. Code Ann., § 20-2-184.1
Hawaii	Single weight or dollar amount	"Economically disadvantaged," which is defined as qualifying for free and reduced price lunch.	Economically Disadvantaged Count	1.1	https://www.hawaiipublicschools.org/Reports/FY18WSFOECweights.pdf

Idaho	Resource-Allocation Model	12 students in grade 6-12 at an alternative school generate an alternative support unit.	Alternative Support Units		I.C. § 33-1002
Illinois	Multiple Weights	Count of children receiving services through the programs of Medicaid, the Supplemental Nutrition Assistance Program, the Children's Health Insurance Program, or Temporary Assistance for Needy Families.	GSA Grant	<15%: $355 15%-100%: [294.25 + (2,700 (Low-Income Percentage)^2)] X low-income pupils	105 ILCS 5/18-8.05
Indiana	Single weight or dollar amount	Complexity grants are used to help school corporations serving high poverty children.	Complexity Grant	$4,587 for FY2015	IC 20-43-13-4
Iowa	Single weight or dollar amount	Only for grades 1-6, eligibility for free and reduced price meals	At-Risk Programs	0.048 times the percentage of pupils in a school district, grades 1-6 who are eligible for free and reduced price meals, multiplied by the enrollment in the school district, plus 0.156 times the enrollment of the school district.	I.C.A. § 257.11
Kansas	Multiple Weights	The Kansas Supreme Court ruled the state's education funding formula unconstitutional on October 2, 2017 and reiterated this finding on June 25, 2018. The Court has set a deadline of June 30, 2019 for the creation of a constitutional funding system.	High-Density At-Risk Student Weighting	If >10%: 1.484 If<10%: assume 10% is at-risk If 35-50%: Subtract 35% and multiply by 1.7 if >50%: 1.105	K.S.A. 72-5151
Kentucky	Single weight or dollar amount	Average daily membership of students approved for free meals the prior fiscal year and the number of state agency children.	At-Risk Student Amount	1.15	702 Ky. Admin. Regs. 3:270

Louisiana	Single weight or dollar amount	Eligibility for free or reduced lunches and students identified as English Language Learners (non-duplicated count).	At-Risk Students	1.22 times the base amount	LSA-Const. Art. 8, § 13
Maine	Single weight or dollar amount	Eligibility for free or reduced-price meals	Economically Disadvantaged Students	1.15	20-A M.R.S.A. § 15675
Maryland	Single weight or dollar amount	"Compensatory education enrollment count" means the number of students eligible for free or reduced price meals for the prior fiscal year.	Compensatory education enrollment count	1.97	MD Code, Education, § 5-207
Massachusetts	Single weight or dollar amount	Low-income status is reported on the basis of eligibility for free and reduced lunch programs	Low-income status	FY16: $2,809	M.G.L.A. 70 § 2
Michigan	Single weight or dollar amount	One of the following criteria: did not achieve proficiency on the ELA, math, science, or social studies content areas of the state summative assessment; is at risk of not meeting the district's core academic curricular objectives in ELA or math; is a victim of child abuse or neglect; is a pregnant teenager or teenage parent; has a family history of school failure, incarceration, or substance abuse; or is enrolled in a priority or priority successor school. Or two of the following: eligible for free or reduced price breakfast, lunch, or milk; absent more than 10 percent of enrolled days or 10 school days during the school year; homeless; migrant; an	At-risk	1.115	M.C.L.A. 388.1631a

		English language learner; an immigrant who has immigrated within the immediately preceding three years; did not complete high school in four years and is continuing in school			
Minnesota	Single weight or dollar amount	Eligibility for free or Reduced Price Lunch	Compensatory Pupil Units	Compensatory Revenue = (Basic Formula Allowance – $415) x .6 x Compensatory Pupil Units	M.S.A. § 126C.05
Mississippi	Single weight or dollar amount	Eligibility for free Lunch	At-risk component	1.05	Miss. Code Ann. § 37-151-7
Missouri	Single weight or dollar amount	Eligibility for free and reduced price lunch if the district meets a minimum threshold	Free and reduced price lunch weighting	1.25	V.A.M.S. 163.011
Montana	Categorical	The At-Risk Student payment is intended to address the needs of at-risk students; money is distributed in the same manner as Title I monies are distributed to schools.	At-risk student payment		MCA 20-9-328
Nebraska	Multiple Weights	Poverty students are determined by Free and reduced Lunch status.	Poverty student count	• 1.0000 for the first 5% • 1.0375 for 5 - 10% • 1.0750 for 10 - 15% • 1.1125 for 15 - 20% • 1.1500 for 20 - 25% • 1.1875 for 25 - 30% • 1.2250 for more than 30% of formula students	Neb.Rev.St. § 79-1007.06

Nevada	Single weight or dollar amount	It is the intent of the Legislature, commencing with Fiscal Year 2016-2017, to provide additional resources to the Nevada Plan expressed as a multiplier of the basic support guarantee to meet the unique needs of certain categories of pupils, including, without limitation, pupils with disabilities, pupils who are English learners, pupils who are at risk and gifted and talented pupils.			N.R.S. 387.121
New Hampshire	Single weight or dollar amount	Eligibility for free and reduced-price meals	Differentiated aid for free and reduced-price meal eligible students	Additional $1,780.63	N.H. Rev. Stat. § 198:40-a
New Jersey	Multiple Weights	Free and reduced price lunches	At-risk pupil weight	FY2017: <20%: 1.41 >40%: 1.46 Sliding scale in between	N.J.S.A. 18A:7F-51
New Mexico	Single weight or dollar amount	Units calculated based on a factor or index determined by establishing a three-year average of the following: 1) percentage of membership used for Title I allocation; 2) percentage of membership classified as English language learners (using the Office of Civil Rights (OCR), and, 3) percentage of student mobility.	At-risk units	Three-Year Average Total Rate x 0.106 = At-Risk Index	N. M. S. A. 1978, § 22-8-23.3

New York	Single weight or dollar amount	Three-year average percentage of students in grades K-6 who are eligible for the free and reduced price lunch program and the census count of students in poverty	Extraordinary needs pupil count	(National School Lunch Program and Poverty) X 0.65 + (ELL) X 0.5 + (Sparsity Count)	McKinney's Education Law § 3602
North Carolina	Resource-Allocation Model	Every LEA receives the following: 1. Funding equivalent to School Safety Officer salary ($37,838) per high school 2. Remaining funds allocated based 50% on Federal Title I headcount ($329.77/pupil) and 50% on allotted ADM ($88.37/pupil) NOTE: Each LEA must receive at least the equivalent of two teachers and two instructional support personnel ($249,288).	At-risk student services		http://www.ncpublicschools.org/docs/fbs/allotments/general/2014-15policymanual.pdf
	Resource-Allocation Model	Disadvantaged students supplemental funding: Step 1: Use the average statewide (K-12) teacher-to-student classroom teacher allotment for the Fundable Disadvantaged Population, which is 1:21. Step 2: The targeted allotment ratios for the Fundable Disadvantaged Population are: • If low wealth % is > 90%, one teacher per 19.9 students • If low wealth % is > = 80% but < = 90%, one teacher per 19.4 students. • If low wealth % is < 80%, one teacher per 19.1 students. Step 3: Convert the teaching positions to dollars by using the state average	Disadvantaged students supplemental funding		http://www.ncleg.net/documentsites/committees/JLSCPSFF/2007-12-13%20Meeting/2007.12.13%20Pt.6_DSSF.pdf

		teacher salary (including benefits).			
North Dakota	Single weight or dollar amount	The three-year average percentage of students in grades three through eight who are eligible for free or reduced lunches.	Weighted ADM for students eligible for free or reduced lunches	1.025	NDCC, 15.1-27-03.1
Ohio	Single weight or dollar amount	The square of the quotient of that district's percentage of students in its total ADM who are identified as economically disadvantaged as defined by the department of education, divided by the percentage of students in the statewide total ADM identified as economically disadvantaged. Eligibility for Free or Reduced-Price Lunch, recipient of public assistance, or title 1 application	Economically disadvantaged index for a school district	$272 X ((# at-risk students in district/# at-risk students in state)^2 X # at-risk in district)	R.C. § 3317.022
Oklahoma	Single weight or dollar amount	Eligibility for free/reduced meal status. Note: starting in 2015, free and reduced meals no longer used as proxy for economic disadvantage for some types of schools (http://sde.ok.gov/sde/sites/ok.gov.sde/files/Econ.%20Disadv.%20Memo%20Final.pdf).	Economically disadvantaged weight	1.25	70 Okl.St.Ann. § 18-201.1
Oregon	Single weight or dollar amount	The number of children in poverty families, as determined by the Department of Education based on rules adopted by the State Board of Education; and the number of children in foster homes in the district; and the	Poverty weight	1.25	O.R.S. § 327.013

		number of children in the district in state-recognized facilities for neglected and delinquent children.			
Pennsylvania	Multiple Weights	Various weights based on concentration	Poverty average daily membership	1.3 or 1.6	24 P.S. § 25-2502.53
Rhode Island	Single weight or dollar amount	PK-12 students eligible for free and reduced lunch	Student success factor	1.4	Gen.Laws 1956, § 16-7.2-3
South Carolina	Single weight or dollar amount	(1) District poverty index as detailed on the most recent district report card, which measures student eligibility for the free or reduced price lunch program and Medicaid; and (2) Number of students not in poverty or eligible for Medicaid but who fail to meet state standards in either reading or math.	Students at risk of school failure	1.2	http://ed.sc.gov/finance/financial-services/manual-handbooks-and-guidelines/funding-manuals/fy-2014-2015-funding-manual/
South Dakota	None	None			
Tennessee	Resource-Allocation Model	Based on 1:15 class size reduction for grades K-12, estimated at $542.27 per identified at-risk ADM by eligibility for free and reduced price lunch	K-12 At-risk class size reduction		T. C. A. § 49-3-361
Texas	Single weight or dollar amount	Educationally disadvantaged student, determined by averaging the highest six months of student enrollment in the National School Lunch Program for free or reduced-price lunches for the prior federal fiscal year.	State compensatory education	1.2	V.T.C.A., Education Code § 42.152

Utah	Categorical	One or more of the following risk factors: (1) Low performance on U-PASS tests; (2) Poverty; (3) Limited English Proficiency; and (4) Mobility. "Mobility" means the number of students enrolled less than 160 days or its equivalent in one school within one school year. "Poverty" means the total number of students eligible for free or reduced-priced lunch.	Enhancement for At-Risk Students Program	Annual appropriation	U.A.C. R277-708
Vermont	Single weight or dollar amount	Additional 25% for students, ages 6-17, from families receiving food stamps.	Poverty ratio	1.25	16 V.S.A. § 4010
Virginia	Multiple Weights	1) A minimum 1.0 percent add-on for each child who qualifies for the federal Free Lunch Program; and 2) An addition to the add-on, based on the concentration of children qualifying for the federal Free Lunch Program. Based on its percentage of Free Lunch participants, each school division will receive between 1.0 and 13.0 percent in additional basic aid per Free Lunch participant.	Remedial Education Payments for federal free lunch participants	Rage: 1.01 to 1.13 based on the percentage of at-risk students	https://budget.lis.virginia.gov/get/budget/3279/
Washington	Single Student weight or dollar amount	Districts receive LAP allocations based on the number of students in poverty, as measured by eligibility for free or reduced-price lunch.	Learning Assistance Program	2014-2015: Additional $463	http://leg.wa.gov/Senate/Committees/WM/Documents/K-12%20Booklet_2015%202-10-15.pdf

West Virginia	Single weight or dollar amount	The total funds are distributed proportionally to each district on the basis of net enrollment, regardless of at-risk status.	Allowance for Alternative Education Programs	$18 per student	W. Va. Code, § 18-9A-21
Wisconsin	Categorical	A school district is eligible for aid if at least 50 percent of the district's student enrollment is eligible for free or reduced-price lunch.	Aid to High Poverty Districts	$16,830,000 in 2017-18 and 2018-19	W.S.A. 121.136
Wyoming	Single weight or dollar amount	Eligibility for the federal free and reduced lunch program. A district receives an EDY adjustment if the percentage of eligible children within any of its schools exceeds 150% of the statewide average concentration level for each school type.	Economically disadvantaged youth	If >150% of state average, additional $500 per at-risk student	W.S.1977 § 21-13-309

Appendix E: Funding Mechanisms for English Language Learners

State	Mechanism	Description	Amount (Dollar Amount or Weight)	Citation
Alabama	Categorical Grant	The amount is appropriated on a per student basis based on total state appropriations	$2,755,334 for FY 18	2017 Alabama House Bill No. 171, Alabama 2017 Regular Session
Alaska	Flat Student Weight/Dollar Amount	Special needs funding is available to a district to assist the district in providing special education, gifted and talented education, vocational education, and bilingual education services to its students	1.2	AS § 14.17.420
Arizona	Flat Student Weight/Dollar Amount	English Learner Classroom Personnel Bonus Fund	1.115	A.R.S. § 15-943
Arkansas	Flat Student Weight/Dollar Amount		$338 per identified student in FY2018	A.C.A. § 6-20-2305
California	Flat Student Weight/Dollar Amount		1.2	West's Ann.Cal.Educ.Code § 42238.02
Colorado	Multiple Weights and categorical	Formula: 1.2 weight in the formula, plus a bonus for districts with a high concentration of ELLs.	If ELL < state average: 1.2 If ELL > state average, then districts get additional funding	C.R.S.A. § 22-54.5-201 C.R.S.A. § 22-24-104
Connecticut	Categorical Grant	Districts shall annually receive, within available appropriations, a grant in an amount equal to the product obtained by multiplying 1,916,130 by the ratio which the number of eligible children in the school district bears to the total number of such eligible children state-wide.	1,916,130 X Ratio of ELL students to statewide average	2017 Connecticut Senate Bill No. 1502, Connecticut General Assembly - June Special Session, 2017

Delaware	Resource-Allocation Model	The unit for academic excellence may be used to provide educational services for limited English proficient pupils.		14 Del.C. § 1716
Florida	Flat Student Weight/Dollar Amount		1.212	West's F.S.A. § 1011.62
Georgia	Flat Student Weight/Dollar Amount	English for speakers of other languages (ESOL) program	2.5558	Ga. Code Ann., § 20-2-161
Hawaii	Multiple Weights	Different weights depending on English language proficiency	Fully English Proficient: 1.0648 Limited English Proficient: 1.1944 Non-English Proficient: 1.3888 Aggregate: 1.2341	https://www.hawaiipublicschools.org/Reports/FY18WSFOECweights.pdf
Idaho	Categorical Grant	Based on total state appropriations	$3,820,000 in 2017-2018	2017 Idaho House Bill No. 287, Idaho Sixty-Fourth Idaho Legislature, First Regular Session - 2017
Illinois	Reimbursement	Each school district shall be reimbursed for the amount by which such costs exceed the average per pupil expenditure by such school district for the education of children of comparable age who are not in any special education program.	Reimbursement	105 ILCS 5/14C-12

Indiana	Multiple Weights	Non English-Speaking Program (NESP)	For 2017-2018: -$250 base per-pupil allocation -$131.50 additional per-pupil allocation for LEAs with an EL population in excess of 5% but less than 18% -$165.16 additional per-pupil for LEAs with an EL population greater than 18%	IC 20-30-9-5
Iowa	Flat Student Weight/Dollar Amount	0.22, may be weighted for up to five years, beginning with the budget year for which the student was first determined to be limited English proficient.	1.22	I.C.A. § 280.4
Kansas	Multiple Weights	Included in at-risk definition	Multiple weights based on concentration	K.S.A. 72-5151
Kentucky	Flat Student Weight/Dollar Amount		1.096	KRS § 157.200
Louisiana	Flat Student Weight/Dollar Amount		1.22	LSA-Const. Art. 8, § 13
Maine	Multiple Weights	Additional weight in formula depends on density of ELL students	A. Fewer than 15 ELL students: weight of 1.7 B. > 15 ELL students and < 251: weight of 1.5 C. 251 or more ELL students: weight of 1.525	20- A M.R.S.A. § 15675
Maryland	Flat Student Weight/Dollar Amount		1.99	MD Code, Education, § 5-208
Massachusetts	Multiple Weights	Additional weight in formula varies depending on grade		I MA ST T. XII, Ch. 71A

		level.		
Michigan	Multiple Weights		$6,000,000 total: $620 or $410 per FTE depending on proficiency	M.C.L.A. 388.1641
Minnesota	Multiple Weights	There are two parts to the EL portion of basic skills revenue: the first part or basic formula is a set amount per EL pupil; the second part of the EL formula is a concentration formula.	Flat allocation: $704 for each ELL Second allocation: varies based on concentration (FY18)	M.S.A. § 124D.65
Mississippi	None			
Missouri	Flat Student Weight/Dollar Amount		If ELL > 1.94% of ADA, then weighted at 1.60 (FY18)	V.A.M.S. 163.031
Montana	None			
Nebraska	Flat Student Weight/Dollar Amount	Must be less than a district maximum and adjustments are made after the calculation.	LEP allowance: 25% of the statewide average general fund operating expenditures per formula student X ELL	Neb.Rev.St. § 79-1007.08
Nevada	Categorical Grant	Zoom Schools Program in Clark and Washoe counties (plus 1,500 students in other counties) extended through 2019		2017 Nevada Senate Bill No. 504, Nevada Seventy-Ninth Regular Session
New Hampshire	Flat Student Weight/Dollar Amount		$711.40 (FY18 and FY19)	N.H. Rev. Stat. § 198:40-a

New Jersey	Flat Student Weight/Dollar Amount	For the 2008-2009 through 2010-2011 school years, the LEP weight shall be 0.5. For subsequent school years, the LEP weight shall be established in the Educational Adequacy Report.	0.47 (FY17)	N.J.S.A. 18A:7F-51
New Mexico	Flat Student Weight/Dollar Amount		1.35	N. M. S. A. 1978, § 22-8-22
New York	Multiple Weights	Included in Extraordinary Needs (EN) count.	EN = Poverty Count + (English Language Learner Count × 0.5) + Sparsity Count	McKinney's Education Law § 3602
North Carolina	Resource-Allocation Model	Eligible LEAs/charter schools must have at least 20 students with limited English proficiency (based on a 3-year weighted average headcount), or at least 2.5% of the ADM of the LEA/charter school. Funding is provided for up to 10.6% of ADM.	Each school receives the minimum of 1 teacher assistant position. 1. 50% of the funds (after calculating the base) will be distributed based on the concentration of limited English proficient students within the LEA. 2. 50% of the funds (after calculating the base) will be distributed based on the weighted 3-year average headcount.	http://www.ncpublicschools.org/docs/fbs/allotments/general/newpolicies17-18.pdf
North Dakota	Multiple Weights	Weight varies based on level of proficiency	1.40 categories 1-6 1.28 categories 7-12 1.07 categories 13-18	NDCC, 15.1-27-03.1

Ohio	Multiple Weights	Funding depends on duration of enrollment:	(A) $1,515 per student enrolled for 180 school days or less (B) $1,136 per student enrolled for more than 180 school days (C) $758 per student who does not qualify for inclusion under division (A) or (B) and is in a trial-mainstream period.	R.C. § 3317.016
Oklahoma	Flat Student Weight/Dollar Amount		1.25	70 Okl.St.Ann. § 18-201.1
Oregon	Flat Student Weight/Dollar Amount		1.5	O.R.S. § 327.013
Pennsylvania	Flat Student Weight/Dollar Amount		1.6	24 P.S. § 25-2502.53
Rhode Island	Flat Student Weight/Dollar Amount		1.1	Gen.Laws 1956, § 16-7.2-6
South Carolina	Flat Student Weight/Dollar Amount		1.2	2017 South Carolina House Bill No. 3720, South Carolina One Hundred Twenty-Second Session General Assembly - First Regular Session
South Dakota	Flat Student Weight/Dollar Amount		1.25	SDCL § 13-13-10.1

Tennessee	Resource-Allocation Model	The state's funding formula provides districts with funding for an additional teaching position for every 20 ELL students and an additional interpreter position for every 200 students.		T. C. A. § 49-3-307
Texas	Flat Student Weight/Dollar Amount		1.1	V.T.C.A., Education Code § 42.153
Utah	Categorical Grant	ELLS are included in At-Risk Students Program	20% of at-risk funding goes to high-poverty districts 76% distributed based on districts' at-risk student enrollment. 4% to all districts.	U.A.C. R277-708
Vermont	Flat Student Weight/Dollar Amount		1.2	16 V.S.A. § 4010
Virginia	Resource-Allocation Model	State funding shall be provided to support 17 full-time equivalent instructional positions for each 1,000 students identified as having limited English proficiency.	17 teachers per 1000 ELLs	VA Code Ann. § 22.1-253.13:2
Washington	Resource-Allocation Model	The formula provides 4.7780 hours of bilingual instruction per week. The formula translates to additional 11 funding of approximately $923 per eligible student in the 2014-15 school year.		West's RCWA 28A.180.080
West Virginia	Categorical Grant	In order to receive the funding, a county board must apply to the state superintendent.	Any appropriation made pursuant to this section shall be distributed to the county boards in a manner that takes into account the varying proficiency levels of the students and the capacity of the county board to deliver	W. Va. Code, § 18-9A-22

			the needed programs	
Wisconsin	Reimbursement	It is the policy of this state to reimburse school districts for the added costs of providing special programs.		W.S.A. 115.95
Wyoming	Flat Student Weight/Dollar Amount	A district receives an EDY adjustment if the percentage of eligible children within any of its schools exceeds 150% of the statewide average concentration level for each school type.	If >150% of state average, additional $500 per at-risk student	W.S.1977 § 21-13-309

Appendix F: Funding Mechanisms for Gifted/Talented Students

State	Mechanism	Description	Amount (Dollar Amount or Weight)	Citation
Alabama	None			
Alaska	Flat Weight		1.2	AS § 14.17.420
Arizona	Census-Based and Flat Weight	4.0 percent assumed for all districts	$75 per pupil for four per cent of the district's student count, or two thousand dollars, whichever is more	A.R.S. § 15-779.03
Arkansas	Categorical	Funds are appropriated to provide financial assistance to school districts operating programs for gifted and talented students.		A.C.A. § 6-42-106
California	None			
Colorado	Categorical		$12.1 million plus an additional $33 million from local and other resources.	C.R.S.A. § 22-20-205
Connecticut	Reimbursement	"Extraordinary learning ability" and "outstanding creative talent" shall be defined by the commissioner.	LEA is responsible for costs up to 4.5 times the average per-pupil educational costs. State reimburses the rest.	C.G.S.A. § 10-76a C.G.S.A. § 10-76g

Delaware	Resource Allocation Model	The unit for academic excellence may be used to provide educational services for gifted and talented pupils.		14 Del.C. § 1716
Florida	Categorical	The Exceptional Student Education (ESE) Guaranteed Allocation provides supplemental funding for students who have low to moderate handicapping conditions and/or are gifted students.	The guaranteed allocation is a fixed amount provided each district.	West's F.S.A. § 1003.57
Georgia	Flat Weight	Category VI of Special Education Funding - intellectually gifted	1.6589 for FY 2018 (adjusted annually)	Ga. Code Ann., § 20-2-161
Hawaii	Census-Based	The count used to determine the G/T enrollment at a school is based on a flat 3% assumption for each school.	1.265	https://www.hawaiipublicschools.org/DOE%20Forms/WSF/COWFICreport081815.pdf
Idaho	Categorical	"Gifted/talented children" means those students who are identified as possessing demonstrated or potential abilities that give evidence of high performing capabilities in intellectual, creative, specific academic or leadership areas, or ability in the performing or visual arts and who require services or activities not ordinarily provided by the school in order to fully develop such capabilities.	$1,000,000 in 2017-2018	2017 Idaho House Bill No. 287, Idaho Sixty-Fourth Idaho Legislature, First Regular Session - 2017
Illinois	Only if funding is available	When sufficient State funding is expected to be available to support local programs of gifted education, the State Superintendent of Education shall issue a Request for Proposals (RFP). To be considered for funding, an eligible entity shall submit for approval by the State Superintendent a plan for its program.		105 ILCS 5/14A-30

Indiana	Categorical	A school corporation may submit a grant proposal for planning or continuation of services. Proposals are reviewed to verify compliance with the High Ability Program Rule.	2016-2017: $12,548,096	IC 20-36-2-1
Iowa	Flat Weight		$82.67 per-pupil for 2017-2018	I.C.A. § 257.46
Kansas	None			
Kentucky	Multiple Weights	Funded under "Special Education Programs"		KRS § 157.200
Louisiana	Flat Weight	Funding for gifted and talented students with an IEP	1.6	2017 La. Sess. Law Serv. Hs. Conc. Res. 7 (WEST)
Maine	Categorical	The Gifted and Talented Allocation uses the most recent financial data for approved programs, or the approved budget amount, whichever is less, and multiplies that amount by an inflation adjustment.		20-A M.R.S.A. § 15672
Maryland	Only if funding is available	To the extent funds are provided in the State budget or are available from other sources, the State Board shall provide guidance, consultative and technical assistance, and fiscal support for programs that include.		MD Code, Education, § 8-204
Massachusetts	None			
Michigan	None			

Minnesota	Flat Weight	For fiscal year 2015 and later, the formula allowance is $13 per pupil. The revenue must be reserved and spent only to: (1) identify gifted and talented students; (2) provide education programs for gifted and talented students; or (3) provide staff development	$13 per pupil $12,235,000 for 2018	M.S.A. § 126C.10
Mississippi	Resource Allocation Model	The gifted education program is an add-on program funded by the state legislature through the Mississippi Adequate Education Program.	1. The first teacher unit shall be funded on the basis of a minimum of 20 identified and participating students. 2. The second gifted teacher unit shall be funded when there are 41 identified and participating students. 3. Additional gifted teacher units shall be funded based on the 40 + 1 formula.	Miss. Admin. Code 7-96
Missouri	None			
Montana	Categorical	District must apply to the state for funding. State funds must be matched with local funds.		MCA 20-7-903 Mont.Admin.R. 10.55.804
Nebraska	Categorical	Local systems may apply to the department for base funds and matching funds	Each eligible local system shall receive one-tenth of one percent of the appropriation as base funds plus a pro rata share of the remainder of the appropriation based on identified students, up to ten percent of the prior year's fall membership	Neb. Admin. R. & Regs. Tit. 92, Ch. 3, § 007

Nevada	Flat Weight	Funds will be distributed on a per pupil basis based on a count day(s) reporting mechanism to be established by the Department.		N.R.S. 388.5267
New Hampshire	None			
New Jersey	None			
New Mexico	Multiple Weights	Apply multipliers to the base per-pupil amount for gifted students; these multipliers vary depending on the degree of modification the students require to the general education program.	Varies by need	N.M. Admin. Code 6.29.1
New York	None			
North Carolina	Census-Based	All LEAs receive these funds regardless of the number of identified AIG students.	4% of ADM at $1310.82 per pupil	N.C.G.S.A. § 115C-150.5
North Dakota	Reimbursement	Funds must be distributed to reimburse school districts or special education units for gifted and talented programs upon the submission of an application that is approved in accordance with guidelines adopted by the superintendent of public instruction.	$800,000 in 2017	2017 North Dakota House Bill No. 1013, North Dakota Sixty-Fifth Legislative Assembly

Ohio	Flat Weight and Resource Allocation	The funding is distributed through 3 streams.	Identification Funding = (Formula ADM) X $5.05 Coordinator Funding = [(Formula ADM – Community School ADM) / 3,300] x $37,370 Specialist Funding = [(Formula ADM – Community School ADM) / 1,100] x $37,370	OAC 3301-51-15
Oklahoma	Flat Weight		1.34	70 Okl.St.Ann. § 18-201.1
Oregon	Categorical	Any school district may apply for state funds for services for talented and gifted children identified in the district.		O.R.S. § 343.399
Pennsylvania	Reimbursement	The term “children with exceptionalities” shall mean children of school age who have a disability or who are gifted and who, by reason thereof, need specially designed instruction. The state reimburses at different rates based on total cost.	Category 1: <$25k Category 2: $25k-$50k Category 3a: $50k-$75k Category 3b: >$75k	24 P.S. § 13-1373
Rhode Island	None			
South Carolina	Flat Weight	The SCDE will annually calculate each district's allocation based on the number of gifted and talented students projected to be served in each district as it relates to the total of all such students in the state.	1.15 District minimum: $15,000	S.C. Code of Regulations R. 43-220
South Dakota	None			

Tennessee	Resource Allocation Model	Part of special education funding. "'Child with disabilities' means the intellectually gifted."	Tiered teacher allocation system based on location of instruction and amount of specialized contact.	T. C. A. § 49-10-102 and T. C. A. § 49-10-113
Texas	Flat weight		1.12 with a 5% cap	V.T.C.A., Education Code § 42.156
Utah	Categorical	Enhancement for Accelerated Students	$5,032,400 in FY 18	U.C.A. 1953 § 53A-17a-165
Vermont	None			
Virginia	Resource Allocation Model	An additional payment shall be disbursed by the Department of Education to local school divisions to support the state share of one full-time equivalent instructional position per 1,000 students	$34,425,282 for FY 18	2016 Virginia House Bill No. 29, Virginia 2017 Regular Session
Washington	Census-based and Resource Allocation	5.0 percent of each school district's population	Provides 2.1590 hours per week in extra instruction with fifteen highly capable program students per teacher.	West's RCWA 28A.185.020
West Virginia	None			
Wisconsin	Categorical	The department shall award grants to nonprofit organizations, cooperative educational service agencies, institutions within the University of Wisconsin System, and school districts for the purpose of providing to gifted and talented pupils those services and activities not ordinarily provided in a regular school.	Maximum is $30,000 per grant. Total is $237,200 for FY18	W.S.A. 118.35

Wyoming	Flat Weight	$40.29/ADM	2017 Wyoming House Bill No. 236, Wyoming Sixty-Fourth Legislature - 2017 General Session

Appendix G: Professional Judgment Panel Participants

Name	District	Panel
AJ Feuling	Carson	Special Education Panel
Becky Kaatz	CCSD	At-Risk Panel
Betsy Sexton	Washoe	Special Education Panel
Brian Prewett	Washoe	At-Risk Panel
Bruce Williams	Eureka	EL Panel
Deanna McHenry	CCSD	Special Education Panel
Derild Parson	Churchill	Special Education Panel
Ignacio Ruiz	CCSD	EL Panel
Janeen Kelly	Washoe	EL Panel
Jason Goudie	CCSD	At-Risk Panel
Jeana Curtis	Washoe	At-Risk Panel
Kimberly Ivanick	CCSD	At-Risk Panel
Laura Austin	Carson	EL Panel
Lisa Bliss	Churchill	At-Risk Panel
Mike Schroeder	Washoe	EL Panel
Pilar Muana	Washoe	Special Education Panel
Ramona Esparza	CCSD	EL Panel
Ron Coombs	Washoe	At-Risk Panel
Stacey Ting	Washoe	EL Panel
Trish Lozano	Washoe	Special Education Panel
Troy Parks	Washoe	EL Panel
Trudy Nunn	Washoe	EL Panel

Appendix H: Summary of Nevada Standards and Requirements and Instructions to Professional Judgment Panel Members

Summary of Nevada Standards and Requirements

April 2018

Compulsory Education

Any person having under his or her control or charge a child who is between the ages of 7 and 18 years shall send the child to a public school during the time school is in session in the school district of residence. A child must be five on or before September 30 to be admitted into kindergarten and a child must be six on or before September 30 to be admitted into first grade. Further, kindergarten is required before a student can go on to grade 1. If a child does not complete kindergarten in a public school program, a licensed private school, an exempt private school, or have on file with the school district a notification of intent to provide home instruction, then the child must pass a developmental screening test for grade 1 readiness.[35] If the district determines that the child is not prepared for grade 1, he or she must be admitted to kindergarten.

The boards of trustees of each school district is required to provide at least 180 days of free school to their students.[36]

Student-Instructor Ratio Requirements[37]

NRS 388.700-NRS 388.725 requires the following statutory class-size ratios: kindergarten, grades 1 and 2, 16:1; and grade 3, 18:1. In grades 1 through 3, the flexibility allowing school districts to increase class size by up to two students was discontinued. The 2015 Legislature also passed A.B. 278 (Chapter 499, Statutes of Nevada), requiring the Department of Education to establish methods to monitor school district plans for class-size reduction, monitor the content and accuracy of quarterly reports concerning pupil-to-teacher ratios and average daily attendance, review and verify the accuracy of program variance requests, and provide documentation relating to the distribution and use of program funds as well as advising school district boards of trustees concerning its expectations for the use of funds.

Nevada's Read by Grade 3 Act[38]

SB 391, Nevada's Read by Grade 3 Act, became effective on July 1, 2015. This statute was designed to dramatically improve student achievement by ensuring that all students will be able to read proficiently by the end of the 3rd grade. SB 391 requires all public school districts and charter schools to develop local K-3 literacy plans aligned to the Nevada State Literacy Plan and are aimed at improving the literacy

[35] NRS 392.040
[36] NRS 388.090
[37] https://www.leg.state.nv.us/Division/Research/Publications/Factsheets/Class-SizeReduction.pdf
[38] http://www.doe.nv.gov/RBG3/Home/

of all K-3 grade level students. This statute also requires every elementary school in Nevada to designate a reading "learning strategist" to provide literacy-based professional learning, coaching, and guidance for all K-4 teachers at the site. SB 391 emphasizes the implementation of early intervention measures in reading achievement for all K-3 students who are determined to be struggling in reading as determined by the Brigance, MAP, and Smarter Balanced assessments which are detailed in the following section, "**Student Assessments**."

Nevada Academic Content Standards[39]

The Nevada State Board of Education adopted the Common Core State Standards (CCSS) for English Language Arts and Mathematics in 2010 and Next Generation Science Standards in 2014. The goal is to ensure all students are ready for college and careers. The Nevada Academic Content Standards are in place for all K-12 grades. The state defines standards in the following areas:

- ELA and Mathematics (informed by the CCSS)
- Computer Science
- Digital Learning/Distance Education
- Fine Arts
- World Language
- Health & Physical Ed
- Pre-K
- Science (informed by the Next Generation Science Standards)
- Social Studies
- Career & Technical Education

Student Assessments[40]

The following assessments are required by grade:

Grades Pre-K-K: Brigance Early Childhood Screens III- all students are required to be assessed upon entrance to Kindergarten to identify individual student needs and track progress, specifically regarding a student's literacy level. The Brigance is a collection of quick, reliable and highly accurate early childhood education assessments and data-gathering tools that are nationally standardized.

Grades K-3: Measures of Academic Progress (MAP)- MAP was officially adopted by the State Board of Education to assess Nevada students as a part of the Read by Grade Three (RBG3) program and is a computer-adaptive assessment utilized to monitor student growth to inform and personalize instruction. With the implementation of MAP in school year 2017-18, Nevada will, for the first time, have aligned standards, professional development, assessments, and expectations in Kindergarten through grade 3.

[39] http://www.doe.nv.gov/Curriculum_Standards/
[40] http://www.doe.nv.gov/Assessments/

Grades 3-8: Smarter Balanced Assessment (SBAC)- Nevada uses the Smarter Balanced assessments aligned to new Common Core State Standards, in English language arts and mathematics statewide in grades 3-8. The computer-adaptive format and online administration of the assessments provides meaningful feedback that teachers and parents can use to help students succeed. This assessment allows Nevada to measure itself with 15 other states that also administer the Smarter Balanced assessment.

Grades: 5, 8, and 10: Science- Science is federally required in grades 5, 8 and high school; the high school Science assessment was developed as the EOC Science exam that students will need to pass to fulfill high school graduation requirements (starting with the graduating class of 2020). The Science assessments are a computer-based test administered at schools once a year in the spring.

Grades 7-13: End of Course Examinations (EOC)- In 2017 State Board of Education approved recommendations related to the transition from End of Course (EOC) examinations to End of Course finals as required by Assembly Bill 7 (AB 7) from the 2017 legislative session. The EOC final is administered in the following courses (or equivalent, state-approved courses): Math 1–Algebra 1, Math II–Geometry, Integrated Math I, Integrated Math II, and ELA–English 10. The State Board adopted a phased implementation of the EOC final: starting in 2018-19 the EOC final will count at 10% of the student's final grade and increase 5 percentage points each year until reaching 20% of the grade in 2020-21.

Grade 11: College and Career Readiness Assessments (ACT)-To be eligible for graduation, all students, free of charge, must participate in Nevada's College and Career Readiness (CCR) assessment during their junior year of high school. The State Board of Education chose the ACT as Nevada's CCR assessment.

Grades 3-13: Nevada Alternate Assessment (NAA)- The NAA is the state assessment of alternate achievement standards. The assessment is administered to less than 1% of all students in Nevada who meet the strict criteria required in order to be assessed with the NAA. The NAA assesses student academic performance on Nevada Content Standards through direct observation of specific tasks.

Grades K-13: English Language Proficiency Assessment (WIDA)- The ESSA of 2015 requires that students identified as Limited English Proficient (LEP) are annually assessed for English proficiency in the four domains of speaking, listening, reading, and writing on English Language Proficiency Assessment. The WIDA Consortium provides Nevada's English Proficiency Examination.

Grades 4 & 8: National Assessment of Educational Progress (NAEP)- The NAEP is a continuing and nationally representative assessment of student performance in several content areas including, but not limited to reading, mathematics, science, writing, and U.S. history. Assessment is done via student/school sampling and reported for the state.

Grades 9-13: Career & Technical Education (CTE)- There are two types of Career and Technical Education (CTE) Assessments. The Workplace Readiness Skills Assessment measures student proficiency in the

Employability Skills for Career Readiness state standards. The End-of-Program Technical Assessments are program specific and measure the skill attainment of students who have completed a program course sequence. These assessments are aligned to the state standards.

Course and Graduation Requirements

Students must complete required course work, take the ACT in Grade 11, and earn 22.5 credits in certain subjects.

High school pupils must enroll in four credits of English; four credits of mathematics, including Algebra I and geometry; three credits of science, including two laboratory courses; and three credits of social studies, including American government, American history, and world history or geography.[41] This default curriculum includes more credits than are required for a diploma, but a pupil may request a modified course of study as long as it satisfies the requirements for a standard high school diploma or an adjusted diploma, as applicable.

There are currently six types of high school diplomas granted in Nevada: (1) standard; (2) advanced; (3) adult; (4) adjusted; (5) alternate; and (6) College and Career Ready. A standard diploma is awarded upon successful completion of 22.5 units (15 credits for required courses and 7.5 elective credits) and taking the ACT. . An advanced diploma requires completion of a minimum of 24 credits including all requirements for a standard diploma plus 1 additional credit each of mathematics, science, and social studies. In addition, the advanced diploma requires a minimum 3.25 Grade Point Average (GPA), which includes all credits applicable toward graduation. An adult diploma may be granted to a student who withdrew from high school before graduation, but has completed 20.5 units in a program of adult education or an alternative program for the education of pupils at risk of dropping out of high school. The alternate diploma as established in Assembly Bill 64 (2017) provides that a pupil with a disability may receive a standard high school diploma if he or she demonstrates through a portfolio of work, proficiency in the standards of content and performance established by the Council to Establish Academic Standards for Public Schools and satisfies the requirements set forth in his or her individualized education program (IEP). Assembly Bill 64 also provides that a pupil who has a significant cognitive disability may receive an alternative diploma if he or she passes an alternate assessment prescribed by the State Board. The College and Career Ready diploma is built on the foundation of an Advanced Diploma and requires a total of 24 units including 18 units of credit for the required courses, 6 units of credit for elective courses, a minimum 3.25 Grade Point Average (GPA) on a 4.0 grading scale, weighted or unweighted, must demonstrate proficiency in speaking not less than two languages, or have earned not less than two (2) units of credit used to complete the aforementioned requirements in the following: Advanced Placement (AP) courses, International Baccalaureate (IB) courses, Dual-credit/dual-enrollment (DC) courses, Career and Technical Education (CTE) courses, work-based learning courses, or

[41]Legislative Counsel Bureau, Policy and Program Report, April 2014.
http://www.leg.state.nv.us/division/research/publications/pandpreport/10-ese.pdf

a world language course. Finally, students earning a College and Career Ready diploma must obtain one or both of the College-Ready or Career-Ready Endorsements.[42]

Individuals with Disabilities Education Act (IDEA)[43]

The Individuals with Disabilities Education Act (IDEA) requires that students with disabilities receive services that are included in their Individualized Education Program (IEP), and they receive free appropriate public education in the least restrictive environment.[44] The law requires linking records of migratory children with disabilities among states, developing alternate assessments aligned with the state's content standards, reporting, specific performance goals and indicators, and special education teacher qualifications.

School Accountability/School Performance Framework[45]

The Nevada School Performance Framework (NSPF) is Nevada's school accountability system which was revised in September 2017. The NSPF classifies schools within a five-star performance rating system. The Elementary and Middle School NSPF rating incorporates measures of student proficiency, student growth, English language proficiency, closure of achievement gaps, and attendance as a measure of student engagement. The High School NSPF rating is similar to the Elementary and Middle School NSPF rating but includes graduation rate and college and career readiness assessment results in lieu of student growth and closure of achievement gaps.

Educator Preparation and Effectiveness

A new educator evaluation system was implemented in the 2015-16 school year[46] to support and evaluate teachers' and school administrators' ability to teach the more rigorous Nevada Academic Content Standards. Assembly Bill 222 in 2011 and Senate Bill 407 in 2013 required the statewide educator performance evaluation and support models for teachers and school administrators.[47] For the 2017-2018 school year, the evaluation system requires 20 percent of the evaluation of an individual teacher or administrator to be based upon the academic achievement of pupils as measured with a Student Learning Goal. For the 2018-2019 school year and thereafter the percentage of the evaluation of an individual teacher or administrator to be based upon the academic achievement of pupils increases to 40 percent.[48] In addition, the measure provides that an evaluation of a probationary teacher or a post-probationary teacher must include an evaluation of whether the teacher employs practices and strategies to involve and engage the parents and families of pupils in the classroom. Finally, the evaluation system shall require that an employee's overall performance be determined to be "highly effective," "effective," "developing," or "ineffective."

Every Student Succeeds Act (ESSA) and Nevada's Consolidated Plan[49]

[42] https://www.leg.state.nv.us/App/NELIS/REL/79th2017/Bill/4745/Text
[43] http://www.ncld.org/disability-advocacy/learn-ld-laws/idea/what-is-idea
[44] http://www.ncld.org/disability-advocacy/learn-ld-laws/idea/what-is-idea
[45] 2018 STIP State Improvement Plan, which was updated in March 2018
[46] http://www.reviewjournal.com/news/education/test-scores-could-matter-less-teacher-evaluations
[47] http://www.doe.nv.gov/NDE_Offices/Educator_Effectiveness/NEPF_Module_I-System_Overview/
[48] https://www.leg.state.nv.us/NRS/NRS-388.html#NRS388Sec090
[49] http://www.doe.nv.gov/uploadedFiles/ndedoenvgov/content/Boards_Commissions_Councils/ESSA_Adv_Group/NevadaSubmittedConsolidatedPlanFinal.pdf

The Every Student Succeeds Act (ESSA) replaces the No Child Left Behind (NCLB) Act and reauthorizes the Elementary and Secondary Education Act of 1965, returning much of the state's authority and flexibility to set policies, create timelines for progress, and develop school improvement plans that meet the needs of its students. NDE engaged stakeholders- parents, educators, civil rights organizations, the business community, and others- to develop its Consolidated State Plan which was approved in April 2017. Nevada's plan is focused on implementing strategies related to 1) develop school leaders, 2) use data to inform decisions impacting schools, and 3) identify and improve our lowest-performing schools.

INSTRUCTIONS TO PROFESSIONAL JUDGMENT PANEL MEMBERS

Augenblick, Palaich and Associates

April 2018

Augenblick, Palaich and Associates (APA) is currently conducting a school funding study as required by Senate Bill 178 that includes identifying the resources needed to serve at-risk students, English language learners (ELLs), special education and gifted students. One approach the study team is using is the professional judgment (PJ) approach which relies on the experience and expertise of Nevada educators to identify the resources needed to ensure that students can meet state standards. Today, you will be serving on a PJ panel as a part of this approach.

Below you will find a number of instructions to help you in this process. It is important to remember that you are not being tasked to build your "Dream School." Instead, you are being asked to identify the resources needed to meet the specific standards and requirements that the state expects students, schools and districts to fulfill. You should allocate resources as efficiently as possible without sacrificing quality.

1. You are a member of a panel that is being asked to design how programs and services will be delivered in representative school settings. These panels are being used to identify the resources that schools with a particular set of demographic characteristics should have in order to meet a specific set of "input" requirements and "output" objectives.

2. As a group, you will first review the resources allocated at the "base level" by prior PJ panels convened in 2014 for the Lincy Institute at UNLV, then you will address the addition resources needed for at-risk, English Language Learners (ELL), or special education and gifted students.

3. The characteristics of the representative school(s) are identified for each, including: (1) grade span; (2) enrollment; and (3) the proportion of students in the given student group.

4. The "input" requirements and "outcome" objectives that need to be accomplished by the representative school(s) are those required by the state. These requirements or objectives can be described broadly as education opportunities, programs, services or as levels of education performance. You will be provided a short summary of state expectations and performance standards; it is not meant to be exhaustive of all requirements that the state requires schools and districts to fulfill, but instead should be considered a refresher or reminder.

5. In designing the representative school(s), we need you to provide some very specific information so that we can calculate the cost of the resources that are needed to fulfill the

indicated requirements or objectives. The fact that we need that information should not constrain you in any way in designing the program of the representative school(s). Your job is to create a set of programs, curriculums, or services designed to serve students with particular needs in such a way that the indicated requirements/objectives can be fulfilled. Use your experience and expertise to organize personnel, supplies and materials, and technology in an efficient way you feel confident will produce the desired outcomes.

6. For this process, the following statements are true about the representative school(s) and the conditions in which they exist:

   Teachers: You should assume that you can attract and retain qualified personnel and that you can employ people on a part-time basis if needed (based on tenths of a full-time equivalent person).

   Facilities: You should assume that the representative school has sufficient space and the technology infrastructure to meet the requirements of the program you design.

   Revenues: You should not be concerned about where revenues will come from to pay for the program you design. Do not worry about federal or state requirements that may be associated with certain types of funding. You should not think about whatever revenues might be available in the school or district in which you now work or about any of the revenue constraints that might exist on those revenues.

   Programs: You may create new programs or services that do not presently exist that you believe address the challenges that arise in schools. You should assume that such programs or services are in place and that no additional time is needed for them to produce the results you expect of them. For example, if you create after-school programs or pre-school programs to serve some students, you should assume that such programs will achieve their intended results, possibly reducing the need for other programs or services that might have otherwise been needed.

Appendix I: Salaries and Benefits Used for Costing Out EB and PJ

	Benefit Amount/Rate
Health/Dental Amount per Eligible Employee	$6,614
Retirement	28.00%
Workers Compensation	1.95%
Unemployment	1.69%
Position Title	**Salary**
Instructional Staff	
Teachers	$54,555
Specials Teachers	$54,555
Instructional Facilitator (Coach)	$62,466
Teacher Tutor/ Interventionist	$54,555
Librarians/Media Specialists	$68,204
Technology Specialists	$68,204
Media Aide	$22,132
Instructional Aides	$20,860
504 Aide	$20,860
Pupil Support Staff	
Counselors	$62,285
Nurses	$57,341
Psychologist	$68,798
Social Worker	$68,798
Family Liaison	$30,294
Behavior Interventionist (Alternative to/ In School Suspension)	$58,300
Health Aide	$20,526
Speech Pathologist	$57,583
Therapists (OT/PT, Behavior, etc.)	$57,583
Transition Coordinator	$54,555
Job/Transitions Coach	$20,860
Administrative Staff	
Principal	$101,711
Assistant Principal	$80,614
Attendance/ Registrar	$33,351
Clerical/Data Entry	$33,351
Bookkeeping	$33,351
Athletic Director	$80,614
Other Staff	
IT Technician	$46,696
Substitute	$61,875
Duty Aides	$20,860

Security/ Duty Aides	$20,860
School Resource Officer	$54,555
District	
Superintendent	$130,836
Assistant/Associate Superintendent	$122,905
Director	$103,145
Supervisor	$83,752
Coordinator	$75,527
Manager	$71,061
Administrative Assistant	$33,351
AP/AR Clerks	$33,351
Payroll Clerks	$33,351
Other Professionals	$54,555
Data Specialist	$54,555
Translator	$33,351
Custodians	$35,461
Groundskeepers	$46,917

Appendix J: School Case Study Protocol

Nevada School Case Study Interview Protocol

Can you tell me a little about the community in which your school is located? Who are your students? Their parents? Major employers?

How has your school changed in recent years?
Declining enrollment? Increased enrollment? Changes in demographic (SES, race/ethnicity, ELL)?

STUDENTS

What is student mobility like in this school?

What is student attendance like in this school?

How are students assigned to classrooms/courses?

What are the average class sizes in each grade?

PreK	KG	1	2	3	4	5	6	7	8	9	10	11	12

Demographic	Percent	Notes
FRL		
Special education		
ESL		

STAFFING FTEs

What is teacher turnover like in this school?

From a list of people working in the school, fill in the following FTEs.

Category	FTE	Notes
Licensed Staff		
Core Teachers		
Elective Teachers		
Instructional Coaches		
Special education self-contained		
Other Special education teachers		
ESL teachers		
Tutors/Tier 2 interventionists		
Librarian		
Career and Technical		
Gifted		
Non licensed staff		
Aides		
Instructional Aides (techs)		
Special Education Aides		
Supervisory/Duty Aides		
Library Techs		
Administration		
Principal		
Assistant Principal		
Athletic Director		
Secretary/Clerical		
Pupil Support		
Guidance Counselor		
Nurse		
Social Worker		
Other		

STUDENT ACHIEVEMENT

Tell me how the school accomplished the achievement levels/gains we identified.

Does the school have specific school or improvement goals that contributed to these achievement gains in the school? *OR:* Which school or improvement goals were most helpful in advancing student learning?

Probes: achievement gap goals, goals for ELL, free and reduced price kids, minority kids, etc.

How are these goals set (e.g., district, school administrators, or school personnel)?

Class Schedule

(Interviewer should attempt to obtain a copy of the school's class schedule prior to the school visit in order to ask clarification questions during the visit.)

Please tell me about how the school day is organized? Does it vary by grade levels? Total instructional minutes, how much time for interventions, for specials, for teacher PD. (This information will flesh itself out in the later questions, but it's best to have an overview to start.)

Curriculum and Instruction

Instruction:

What particular instructional arrangements have been particularly useful for improving student learning?

How are <u>teachers organized for instruction</u>?
How are teachers assigned to classrooms? In high school, to courses?

Probe: Are teachers assigned to their own classrooms or in collaborative teams? What kinds of collaborative teams are there?

Probe: How are new teachers assigned and mentored?

Does the school have instructional coaches? If so, how are they used?

How does the school use student grouping practices?

Probe for flexible groups (groups that change based on student need) vs. static groups (groups that stay the same over long time periods).

What specific instructional strategies are in place for ELL students?

Probe for sheltered English

Curriculum

I'd like learn more about the curriculum programs that you employ at your school. Try and get names of curriculum programs (including software), texts, or materials, any supplementary materials, etc.

Tell me about your reading/ writing/ language arts program.

Tell me about your math program.

INSTRUCTIONAL INTERVENTIONS

I'd like to learn what instructional interventions your school has in place for students who struggle after core classroom instruction, i.e., after the initial dose of instruction.

How are students who are struggling identified and monitored?

Probe: Data from a single assessment used once a year? OR: Multiple assessments examined throughout the year?

What kinds of extra help do you have in your school for struggling students?

When is extra help provided, for how long, and where?

Probes: tutoring (what does this look like?), Tier 2 intervention, etc.
Who does it? Licensed teachers and/or aides, and split between the two

Does the school provide an Extended day? Summer School?

How are the interventions for and progress of students monitored?

ASSESSMENTS

Now, let's talk about assessments. Tell me what kind of assessment system or systems in place in your school have been particularly useful for improving student learning.

Probe for (1) benchmark assessments (e.g., NWEA MAP) or (2) short cycle/formative (Renaissance Learning STAR, AIMESWEB, etc.).

How are these assessments administered?

Probes: By the teacher or online, adaptive, etc.?
What is the cost per pupil of these assessments?

How do teachers use data from these assessments?

For Reading, for math?
For ELL kids, for poverty struggling kids?

PROFESSIONAL DEVELOPMENT

I'm going to shift gears a little to professional development for teachers. Can you tell me what PD looks like in your school?

What kinds of professional development topics does professional development focus on in your school have been particularly helpful for improving student learning?

Probe for: professional development that focuses on instructional strategies; on extra help for ELL/struggling poverty kids; curriculum reforms; on using data; etc. Anything linked to their overall curriculum and instructional strategies and focused on ELL and poverty kids

How is professional development delivered in your school?

Probe for: is delivery school based? ongoing versus one shot; what kinds of follow-up is provided?

Type	Time Allocated	Notes
Individual planning		
Collaborative Work with other teachers		
Pupil-free days for PD		

SCHOOL CULTURE

I'd like to step back a little now and ask you to tell me about your school culture. What's it like to work here? What do you think it's like to be a student here? What do you think your colleagues would say if I asked them the same question?

How well connected do students feel to the school?

What do you see as current or potential challenges to continued improvements in student achievement?

Is there anything else you think is important for us to know in terms of understanding how your school achieves learning gains?

Appendix K: References

Andrews, M., Duncombe, W. & Yinger, J. (2002). Revisiting economies of size in American education: Are we any closer to a consensus. *Economics of Education Review, 21*(3), 245-262.

Aportela, A., Picus, L., Odden, A. & Fermanich, M. (2014). *A Comprehensive Review of State Adequacy Studies Since 2003*. Denver, CO: Augenblick, Palaich & Associates. Retrieved at: http://www.marylandpublicschools.org/Documents/adequacystudy/AdequacyReviewReport_rev_091214.pdf

Augenblick, J., Silverstein, J., Brown, A. et al. (2006). Estimating the Cost of an Adequate Education in Nevada. Denver, CO: Augenblick, Palaich & Associates. Retrieved at http://apaconsulting.net/~apa/wp-content/uploads/2014/06/7-nevada.pdf

Baker, B. D., Farrie, D., & Sciarra, D. (2018). *Is School Funding Fair? A National Report Card* (7th Ed.). Newark, NJ: Rutgers, Graduate School of Education, Education Law Center. Retrieved from https://drive.google.com/file/d/1BTAjZuqOs8pEGWW6oUBotb6omVw1hUJI/view.

Blankstein, A. (2010). *Failure Is Not An Option, 2nd Edition*. Thousand Oaks: Corwin Press.

Blankstein, A. (2011). *The Answer is in the Room: How Effective Schools Scale Up Student Success*. Thousand Oaks: Corwin Press.

Chambers. J., et al. (2012). *Study of a New Method of Funding for Public Schools in Nevada.* San Mateo, California: American Institutes for Research. Retrieved at: https://www.air.org/sites/default/files/downloads/report/AIR_NV_Funding_Study_Sept2012_0.pdf

Chenoweth, K. (2007). *It's Being Done: Academic Success in Unexpected Schools*. Cambridge, MA: Harvard Education Press

Chenoweth, K. (2009). *How It's Being Done: Urgent Lessons from Unexpected Schools.* Cambridge, MA: Harvard Education Press.

Chenoweth, K. (2017). *Schools that Succeed*. Cambridge, MA: Harvard Education Press.

Cornman, S.Q., Young, J., Herrell, K.C. (2012). *Revenues and Expenditures for Public Elementary and Secondary Education: School Year 2009–10* (Fiscal Year 2010) (NCES 2013-305). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved from http://nces.ed.gov/pubsearch.

Duncan, G. J. & Murnane, R.J. (2014). *Restoring Opportunity: The Crisis of Inequality and the Challenge for American Education*. Cambridge, MA: Harvard Education Press.

Education Week. (2018). *2018 Quality Counts School Finance Report and Ranking.* Retrieved from https://www.edweek.org/ew/collections/quality-counts-2018-state-finance/index.html.

Fowler, W. J. Jr. & Monk D. H. (2001). *A Primer for Making Cost Adjustments in Education*. Washington, D.C.: U.S. Department of Education, Office of Educational Research and Improvement.

Imazeki, J. (2016). *A Comparable Wage Index for Maryland*. Denver, CO: Augenblick, Palaich and Associates.

Jimenez-Castellanos, O. & Topper, A. M. (2012). The cost of providing an adequate education to English language learners: A review of the literature. *Review of Educational Research*, 82(2), 179-232.

McMahon, W.W. (1996). Intrastate Cost Adjustments. In W.J. Fowler, Jr., (Ed.), *Selected Papers in School Finance, 1994* (NCES 96–068) (pp. 89–114). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

NEA Research. (2018). *Rankings of the States 2017 and Estimates of School Statistics 2018*. Washington, D.C.: National Education Association.

Nevada Legislative Counsel Bureau, Fiscal Analysis Division. (2017). *The Nevada Plan for School Finance, an Overview*. Retrieved at https://www.leg.state.nv.us/Division/Fiscal/NevadaPlan/Nevada_Plan.pdf.

Odden, A. (2009). *Ten strategies for doubling student performance*. Thousand Oaks, CA: Corwin Press.

Odden, A. (2012). *Improving student learning when budgets are tight*. Thousand Oaks, CA: Corwin Press.

Odden, A. and Archibald, S. (2009). *Doubling Student Performance and Finding the Resources to Do It.* Thousand Oaks, CA: Corwin Press.

Odden, A., and Picus, L. O. (2014). *School Finance: A Policy Perspective, 5th edition*. New York: McGraw-Hill.

Odden, A. & Picus, L.O. (2015). *Using the Evidence-Based Method to Identify a Base Spending Level and Pupil Weights for the Maryland School System*. Denver, CO: Augenblick Palaich and Associates.

Odden, A., Picus, L.O., & Goetz, M. (2010). A 50 State Strategy to Achieve School Finance Adequacy. *Educational Policy*. 24(4), 628-654.

Picus, L. O. & Odden, A. (2018). *An Evidence-Based Approach to School Finance Adequacy in Michigan*. Downloaded from www.picusodden.com from the Resources and State Studies tabs.

Picus, L.O., Allan Odden, William Glenn, Michael Griffith, & Michael Wolkoff. (2012). *An Evaluation of Vermont's Education Finance System*. Downloaded from www.picusodden.com from the Resources and State Studies tabs.

Picus, L. O., Odden, A., Goetz, M., Griffith, M., Glenn, W., Hirshberg, D., & Aportela, A. (2013). *An Independent Review of Maine's Essential Programs and Services Funding Act: Part 1*. Downloaded from www.picusodden.com from the Resources and State Studies tabs.

Silverstein, J., Brown, A., Shen, Y. (2015). *Professional Judgement Study Report* for the Lincy Institute at UNLV. Denver, CO: Augenblick, Palaich & Associates.

Taylor, L. L., & Fowler Jr, W. J. (2006). *A Comparable Wage Approach to Geographic Cost Adjustment.* Research and Development Report NCES-2006-321. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.

Verstegen, D. (2011). *Quick Glance at School Finance: A 50 State Survey of School Finance Policies and Programs, Volume I*. Retrieved from https://schoolfinancesdav.wordpress.com/a-50-state-survey-of-school-finance-policies-2011.